

COST ACCOUNTING AND
FINANCIAL MANAGEMENT-
REVISION BOOK

How to effectively use this book:

- ❖ Revision book covers past 11 RTP and exams
- ❖ Past experience indicates that minimum 70 percent of marks are asked from the past RTP and exam questions
- ❖ Please refer to this video to get a better perspective on how to use this revision material - <https://youtu.be/eHgXVUCI5QI>
- ❖ The above link will have the video for CA Inter (new syllabus) but the way in which the revision book is to be used has been explained properly in the video
- ❖ **Stage One:** Please read the theory for every chapter. Theory coverage would be sufficient to cover all practical theory questions and the same can help in answering problems
- ❖ **Stage two:** Start solving problems from individual chapters after completing theory. Try solving the question and in case you are stuck then please refer the summary of adjustments section. Summary of adjustments section has the guidance to solve a question
- ❖ **Stage three:** In case you are still not able to solve the question then please refer institute RTP and suggested answer to understand the question
- ❖ **Revision day before exam:** Please revise theory and summary of adjustments day before exam as the same can help in answering wide variety of questions. Also you can effectively work on various adjustments by quickly revising summary of adjustments section.

Solutions to questions:

- ❖ Below link has the compilation of past 11 RTP and exams. You can search for the question in the attachment and then look at the detailed solution for the same
- ❖ The link for the answer book is given below
<https://drive.google.com/open?id=1G9zg2p7UEDnb3098xv0JPxrNHYPNUqVd>

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KEY FORMULAE**Cost units:**

Industry	Cost unit
Transport	Passenger KM or Tonne KM
Brewing	Barrel
Coal mining	Tonne/ton
Engineering	Contract, job
Brick-making	1,000 bricks
Gas	Cubic feet
Power	Kilo-watt hour
Hotel	Room days or meal
Hospital	Patient days
Steel	Tonne
Oil	Barrel, tonne, litre
Automobile	Numbers
Cement	Tonne/bag
Chemicals	Litre, gallon, Kilogram, tonne etc
Credit control	Accounts maintained
Selling	Customer call, value of sales, orders taken
Materials storage/handling	Requisition unit received/issued
Personnel administration	Personnel record

Method of costing:

Industry	Method of costing	Suggestive cost unit
Transport	Operating Costing	Passenger KM or Tonne KM
Power	Operating costing	Kilowatt hours
Hotel	Operating costing	Room days
Hospital	Operating costing	Patient days
Steel	Process costing /Single costing	Tonne
Coal	Single costing	Tonne
Bicycles	Multiple costing	Number
Bridge construction	Contract costing	Project/unit
Interior decoration	Job costing	Assignment
Advertising	Job costing	Assignment
Furniture	Job costing	Number
Brick works	Single costing	Per unit
Oil refining mill	Process costing	Barrel/tonne/litre
Sugar company	Process costing	Tonne
Toy making	Batch costing	Units
Cement	Single costing	Tonne
Radio assembling	Multiple costing	Units
Ship Building	Contract costing	Project/unit

Economic Order Quantity

It is the quantity to be ordered at which the total cost will be minimum. In other words EOQ is the ordering quantity at which Carrying cost will be equal to ordering cost. EOQ can be calculated by using the formula:

$$EOQ = \sqrt{(2AB) \div CS}$$

Where **A** = Annual consumption; **B** = Ordering cost per order

CS = Cost of carrying and storage per unit per annum

Number of orders to be placed = $A \div EOQ$

Level	Formula
1. Minimum level	ROL - (Normal consumption * Normal lead time)
2. Maximum level	ROL + ROQ - (Minimum consumption * minimum lead time)
3. ROL	Maximum lead time * maximum usage (or) Minimum level + (Normal consumption * Normal lead time)
4. Average level	(Maximum level + Minimum level) / 2 (or) Minimum level + (ROQ/2)
5. Danger level	Normal consumption * Lead time for emergency purchases

Inventory Turnover Ratio = RM consumed / Average stock
Number of days inventory is maintained = 365 / Inventory Turnover Ratio

Formulae for various labour plans:

- Time rate plan:** Amount of wages = Time taken * rate/hour
- Piece rate plan:** Amount of wages = Production * rate/unit
- Halsey premium plan-** this system is also known as Split Bonus Plan or 50-50 plan.
Earnings = (Time Taken X Hourly Rate) + 50% of Time Saved X Hourly Rate.

4. Halsey-weir premium plan.

Earnings = (Time Taken X Hourly Rate) + 30% of Time Saved X Hourly Rate.

5. Rowan Premium plan

Earnings = (Time Taken X Hourly Rate) + (Time Taken/Standard Time X Time Saved X Hourly Rate)

6. Differential time rate systems

<i>Efficiency</i>	<i>Time rate applicable</i>
1. Up to 75%	Normal time rate.
2. From 76% to 80%	110% of time rate.
3. From 81 to 90%	120% of time rate.
4. From 91 to 100%	130% of time rate.
5. From 101 to 120%	140% of time rate

7. Taylor differential piece rate system - According to this system wages will be calculated as follows.

- If the output is below standard 83% of piece rate
- If the output is at or above standard 125% of piece rate

8. Merrick Multiple Piece Rate System.

<i>Efficiency</i>	<i>Piece rate applicable</i>
1. Up to 83%	Basic normal piece rate.
2. From 83% to 100%	110% of basic piece rate.
3. Above 100%	120% or 130% of basic piece rate.

9. Gantt Task and Bonus Scheme

<i>Output</i>	<i>Remuneration</i>
1. Output below standard	Time rate (guaranteed)
2. Output at standard level	Bonus of 20% of the time rate
3. Output above standard	High piece rate

10. Emerson Efficiency Plan – Under this plan hourly rate is guaranteed.

- Bonus payment starts at the rate of 01% of basic wages at 66.67% efficiency and gradually increases as the performance increases.
- At 90 % efficiency level the bonus is 9.91% and at 100% bonus is 20%.
- The appropriate bonus percentage is read off from specially compiled tables.
- Above 100% efficiency a worker in addition to his wages will get a bonus of 20% plus for every one percent increase in efficiency one percent increase in bonus.

11. Bedaux points system

Earnings = Hours worked * Rate per hour + $\frac{3}{4}$ th of time saved * Rate per hour

12. Barth plan - Under this system the workers are paid as follows.

Earnings = Hourly rate $\times \sqrt{\text{Standard hours} \times \text{Hours worked}}$

Labour Turnover:**Formulae when new recruitment is not considered:**

1. Separation method = No. of employees separated * 100 / Average labour force
2. Replacement method = No. of replacements * 100 / Average labour force
3. Flux Method = (Separations + Replacements) * 100 / Average labour force

Formulate when new recruitment is considered:

1. New recruitment method = New recruitments (excluding replacements) * 100 / Average labour force
2. Accession method = New recruitments (including replacements) * 100 / average labour force
3. Flux Method = (Separations + New recruitments) * 100 / average labour force

Treatment of overtime premium in cost accounting:

- If overtime is worked as a policy = Calculate average inflated wage rate including overtime premium and consider the same on number of hours
- If overtime is irregular to meet the production requirement = Consider overtime as a factory overhead and charge the same to the job
- If overtime is to meet the request of the customer = Charge the actual amount paid as wages to the customer

Primary and Secondary distribution-Direct redistribution

	Overhead	Basis of distribution
1.	Indirect material	Direct material
2.	Indirect wages	Direct wages
3.	Electric power	Horse power of machines – KWH
4.	Electric light	Light points, floor space, direct (if metered)
5.	Plant depreciation, repairs	Value of plant, HP of Machines
6.	Delivery expenses	Weight, volume, value etc.
7.	Audit fee	Sales or total cost
8.	Supervision	Number of employees

9.	PF & ESI	Direct wages
10	Rent, rates, depreciation, repairs-building	Floor space
11.	Storekeeping, internal transport	Value of materials handled
12	Advertising, sales expenses	Actual or percentage of sales
13.	Personnel, time keeping and wages office, canteen, staff welfare, safety	Number of employees or total wages
14.	Miscellaneous, General Expenses, Sundries.	Direct wages

Methods for distribution of overheads:

1. Direct re-distribution method
2. Step method or non-reciprocal method
3. Reciprocal services method
 - a. Simultaneous equations method
 - b. Repeated distribution method
 - c. Trial and error method

Computation of cost of job:

- ❖ **Step 1:** Prepare primary overhead distribution statement
- ❖ **Step 2:** Prepare secondary overhead distribution statement
- ❖ **Step 3:** Compute overhead absorption rate using the formula
 - $\text{OAR} = \text{Budgeted overheads} / \text{Budgeted suitable base}$
- ❖ **Step 4:** Compute cost of the job using the following format:

Particulars	Amount
Direct Material	XXX
Direct Labour	XXX
Overheads (OAR * Actual suitable base)	XXX
Total cost	XXX
Profit	XXX
Selling Price	XXX

Commonly used methods for absorbing overheads:

- ❖ Following are the commonly used method for absorbing overheads:
 - ✓ Percentage of direct materials
 - ✓ Percentage of prime cost
 - ✓ Percentage of direct labour cost
 - ✓ Labour hour rate
 - ✓ Machine hour rate and
 - ✓ Rate per unit of output

Treatment of under/over absorption:

When under/over absorption is very small	Transfer the entire amount to costing profit & loss account
Large under/over absorption due to abnormal reasons	Transfer the entire amount to costing profit & loss account
Large under/over absorption due to normal reasons	Calculate supplementary recovery rate (SRR) and charge the amount to units sold, units unsold and units in process $\text{SRR} = \frac{\text{Amount of normal under-absorption}}{\text{Units produced (including WIP)}}$

Note: Under/over absorption overheads can also be carried forward to the next year and recovered in the next year

Ledgers maintained under non-integrated accounting system:

Ledger	Description
Cost Ledger Control Account	✓ This is also known as General Ledger Adjustment Account. This account is used to complete double entry
Stores Ledger Control Account	✓ This account records all inflow (debited) and outflow (credited) of raw material. ✓ Normal loss of raw material is transferred to overhead account whereas abnormal loss of raw material is transferred to costing profit and loss account
Wages Control Account	✓ This account is debited with entire wages paid. ✓ Direct wages is transferred to WIP control account and indirect wages is transferred to factory overhead control account. ✓ Wages for abnormal idle time is transferred to costing profit and loss account ✓ Non-productive of direct workers is to be treated as indirect wages and the same will be transferred to factory overhead control account
Factory Overhead Control Account	✓ This account is debited with overheads incurred ✓ The account is credited with overheads recovered and the same is transferred to WIP control account ✓ The difference between debit and credit side is under/over absorption of overheads. This amount can be either carried forward to next year or be transferred to costing profit & loss account
Work-in-progress control account	✓ This account is debited with cost of production which would include Direct Material, Direct Labour, Direct Expenses and Factory overheads ✓ The production for the current year will be transferred to finished goods control account and the same would be credited in this account
Administration overhead control account	✓ This account is debited with overheads incurred ✓ The account is credited with overheads recovered and the same is transferred to FG Control account ✓ The difference between debit and credit side is under/over absorption of overheads. This amount can be either carried forward to next year or be transferred to costing profit & loss account
Finished Goods Control Account	✓ This account is debited with value of goods transferred from work-in-progress and administration overheads recovered. ✓ This account is credited with cost of units sold during the year and the same is transferred to cost of sales account
Selling and Distribution Account	✓ This account is debited with overheads incurred ✓ The account is credited with overheads recovered and the same is transferred to cost of sales account ✓ The difference between debit and credit side is under/over absorption of overheads. This amount can be either carried forward to next year or be transferred to costing profit & loss account

Ledger	Description
Cost of sales account	✓ This account is debited with cost of finished goods transferred from FG account as well as selling and distribution overheads account ✓ This account is closed by transferring the balance to costing profit and loss account
Sales account	✓ This account is credited with sales and the same is transferred to costing profit and loss account
Costing Profit and Loss Account	✓ This account records cost of sales, sales and under/over absorbed overheads ✓ Profit/loss for the year is transferred to cost ledger control account

Journal entries under non-integrated system:

Transaction	Journal Entry
<u>Entries relating to raw material:</u>	
Purchase of raw material	Stores Ledger Control A/c Dr To Cost Ledger Control A/c
Purchases for special job	WIP Control A/c Dr To Cost Ledger Control A/c
Return of materials to vendor	Cost Ledger Control A/c Dr To Stores Ledger Control A/c
Materials issued to production	WIP Control A/c Dr To Stores Ledger Control A/c
Materials issued for maintenance	FOH/AOH/SOH Control A/c Dr To Stores Ledger Control A/c
Material returned from shop to stores	Stores Ledger Control A/c Dr To WIP Control A/c
Normal loss of raw material	FOH Control A/c Dr To Stores Ledger Control A/c
Abnormal loss of raw material	Costing P& L A/c Dr To Stores Ledger Control A/c
<u>Entries relating to direct wages</u>	
Payment of wages	Wages control A/c Dr To Cost Ledger Control A/c
Analysis of wages into direct and indirect wages	WIP Control A/c Dr (Direct) FOH Control A/c Dr (Indirect) To Wages Control A/c
Abnormal idle time	Costing P& L A/c Dr To Wages Control A/c
<u>Entries relating to direct expenses</u>	
Incurrence of direct expenses	WIP Control A/c Dr To Cost Ledger Control A/c
<u>Entries relating to overheads</u>	
Incurrence of FOH / AOH / SOH	FOH / AOH / SOH Control A/c Dr To Cost Ledger Control A/c
Recovery of Manufacturing overheads	WIP Control A/c Dr To FOH Control A/c
Recovery of Administration overheads	FG Control A/c Dr To AOH Control A/c

Transaction	Journal Entry
Recovery of Selling Overheads	Cost of Sales A/c Dr To SOH Control A/c
Under recovery of overheads	Costing P&L A/c Dr To FOH/AOH/SOH Control A/c
Over recovery of overheads	FOH / AOH / SOH Control A/c Dr To Costing P & L A/c
Other entries	
Completion of production during the year	FG Control A/C Dr To WIP Control A/c
Recording cost of goods sold	Cost of sales A/c Dr To FG Control A/c
Recording sales	Cost Ledger Control A/c Dr To Sales A/c
Transfer of cost of sales	Costing P & L A/c Dr To Cost of sales A/c
Transfer of sales	Sales A/c Dr To Costing P&L A/c
Recording of Profit for the year	Costing P&L A/c Dr To Cost Ledger Control A/c
Recording of loss for the year	Cost Ledger Control A/c Dr To Costing P&L A/c

Format for reconciliation of profits:

S. No	Item	End book	Start book	Difference	Dr/Cr	Action	Difference
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Explanation to the table:

Column reference	Explanation
1	Self-explanatory
2	Item causing the difference
3	Figure as per Ending book
4	Figure as per Starting book
5	Column 3 - column 4, only sign to be displayed
6	Debit to be denoted with - and Credit to be denoted with +
7	Column (5) * Column (6)
8	(3) - (4). Only amount to be displayed

Note:

- ❖ Reconciliation can be prepared in the statement or account form. In case of Memorandum Reconciliation Account all minus items will be debited and all plus items will be credited

Profit transfer rules in contract costing:

- ❖ When DOC is less than 25 percent = No transfer
- ❖ When DOC is between 25 to 49.99 percent = $\frac{1}{3} \times \text{Notional profit} \times \text{Cash received/work certified}$
- ❖ When DOC is between 50 to 89.99 percent = $\frac{2}{3} \times \text{Notional profit} \times \text{Cash received/work certified}$
- ❖ When DOC is between 90 to 99.99 percent, use one of the following:

- a. $F1 = \text{Estimated profit} * \text{work certified} / \text{contract price}$
- b. $F2 = \text{Estimated profit} * \text{cash received} / \text{contract price}$ (to be used if the problem is silent)
- c. $F3 = \text{Estimated profit} * \text{Cost of work to date} / \text{estimated total cost}$
- d. $F4 = \text{Estimated profit} * \text{cost of work to date} / \text{estimated total cost} * \text{cash received} / \text{work certified}$
- e. $F5 = \text{Notional profit} * \text{work certified} / \text{contract price}$

Format for operating cost sheet:

Particulars	Amount	Cost per cost unit
<u>Fixed costs or standing charges</u>		
Depreciation	XXX	
Tax	XXX	
Insurance	XXX	
Stationery	XXX	
Manager's salary	XXX	
Driver's salary	XXX	
Conductor's salary	XXX	
Total fixed costs	XXX	XXX
<u>Variable costs or running charges</u>		
Diesel and Oil	XXX	
Total Variable costs	XXX	XXX
<u>Semi-variable costs or maintenance charges</u>		
Garage rent		
Repairs		
Total semi-variable costs	XXX	XXX
Total costs	XXX	XXX

Process costing:

1. Input-output statement format:

Details	Units
Opening Stock	XXX
Add: Input/transfer from previous process	XXX
Total Input	XXX
Less: Closing stock	(XXX)
Processed Production	XXX
Less: Normal loss	(XXX)
Expected output (A)	XXX
Actual output (B)	XXX
Abnormal (loss) / gain (B-A)	XXX

2. Normal loss is unavoidable loss and it is computed either as a percentage of
 - a. Input
 - b. Total input
 - c. Processed production
3. If the problem is silent then the normal loss is computed as a percentage of input

4. Process a/c format:

Particulars	Units	Amount	Particulars	Units	Amount
To opening stock	XXX	XXX	By Normal loss	XXX	XXX
To transfer from	XXX	XXX	By abnormal loss	XXX	XXX

previous process					
To material	-	XXX	By transfer to next process	XXX	XXX
To Direct labour	-	XXX	By Closing stock	XXX	XXX
To overheads	-	XXX			
To abnormal gain	XXX	XXX			
		XXX			XXX

5. Each line in the process account is ascertained independently using the applicable valuation rule:

- Normal loss – Realizable value
- Abnormal loss – cost price
- Closing stock – cost price
- Abnormal gain – cost price
- Transfer to next process – cost price
- Cost price = (Debit side of process a/c excluding abnormal gain – sale value of normal loss) / (Total input – normal loss)

6. Equivalent units problem

Scenario 1 – FIFO Method – One Material:

Step 1: Prepare Input-Output Statement:

Particulars	Units
Opening WIP	XXX
Add: Input/transfer from previous process	XXX
Total Input	XXX
Less: Closing WIP	(XXX)
Processed Production	XXX
Less: Normal loss	(XXX)
Expected output (A)	XXX
Actual output (B)	XXX
Abnormal loss/gain (B-A)	XXX

Step 2: Statement of units started and completed:

Particulars	Units
Transfer to next process	XXX
Less: Opening WIP	(XXX)
Units started and completed	XXX

Step 3: Statement of equivalent units:

Particulars	Units	DOC	Equivalent units	Remarks
Further work on opening WIP	Step 1	XXX	XXX	100 – Given %
Units started and completed	Step 2	100%	XXX	100%
Normal loss	Step 1	0%	0	0%
Abnormal loss	Step 1	XXX	XXX	Given %
Abnormal gain	(Step 1)	100%	(XXX)	100% with units written in negative
Closing WIP	Step 1	XXX	XXX	Given %
Total	XXX		XXX	

Note:

- ❖ The total of the units column should be equal to total input of Step 1
- ❖ The equivalent units need to be computed for each component of cost namely material, labour and overheads

Step 4: Statement of cost per unit:

Particulars	Material	Labour	Overheads
Cost incurred	XXX	XXX	XXX
Less: Sale value of normal loss	(XXX)		
Net cost incurred	XXX	XXX	XXX
Equivalent units	XXX	XXX	XXX
Cost per equivalent unit	XXX	XXX	XXX

Step 5: Statement of Valuation:

Particulars	Material	Labour	Overheads	Total
Further work on opening WIP				
Units started and completed				
Abnormal loss				
Abnormal gain				
Closing WIP				
Total				

- ❖ Each item is valued by taking units from step 3 and cost per unit from step 4
- ❖ Transfer to next process = Opening WIP + Further work on Opening WIP + Units started and completed

Step 6: Prepare Process Account in the normal manner**Scenario 2 – Average Cost Method – One Material:**

Following are the changes required in average cost method:

- ❖ Step 1 – No change
- ❖ Step 2 – Not required
- ❖ Step 3 – Opening WIP and units started and completed is replaced with transfer to next process. DOC to be taken up is 100%
- ❖ Step 4 – Opening WIP is considered for calculating the cost per unit and the format for the same is provided as under:

Particulars	Material	Labour	Overheads
Opening WIP	XXX	XXX	XXX
Cost incurred	XXX	XXX	XXX
Less: Sale value of normal loss	(XXX)		
Net cost incurred	XXX	XXX	XXX
Equivalent units	XXX	XXX	XXX
Cost per equivalent unit	XXX	XXX	XXX

- ❖ Step 5 – No change
- ❖ Step 6 – No change

Scenario 3 – FIFO Method – Two Materials:

- ❖ Two materials refer to a situation where there is a transfer of material from previous process and addition of material in the current process
- ❖ Material received from previous process is called as material A and material added in the current process is called as material B

Following changes are required while evaluating two materials problem:

Step 1	No Change
Step 2	No change
Step 3	✓ Material column is split as Material A and Material B ✓ DOC of Material B is taken as per the DOC given in the question ✓ DOC of Material A is taken as per pre-determined rule and the same is summarized below ○ Opening WIP = 0% ○ Units started and completed = 100% ○ Normal loss = 0% ○ Abnormal loss and gain = 100% ○ Closing WIP = 100%
Step 4	✓ Material column is split as Material A and Material B ✓ Sale value of normal loss is deducted from Material A
Step 5	No change
Step 6	No change

Scenario 4 - Average Cost Method - Two Materials:

❖ Same set of changes as we moved from FIFO one material to FIFO two material

Accounting treatment of normal and abnormal loss:

Particulars	Normal Loss	Abnormal Loss	Abnormal Gain
Recording of item	Normal loss A/c Dr To Process A/c	Abnormal loss A/c Dr To Process A/c	Process A/c Dr To Abnormal gain
Sale entry	Bank A/c Dr To Normal loss A/c	Bank A/c Dr To Abnormal loss A/c	-
Transfer of Abnormal gain to Normal loss	Abnormal Gain A/c To Normal Loss A/c	-	Abnormal Gain A/c To Normal Loss A/c
Transfer to net gain/loss to costing P&L	-	Costing P&L A/c Dr To Abnormal loss	Abnormal Gain Dr To Costing P&L

Various methods for distribution of joint costs:

Method	Basis of distribution												
Physical units method or average unit cost method	✓ Joint cost is distributed in the ratio of the number of units												
Net realizable value at split off method	✓ Joint cost is distributed on the basis of NRV ✓ NRV is calculated using the below format <table border="1"> <tr> <th>Particulars</th><th>Amount</th></tr> <tr> <td>Sales value after further processing</td><td>XXX</td></tr> <tr> <td>Less: Estimated profit margins</td><td>(XXX)</td></tr> <tr> <td>Less: Selling & distribution costs</td><td>(XXX)</td></tr> <tr> <td>Less: Further processing costs</td><td>(XXX)</td></tr> <tr> <td>NRV</td><td>XXX</td></tr> </table>	Particulars	Amount	Sales value after further processing	XXX	Less: Estimated profit margins	(XXX)	Less: Selling & distribution costs	(XXX)	Less: Further processing costs	(XXX)	NRV	XXX
Particulars	Amount												
Sales value after further processing	XXX												
Less: Estimated profit margins	(XXX)												
Less: Selling & distribution costs	(XXX)												
Less: Further processing costs	(XXX)												
NRV	XXX												
Technical estimates	✓ Certain joint products may consume more of the joint cost resources and hence points need to be given to them ✓ Joint cost is distributed on the basis of units * points												
Market value at the point	✓ Joint cost is distributed on the basis of market value at												

of separation	split-off point
Market value after further processing	✓ Joint cost is distributed on the basis of the market value after further processing
Contribution margin method	✓ Joint cost is split as variable cost and fixed cost ✓ Variable cost is split on the basis of physical units or average cost ✓ Fixed cost is split on the basis of contribution

Methods of apportioning joint costs to by-products:

Net Realizable Value Method	✓ Under this method the NRV of the by-product may be deducted from the total joint cost to arrive at the cost of the main product
Standard cost in technical estimates	✓ By-products are valued at standard costs which are determined on the basis of past costs or making some technical estimates
Comparative price	✓ Value of the by-product is ascertained with reference to the price of a similar or an alternative material
Re-use basis	✓ By-products can be reprocessed in the same process as part of the input of the process. Hence in that case the by-product cost should be same as that of the materials introduced in the process

Treatment of by-product cost in cost accounting:

When they are of small value	✓ Sale value of the by-products can be credited to costing profit and loss account and be treated as miscellaneous income or additional revenue ✓ Sale value can also be shown as deduction from the total cost
When the by-products are of considerable total value	✓ In this case the joint products are to be treated as joint products
Where they require further processing	✓ In this case NRV of the by-product at the split off point is determined. If the NRV is small then it is treated as per point (a) and if NRV is considerable then the same is treated as per point (b)

Introduction theory:

1. Standard costing system reconciles budgeted profit and actual profit
2. The difference between the two profits is called as profit variance and hence this chapter is also called as variance analysis
3. The profit variance is analyzed as:
 - a. Sales Variances
 - b. Cost variances
 - i. Material cost variances
 - ii. Labour cost variances
 - iii. Overhead cost variances
 1. Variable overhead variances
 2. Fixed Overhead Variances

If a variance increases actual profit it is called "favorable" (F) and if it decreases actual profits it is called "adverse" (A)

Understanding different costs:

1. Budgeted cost refers to the cost to be incurred for the budgeted output

2. Standard cost refers to the allowable cost for the actual output. In short standard cost is nothing but budgeted cost flexed to actual output.
3. Actual cost refers to the cost incurred by the company in producing the output
4. Cost variance is the difference between standard cost and actual cost and not the budgeted and actual cost

Fill the following:

Budgeted output = 20000 units Standard cost p.u = 20 Actual output = 12000 units and Actual cost = 2,88,000

1. Budgeted cost =
2. Actual cost =
3. Standard cost =
4. Cost variance =

Material Variances:

1. In order to compute the material variances we require the following information
 - a. Standard Quantity - This is the budgeted quantity flexed for actual output
 - b. Revised standard quantity - This is the total of the actual quantity apportioned in the standard mix. This is applicable only when there is more than one material
 - c. Actual quantity - Actual quantity used and this is normally directly given in the problem
 - d. Standard price - This is the budgeted price to be paid for procuring the material
 - e. Actual price - This refers to the actual price paid for procuring the raw materials
2. The objective of variance analysis is to fix responsibility and take corrective action wherever required. They are attention seekers rather than the problem solvers
3. Material variances compute the difference between the standard material cost and the actual material cost and fix the responsibility for the variances. The variance can either occur on account of quantity or price variances

Computation table for Material Variances calculation:

SP * SQ	SP * RSQ	SP * AQ	AP * AQ
Standard material cost			Actual Material cost

Note: In case there is only one material SP* RSQ is not to be computed as there cannot be mix variance and the variance computed are only cost, price and usage variance

Types of problems under material variances:

- Single material
- Multiple material

Labour Variances:

1. In order to compute the labour variances we require the following information
 - a. Standard Hours - This is the budgeted hours flexed for actual output
 - b. Revised standard hours - This is the total of the actual hours worked (**not actual hours paid**) apportioned in the standard mix. This is applicable only when there is more than one grade of labour
 - c. Actual hours worked - This refers to the number of hours actually worked.
AHW = Actual hours paid - Idle time

- d. Actual Hours paid – This refers to the number of hours for which the company is paying. Actual hours worked and actual hours paid are different only when there is idle time because idle time refer to hours paid but not worked
 - e. Standard rate – This is the budgeted rate to be paid to the labour
 - f. Actual rate – This refers to the actual rate paid for using the labour
2. Labour variances compute the difference between the standard labour cost and the actual labour cost and fix the responsibility for the variances. The variance can either occur on account of efficiency or rate variances

Computation table for labour Variances:

SR * SH	SR * RSH	SR * AHW	SR * AHP	AR * AHP
Standard labour cost				Actual labour cost

Types of problems under labour variances:

- Single labour without idle time (Column 2 & Column 4 are not applicable)
- Single labour with idle time (Column 2 is not applicable)
- Multiple labour without idle time (Column 4 is not applicable)
- Multiple labour with idle time (All columns are applicable)

Variable overhead Variances:

1. In order to compute the Variable OH variances we require the following information
 - a. Standard Hours – This is the budgeted hours flexed for actual output
 - b. Actual Hours– This refers to the number of hours actually worked. It does not include idle time as it is assumed that the company does not incur variable overheads during idle time
 - c. Standard rate per hour – This is the budgeted rate to be incurred every hour and is calculated by dividing the budgeted hours from budgeted variable overheads. {SR. per hour = Budgeted VOH / BH}
 - d. Actual rate per hour – This refers to the actual rate incurred on variable overheads
2. VOH variances compute the difference between the standard VOH cost and the actual VOH cost and fix the responsibility for the variances. The variance can either occur on account of efficiency or rate variances

Computation table for VOH Variances:

SR * SH	SR * AH	AR * AH
Standard VOH cost		Actual VOH Cost

Conversion factor when information on output is given but hours not directly available:

- $SR/\text{per hour} * SH = SR/\text{per unit} * AO$
- $SR/\text{per hour} * AH = SR/\text{per unit} * SO$

Note:

- $SR/\text{per unit} = \text{Budgeted VOH} / \text{Budgeted units}$
- **Logic behind conversion:** The standard hours are always calculated with the help of the actual output and hence they standard hours are equated to actual output.

Fixed Overhead variances:

1. In order to compute the Fixed OH variances we require the following information

- Actual output or standard hours
- Actual Hours or standard output
- Standard rate per hour – This is the budgeted rate to be incurred every hour and is calculated by dividing the budgeted hours from budgeted variable overheads. {SR. per hour = Budgeted FOH / BH}
- Actual rate per hour – This refers to the actual rate incurred on fixed overheads
- Possible FOH = BFOH * AD/BD

Computation table for VOH Variances:

AO * SR	AFOH	BFOH	AH * SR	PFOH
FOH absorbed	FOH incurred			

FOH ratios:

- Volume or activity ratio = Standard hours / Budgeted hours * 100
- Efficiency ratio = Standard hours / actual hours * 100
- Capacity ratio = Actual hours / Possible hours * 100
- Calendar ratio = Possible hours / Budgeted hours * 100

Sales Variances:

- In order to compute the sales variances we require the following information
 - Budgeted Quantity – This is the budgeted quantity expected to be sold at the beginning of the period
 - Revised budgeted quantity – This is the total of the actual quantity apportioned in the standard mix. This is applicable only when there is more than one material
 - Actual quantity – Actual quantity sold and this is normally directly given in the problem
 - Budgeted price – This is the price at which the product was expected to be sold at the beginning of the period
 - Actual price – This refers to the price at which the products are actually sold.

Computation table for Sales Variances calculation:

BP * BQ	BP * RBQ	BP * AQ	AP * AQ
Budgeted sales			Actual sales

Note: In case there is only one material BP* RBQ is not to be computed as there cannot be mix variance and the variance computed are only total sales, price and volume variance

Margin approach:

The above indicated method is called as total approach which finds out the impact on the topline and margin approach is used to find the impact on the bottomline. Here BP is replaced with BM and AP is replaced with AM and the calculation for BM and AM is provided below:

- BM = SP-SC

AM = AP – SC (not actual cost)

Marginal Cost Statement:

Particulars	Per Unit	Total
Sales	XXX	XXX
Less: Variable Costs	(XXX)	(XXX)
Contribution	XXX	XXX

Less: Fixed Costs		(XXX)
Profit		XXX

Note:

1. The profit of the company does not vary with the change in sales on account of fixed costs. Hence therefore change in contribution = change in sales.
2. The cost does not vary according to volume because of existence of fixed costs. Hence change in total cost = change in variable cost

Important formulae:

1. $PV \text{ Ratio} = \frac{\text{Contribution}}{\text{Sales}}$ (or) $\frac{\text{Fixed cost}}{\text{Breakeven sales}}$ (or) $\frac{\text{Profit}}{\text{Margin of safety}}$ PVR measures the extent of change in contribution/profit on account of change in sales. Net profit ratio keeps on changing for different sale amounts whereas PVR is constant.
2. $BEP = \frac{\text{Fixed cost}}{\text{Contribution per unit}}$ (or) $\frac{\text{Fixed cost}}{\text{Profit Volume Ratio}}$ (or) $BEP \text{ (in units)} * SP$ BEP refers to the sales level at which the company earns no profit and no loss. This can be either expressed in units or rupees. If expressed in units it is called BEP and if expressed in rupees it is called Break even sales. Moreover at BEP, contribution = fixed cost and sales = total cost
3. $MOS \text{ (units)} = \text{Actual units} - BEP$ (or) $\frac{\text{Profit}}{\text{Contribution per unit}}$
4. $MOS \text{ (Rs.)} = MOS \text{ (units)} * SP$ (or) $\text{Actual sales} - \text{Breakeven sales}$ (or) $\frac{\text{Profit}}{PV \text{ Ratio}}$ MOS is the sales over and above the breakeven sales. It is the extent of allowable drop in sales before the company starts incurring losses
5. $\text{Sales to earn desired profit} = \frac{\text{Target Profit} + \text{Total fixed cost}}{PVR}$
6. $\text{Profit at sales level} = (\text{Sales} * PVR) - \text{Total fixed cost}$

Profitability statement under absorption and marginal costing:**Income statement under absorption costing:**

Particulars	Calculation	Amount
Variable manufacturing costs	Units produced * Cost per unit	XXX
Fixed manufacturing costs (absorbed)	Units produced * OAR	XXX
Cost of production		XXX
Add: Opening FG	Units * Cost per unit	XXX
Less: Closing FG	Units * Cost per unit	(XXX)
Cost of goods sold		XXX
Variable non-manufacturing costs	Units sold * Cost per unit	XXX
Fixed non-manufacturing costs		XXX
Cost of sales		XXX
Add/Less: Under/over absorbed overheads		XXX
Revised cost of sales		XXX
Profit (Balancing figure)		XXX
Sales		XXX

Income statement under marginal costing:

Particulars	Calculation	Amount
-------------	-------------	--------

Sales	Units sold * Selling Price	XXX
Less: Variable costs	Note 1	(XXX)
Contribution		XXX
Less: Fixed costs	Fixed manufacturing + fixed non-manufacturing costs	XXX
Profit		XXX

Working Note 1: Calculation of Variable costs:

Particulars	Calculation	Amount
Variable manufacturing costs	Units produced * Cost per unit	XXX
Add: Opening FG	Units * Cost per unit	XXX
Less: Closing FG	Units * Cost per unit	(XXX)
Variable cost of goods sold		XXX
Add: Variable non-manufacturing costs	Units sold * Cost per unit	XXX
Total costs		XXX

Budgets and Budgetary Control:**Functional Budgets:****Production Budget:**

Particulars	Units
Sales of FG	XXX
Add: Closing Stock of FG	XXX
Less: Opening stock of FG	(XXX)
Production	XXX
Cost per unit	XXX
Total production cost	XXX

RM Consumption budget:

Particulars	Units
Desired production	XXX
Number of RM required per unit	XXX
RM consumed (Production * Input/Output)	XXX

RM Purchase budget:

Particulars	Units
RM Consumed	XXX
Add: Closing Stock of RM	XXX
Less: Opening stock of RM	(XXX)
RM to be purchased	XXX
Purchase price	XXX
Value of purchases	XXX

Manpower budget:

Particulars	Units
Desired production	XXX
Number of hours per unit	XXX
Total hours required	XXX
Normal working hours per employee	XXX
Number of employees	XXX
Total labour cost	XXX

Time value of money:

Present value = Future value * Present value factor

$\text{Future value} = \text{Present value} \times \text{Future value factor}$
$\text{Present value of annuity} = \text{Annuity amount} \times \text{Present value annuity factor}$
$\text{Future value of annuity} = \text{Annuity amount} \times \text{Future value annuity factor}$
$\text{Present value of Perpetuity} = \frac{\text{Perpetuity amount}}{\text{TVM}}$
$\text{Present value of Growing Perpetuity} = \frac{\text{Perpetuity amount}}{\text{TVM} - \text{Growth rate}}$

Liquidity ratios - Short term solvency:

	Ratio	Formula	Numerator	Denominator
1	Current Ratio	$\frac{\text{Current Assets}}{\text{Current Liabilities}}$	Inventories / stocks (+) Debtors & B/R (+) Cash & Bank (+) Receivables / Accruals (+) Short term loans (Dr) (+) Marketable investment / short term securities	Sundry creditors (for goods) (+) Outstanding expenses (+) Short term loans and advances (Cr) (+) Bank overdraft/cash credit (+) Provision for taxation (+) Proposed dividend (+) Unclaimed dividend
2	Quick ratio / liquid ratio / acid test ratio	$\frac{\text{Quick assets}}{\text{Current liabilities}}$	Current assets (-) Inventories	As above
3	Cash ratio/absolute liquidity ratio	$\frac{(\text{Cash} + \text{Marketable securities})}{\text{Current liabilities}}$	Cash in hand (+) Cash at Bank (+) Marketable securities / short term investments	As above
4	Basic Defense Interval Measure (in days)	$\frac{(\text{Cash} + \text{Marketable securities})}{\text{Daily operating expenses}}$	As above	$\frac{\text{Cost of goods sold} + \text{Selling, admin and other general expenses} - \text{Depreciation and non-cash expenditure}}{\text{No of days in a year}}$
5	Net working capital ratio	$\text{Current assets} - \text{Current liabilities (excluding short term bank borrowing)}$		

CAPITAL STRUCTURE RATIOS - INDICATOR OF LONG TERM SOLVENCY

For the capital structure ratios, the following terms are used –

- a) Long term debt = Long term borrowed funds = Debentures + Long term loans from financial institutions

- b) Equity = Owner's funds = Equity capital + Preference capital + Reserves & Surplus Less Accumulated losses
- c) Equity shareholders' funds = Equity less preference share capital (or) Equity capital + Reserves & surplus less accumulated losses
- d) Total funds / capital employed = Long term debt + Equity = (a) + (b)
 This is called liability route computation
 = Fixed assets + Net working capital This is called asset route computation
- e) Total debt = Long term debt + Short term debt

	Ratio	Formula	Numerator	Denominator
1	Debt ratio	$\frac{\text{Total Debt}}{\text{Total debt} + \text{Equity}}$	See (e) above	See (e) above + See (b) above
2	Equity ratio	$\frac{\text{Shareholders Equity}}{\text{Capital employed}}$	See (b) above	See (d) above
3	Debt to Equity ratio	$\frac{\text{Total outside liabilities}}{\text{Shareholders' equity}}$	Total liabilities - shareholders' equity	See (b) above
		$\frac{\text{Total debt}}{\text{Shareholders' equity}}$	See (e) above	See (b) above
		$\frac{\text{Long term debt}}{\text{Shareholders' equity}}$	See (a) above	See (b) above
4	Debt to total assets ratio	$\frac{\text{Total outside liabilities}}{\text{Total assets}}$	Total liabilities - shareholders' equity	All assets - fictitious assets
		$\frac{\text{Total debt}}{\text{Total assets}}$	See (e) above	All assets - fictitious assets
5	Capital gearing ratio	$\frac{\text{Fixed charge bearing capital}}{\text{Equity shareholders' funds}}$	Preference share capital + Total debt	See (c) above
6	Proprietary ratio	$\frac{\text{Proprietary funds}}{\text{Total assets}}$	See (b) above	All assets - fictitious assets

COVERAGE RATIOS - ABILITY TO SERVE FIXED LIABILITIES

	Ratio	Formula	Numerator	Denominator
1	Debt service coverage ratio	$\frac{\text{Earnings for debt service}}{\text{Interest} + \text{Installments}}$	Profit after tax (+) Interest on debt funds (+) Non-cash operating expenses (e.g. depreciation) (+) Non-operating adjustments (e.g. loss on	Interest on debt (+) Installment of debt

			sale of fixed assets)	
2	Interest coverage ratio	$\frac{\text{EBIT}}{\text{Interest}}$	Earnings before interest and taxes	Interest on debt
3	Preference dividend coverage ratio	$\frac{\text{EAT}}{\text{Preference dividend}}$	Earnings after tax	Preference dividend
4	Equity dividend coverage ratio	$\frac{\text{EAES}}{\text{Equity dividend}}$	Earnings available to equity shareholders	Equity dividend
5	Fixed charges coverage ratio	$\frac{\text{EBIT} + \text{Depreciation}}{\text{Interest} + (\text{Principal} / (1 - \text{tax rate}))}$	EBIT + Depreciation	Interest + (Principal divided by 1- tax rate)

ACTIVITY RATIO / EFFICIENCY RATIO / PERFORMANCE RATIO / TURNOVER RATIO

	Ratio	Formula	Numerator	Denominator
1	Total assets turnover ratio	$\frac{\text{Sales} / \text{cost of goods sold}}{\text{Total assets}}$	Sales / COGS	Total assets
2	Fixed assets turnover ratio	$\frac{\text{Sales} / \text{cost of goods sold}}{\text{Fixed assets}}$	Sales/ COGS	Fixed assets net of accumulated depreciation
3	Capital/net asset turnover ratio	$\frac{\text{Sales/ cost of goods sold}}{\text{Capital employed}}$	Sales/COGS	Net fixed assets plus net current assets (current assets – current liabilities)
4	Current assets turnover ratio	$\frac{\text{Sales/ cost of goods sold}}{\text{Current assets}}$	Sales/COGS	Current assets
5	Working capital turnover ratio	$\frac{\text{Sales/ cost of goods sold}}{\text{Working capital}}$	Sales/COGS	Current assets (-) current liabilities
6	Inventory / stock turnover ratio	$\frac{\text{Cost of goods sold} / \text{sales}}{\text{Average inventory}}$	COGS = Sales – Gross Profit	$\frac{\text{Opening stock} + \text{Closing stock}}{2}$
7	Raw material turnover ratio	$\frac{\text{Raw material consumed}}{\text{Average RM stock}}$	Opening stock + Purchases – Closing stock	$\frac{\text{Opening stock} + \text{Closing stock}}{2}$
8	Debtors turnover ratio	$\frac{\text{Credit sales}}{\text{Average}}$	Credit sales net of returns	$\frac{\text{Opening receivables} + \text{Closing receivables}}{2}$

	Ratio	Formula	Numerator	Denominator
		accounts receivable		2
9	Payables turnover ratio	$\frac{\text{Credit purchases}}{\text{Average accounts payables}}$	Credit purchases net of returns	$\frac{\text{Opening payables} + \text{Closing payables}}{2}$

Note: T/O ratios can also be expressed in terms of days as $365 / \text{T/O ratio}$. e.g. average collection period = $365 / \text{Debtors turnover ratio}$

PROFITABILITY RATIOS RELATED TO SALES

	Ratio	Formula	Numerator	Denominator
1	Gross profit ratio	$\frac{\text{Gross profit}}{\text{Sales}}$	Gross profit as per trading account	Sales net of returns
2	Net profit ratio	$\frac{\text{Net profit}}{\text{Sales}}$	Net profit as per P&L A/c	Sales net of returns
3	Pre-tax profit ratio	$\frac{\text{Earnings before tax}}{\text{Sales}}$	Earnings before tax	Sales net of returns
4	Operating profit ratio	$\frac{\text{Operating profit (or) EBIT}}{\text{Sales}}$	Sales - cost of sales (or) Net Profit (+) Non-operating expenses (-) Non-operating incomes	Sales net of returns
5	COGS ratio	$\frac{\text{Cost of goods sold}}{\text{Sales}}$	Cost of goods sold	Sales net of returns
6	Operating expenses ratio	$\frac{\text{Operating expenses}}{\text{Sales}}$	Admin expense + Selling & Distribution expense	Sales net of returns
7	Operating ratio	$\frac{\text{COGS} + \text{Operating expenses}}{\text{Sales}}$	COGS + Operating expenses	Sales net of returns
8	Financial expense ratio	$\frac{\text{Financial expenses}}{\text{Sales}}$	Interest expenses	Sales net of returns

PROFITABILITY RELATED TO OVERALL RETURN ON ASSETS/INVESTMENTS

	Ratio	Formula	Numerator	Denominator
1	Return on investment (ROI) or Return on capital employed (ROCE)	$\frac{\text{EBIT}}{\text{Capital employed}}$	Earnings after tax (+) Income Tax (+) Interest on debt funds (+) Non-operating adjustments	Fixed assets + Net current assets (or) Equity + Long term debt
2	Return on Equity (ROE) or Return on networth	$\frac{\text{EAES}}{\text{Equity}}$	Earnings after tax (-) preference	Equity capital + Reserves & surplus -

	(RONW)	shareholders' funds	dividend	fictitious assets
3	Return on assets (ROA)	$\frac{\text{Net profit after taxes}}{\text{Average total assets}}$	Earnings after tax	Average of opening total assets & closing total assets

PROFITABILITY RATIOS FROM OWNERS POINT OF VIEW

	Ratio	Formula	Numerator	Denominator
1	Earnings per share (EPS)	$\frac{\text{EAES}}{\text{No of equity shares}}$	Earnings after tax (-) preference dividend	No of equity shares
2	Dividend per share (DPS)	$\frac{\text{Total equity dividend}}{\text{No of equity shares}}$	Total dividend	No of equity shares
3	Dividend payout ratio	$\frac{\text{DPS}}{\text{EPS}}$	DPS	EPS

PROFITABILITY RATIOS RELATED TO MARKET / VALUATION / INVESTORS

	Ratio	Formula	Numerator	Denominator
1	Price Earnings ratio	$\frac{\text{MPS}}{\text{EPS}}$	Market price per share	Earnings per share
2	Dividend yield	$\frac{\text{DPS}}{\text{MPS}}$	Dividend per share	Market price per share
3	Earnings yield	$\frac{\text{EPS}}{\text{MPS}}$	Earnings per share	Market price per share
4	Market value to book value	$\frac{\text{Market price per share}}{\text{Book value per share}}$	Market price per share	Networth/ No of equity shares

Explain the computation of Return on Equity (ROE) using the Dupont model?

- Under Dupont model, Return on Equity (ROE) = Net Profit Margin * Asset Turnover * Equity multiplier
- Net profit margin = Net profit / Total turnover; Asset turnover = Total turnover / total assets; Equity multiplier = Total assets / Equity shareholders' funds

Example:

Net Profit = 500; Total turnover = 5000; Total assets = 1000; Equity shareholders' funds = 800. ROE as per Dupont model would be calculated as under:

Net Profit Margin = Net Profit / Total turnover = 500/5000 = 10%

Asset turnover = Total turnover / total assets = 5000/1000 = 5 times

Equity multiplier = Total assets / Equity shareholders' funds = 1000/800 = 1.25 times

Hence, ROE = 10% * 5 * 1.25 = 62.5 percent

Analysis:

- ROE of 62.5 percent is based on 10 percent net profit, 5 times asset turnover and equity multiplier of 1.25

- If the equity multiplier were excluded (to determine how much the company would earn if it were completely debt free), the ROE would be $0.10 \times 5 = 50$ percent. This means that the balance 12.5 percent is attributable to the debt employed in the business

Financing decisions:

1. Cost of irredeemable debt = Interest after tax / Current market price																														
2. Cost of redeemable debt = (Interest per annum + Average other costs)/ Average funds employed Where Average other costs = (Redemption amount - Issue amount) / Life Where Average funds employed = (Redemption amount + Issue amount) / 2																														
3. The value of debt is the PV of cash flows associated with debt discounted at the cost of debt																														
4. Cost of equity: • No growth in dividends = $D1 / (P0-F)$ • Constant growth in dividends = $D1/(P0-F) + \text{Growth rate}$ • Stepped up growth model - Calculate future dividends and market price at the end of stage 2 and then its present value • Capital asset pricing model = Risk free rate of return + beta (Market return - Risk free rate)																														
5. Cost of retained earnings: The cost of retained earnings is normally the same as the cost of equity. However in case of floatation costs the formula changes wherein “P0-F” is replaced with “P0” Cost of retained earnings in case of availability of individual taxes = $Ke * (1 - \text{Tax rate}) * (1 - FC)$																														
6. Cost of preference share is the same as cost of debt																														
7. The optimum money mix can be selected based on EPS, Market value of shares or market value of firm.																														
EBIT/EPS Analysis format:																														
<table><tr><th>Details</th><th>Amount</th></tr><tr><td>EBIT</td><td>XXX</td></tr><tr><td>Less: Interest</td><td>(XXX)</td></tr><tr><td>PBT</td><td>XXX</td></tr><tr><td>Less: Taxes</td><td>(XXX)</td></tr><tr><td>PAT</td><td>XXX</td></tr><tr><td>Less: Preference dividend</td><td>(XXX)</td></tr><tr><td>EAES (A)</td><td>XXX</td></tr><tr><td>No of Shares (B)</td><td>XXX</td></tr><tr><td>EPS (A/B)</td><td>XXX</td></tr><tr><td>PE ratio</td><td>XXX</td></tr><tr><td>MPS (EPS * PE)</td><td>XXX</td></tr><tr><td>Market value of shares (MPS * No of shares)</td><td>XXX</td></tr><tr><td>Market value of debt</td><td>XXX</td></tr><tr><td>Market value of firm</td><td>XXX</td></tr></table>	Details	Amount	EBIT	XXX	Less: Interest	(XXX)	PBT	XXX	Less: Taxes	(XXX)	PAT	XXX	Less: Preference dividend	(XXX)	EAES (A)	XXX	No of Shares (B)	XXX	EPS (A/B)	XXX	PE ratio	XXX	MPS (EPS * PE)	XXX	Market value of shares (MPS * No of shares)	XXX	Market value of debt	XXX	Market value of firm	XXX
Details	Amount																													
EBIT	XXX																													
Less: Interest	(XXX)																													
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No of Shares (B)	XXX																													
EPS (A/B)	XXX																													
PE ratio	XXX																													
MPS (EPS * PE)	XXX																													
Market value of shares (MPS * No of shares)	XXX																													
Market value of debt	XXX																													
Market value of firm	XXX																													
8. The term indifference point refers to the level of EBIT wherein two different financing plans provide the same EPS																														
9. Net income theory suggests that cost of capital changes with the change in the debt component and therefore the capital structure influences the value of firm.																														
10. Net Operating income suggests that cost of capital is constant at any capital structure and hence therefore the value of firm is constant																														
11. Format for calculation of value of firm:																														

	Details	Amount
	EBIT	XXX
	Less: Interest	(XXX)
	EBT	XXX
	<u>Costs:</u>	
	Kd	Interest/ Value of debt
	Ke	EBT / Value of equity
	Ko	EBIT / Value of firm
	<u>Value:</u>	
	Value of debt	Interest / Kd
	Value of equity	EBT / Ke
	Value of firm	EBIT / Ko

12. Value of firm under MM approach:

- Absence of personal taxes : Value of levered firm = Value of unlevered firm + Corporate tax * Value of debt
- Existence of personal taxes: Value of levered firm = Value of unlevered firm + $(1 - \{ (1-CT) * (1 - \text{common stock tax rate}) \} / (1 - \text{Debt tax rate}) \}$

13. Operating leverage = Contribution / EBIT
This measures percentage change in EBIT for every percentage change in sales

14. Financial leverage = $\text{EBIT} / \text{EBT} - (\text{Preference dividend} / (1-t))$
This measures percentage change in EPS for every % change in EBIT

15. Combined leverage = Operating leverage * Financial leverage

Investment decisions:

Technique	Explanation	Formula
Payback	Payback refer to the time period in which initial investment in the project will be recovered	Base year + (Unrecovered cash flow of base year / Cash flow of nest year) Note: Base year refer to the last year in which cumulative cash flow is negative
ARR	ARR refer to the ratio of average PAT over the initial or average investment	ARR = Average PAT / (Initial or average investment) Initial investment = Initial outflow Average investment = Average of initial outflow and salvage value
Discounted payback	Discounted payback refer to the time period in which initial investment in the project will be recovered considering time value of money	Base year + (Unrecovered discounted cash flow of base year / Discounted cash flow of nest year) Note: Base year refer to the last year in which cumulative cash flow is negative
NPV	NPV refer to the difference between the PV of cash inflows and PV of cash outflows	PV of cash inflows - PV of cash outflows
IRR	IRR refer to the rate of return at which NPV of the project is zero	$L1 + \frac{(\text{NPV at } L1) * (L2-L1)}{(\text{NPV at } L1 - \text{NPV at } L2)}$

		L1 = Lower rate with + NPV L2 = Higher rate with - NPV
Profitability index or Benefit cost ratio	This measure the ratio of benefits (PV of cash inflows) to costs (PV of cash outflows)	$\frac{\text{PV of cash inflows}}{\text{PV of cash outflows}}$

Consolidated format for calculation of all techniques:

Year	Cash Flow	Cumulative cash flow	PVF @ 10%	DCF	CDCF	Depreciation	PAT
0	(1,00,000)						
1	40,000						
2	60,000						
3	40,000						
4	50,000						
	Total						

Steps in capital budgeting:**Step 1: Initial outflow**

Particulars	Amount
Capital expenditure	(XXX)
Working capital	(XXX)
Total outflow	(XXX)

Step 2: In-between flows:

Particulars	Amount
Sales	XXX
Less: All costs other than depreciation	(XXX)
Profit before depreciation and tax (PBDT)	XXX
Less: Depreciation	(XXX)
Profit before tax (PBT)	XXX
Less: Tax	(XXX)
Profit after tax (PAT)	XXX
Add: Depreciation	XXX
Cash flow after tax (CFAT)	XXX
Less: Purchase of additional machine	(XXX)
Less: Payment for original machine	(XXX)
Add/Less: Increase/decrease in working capital (Note)	XXX
Revised CFAT	XXX

Note:

- ❖ Increase in working capital will be treated as outflow of money as additional money is blocked in working capital
- ❖ Decrease in working capital will be treated as inflow of money as money has been released from working capital

Step3: Terminal flow:

Particulars	Amount
NSV of asset (Note 1)	XXX
Recapture of working capital	XXX
Total terminal flow	XXX

Step 4: Consolidation of cash flows and calculation of NPV:

Year	Cash flow	PVF	DCF
0	Step 1		
1	Step 2		
2	Step 2		
3	Step 2		
4	Step 2		
5	Step 2 + Step 3		
Total			

Note 1: Calculation of NSV

Particulars	Amount
Sale Value	XXX
Less: Book value	(XXX)
Gain / Loss on sale	XXX
Tax Paid / Tax Saved	XXX
Net salvage value (Sale value + Tax saved – Tax Paid)	XXX

How to decide on abandonment of an asset?**Step 1: Initial outflow**

Particulars	Amount
NSV of existing asset at year 0	(XXX)
Working capital	(XXX)
Total outflow	(XXX)

Step 2: In-between flows – No change**Step3: Terminal flow:**

Particulars	Amount
NSV of existing asset at the end of life	XXX
Recapture of working capital	XXX
Total terminal flow	XXX

Step 4: Consolidation of cash flows and calculation of NPV – No change

Conclusion: If the NPV of the project is positive then we should continue with the asset. However if the same is negative then we have to abandon the asset

How to decide on replacement?**Method 1 : Total Approach:**

- ❖ Step 1: Compute NPV of continuation option
- ❖ Step 2: Compute NPV of purchase option
- ❖ Step 3: Decide by comparing step 1 & step 2
 - If step 1 is greater than we should continue with existing asset
 - If step 2 is greater than we should replace the asset

Method 2: Incremental approach:

- ❖ Step 1: Compute incremental initial outflow
- ❖ Step 2: Compute incremental in between cash flows
- ❖ Step 3: Compute incremental terminal flow
- ❖ Step 4: If the NPV is positive then we should go ahead with replacement.

Special issues in capital budgeting:**Issue No.1: NPV versus IRR conflict**

- ❖ In case of a single project that involves accept/reject decision, NPV and IRR will give the same decision.
- ❖ However whenever a choice is to be made between two mutually exclusive projects, IRR and NPV may give opposite ranking
- ❖ NPV assumes that cash flows are reinvested at cost of capital whereas IRR assumes that cash flows are reinvested at IRR.
- ❖ NPV versus IRR conflict arise due to
 - Life disparity
 - Cash flow disparity

Life Disparity:

- ❖ If the life of the two alternatives being analysed is not same, then decision cannot be done on the basis of NPV / Present value of outflow
- ❖ We need to calculate EAB/EAC to make the decision on selection of project
 - $EAB = NPV / PVAF(r, \text{life})$
 - $EAC = \text{Present value of outflow} / PVAF(r, \text{life})$

Computation of cost of factoring:**Step 1: Compute the amount lent by factor:**

Particulars	Calculation	Amount
Credit Sales		XXX
Credit Period		XXX
Average receivables	Credit sales * credit period / 365	XXX
Less: Reserve	XX % of receivables	(XXX)
Less: Commission	XX % of receivables	(XXX)
Amount eligible to be lent		XXX
Less: Interest	Eligible amount * Interest rate (%) * Credit period / 365	(XXX)
Amount actually lent		XXX

Step 2: Calculation of effective cost of factoring:

Particulars	Calculation	Amount
Costs of factoring:		
Commission	Commission expense as per WN 1 * 365 / Credit period	XXX
Interest	Interest expense as per WN 1 * 365 / Credit period	XXX
Total costs (A)		XXX
Benefits of factoring:		
Savings in administration charges		XXX
Savings in bad debt		XXX
Total Savings (B)		XXX
Net Cost of factoring (A-B)		XXX
Amount lent by factor	WN 1	XXX
Effective cost of factoring	Net cost / Amount actually lent	XXX

IMPORTANT THEORY QUESTIONS**General Rule for theory preparation:**

- ❖ Study Basic Concepts (Costing), Scope and objectives of financial management (financial management) and Types of financing (financial management) fully
- ❖ Read summary section of other chapters

Basic concepts:

1. Difference between cost control and cost reduction
2. What is cost unit? Cost units for various industries
3. What is cost centre and various types of cost centre
4. Objectives of cost accounting
5. What is cost object
6. Classification of costs based on various factors (**all costs are to be understood as question can be asked to explain any type of cost**)
7. What are fixed, variable and semi-variable costs
8. What are controllable and uncontrollable costs
9. What are period and product costs
10. What are explicit and implicit costs
11. Industries and the type of costing used in those industries
12. What are the various techniques of costing
13. Discuss accounting treatment of spoilage and defectives in cost accounting

Material:

14. What is the material procurement procedure in any organization?
15. What is a purchase order?
16. Bin cards and stock control cards
17. What is the material issue procedure in any organization?
18. What is a bill of materials and its advantages to various departments?
19. Difference between bill of material and material requisition note?
20. What is Just in Time Purchases and what are its advantages
21. What is the treatment of shortages in stock taking?
22. What are the various techniques of inventory control
23. Explain ABC analysis?
24. What is Re-order quantity, re-order level, maximum level and minimum level
25. Distinguish between Re-order levels and re-order quantity?
26. How are slow and non-moving items detected and what steps are necessary to reduce to reduce such stocks?
27. Treatment of normal and abnormal loss of materials
28. Accounting treatment of waste, scrap, spoilage and defectives
29. Distinction between spoilage and defectives

Labour:

30. What is idle time? Factors causing normal and abnormal idle time
31. Treatment of idle time in costing?
32. What is overtime and treatment of the same in cost accounting?
33. What is labour turnover and cost associated with labour turnover?
34. Accounting treatment of idle capacity costs

Overheads:

35. Treatment of under and over-absorption of overheads
36. Distinguish cost allocation and cost absorption
37. What is blanket overhead rate
38. Explain the treatment of various items in cost accounting – Study material – page no.4.63 to 4.65 – very important

Non-Integrated accounts:

- 39. What are the advantages of integrated accounting?
- 40. Need for reconciling profits as per cost records and financial records?
- 41. Reasons for disagreement of profits between cost accounting and financial accounting?

Job and batch costing:

- 42. What is job and batch costing? Explain industries where the same is used?
- 43. What is economic batch quantity?

Contract costing:

- 44. Escalation clause
- 45. Cost-plus contracts
- 46. Retention money
- 47. Principles to be followed to recognize profit on incomplete records

Operating costing:

- 48. Meaning of operating costing
- 49. Composite cost unit
- 50. Operating costing versus operation costing

Process & Operating costing:

- 51. Treatment of normal loss, abnormal loss and abnormal gain
- 52. Methods of valuation of work-in-progress
- 53. Inter-process profit

Joint Products & By-products:

- 54. Methods for apportionment of joint costs
- 55. Joint product versus by-product
- 56. Treatment of by-products in cost accounting

Standard costing:

- 57. How standards are fixed
- 58. Calculation of material, labour, overhead and sales variances

Marginal costing:

- 59. Marginal costing versus absorption costing
- 60. Break-even point and Margin of safety
- 61. Break-even chart
- 62. Assumptions of CVP analysis

Budgets and Budgetary control:

- 63. What is budget and budgetary control?
- 64. Fixed versus flexible budget
- 65. Different types of functional budgets
- 66. Budget manual

Scope and objectives of financial management:

- 67. Wealth maximization versus profit maximization
- 68. Role of Chief Financial Officer
- 69. Functions of financial management

Time value of money:

- 70. Relevance of time value of money in financial decisions

Financial analysis and planning:

- 71. Distinguish cash flow and fund flow statement?
- 72. What is debt service coverage ratio?
- 73. Diagrammatically represent DUPONT chart?
- 74. What is the significance of liquidity ratios?
- 75. What is the significant of capital structure/leverage ratios?
- 76. What are activity and profitability ratios?

Financing Decisions:

- 77. What are capital structure theories? Assumptions of capital structure theories and what does each theory conclude?
- 78. What is WACC and WMCC
- 79. Different types of leverages
- 80. Business risk and financial risk
- 81. What is indifference point and financial break-even point
- 82. Principles governing capital structure

Types of financing:

- 83. Various sources of finance
- 84. Bridge financing
- 85. Venture capital financing
- 86. Securitization
- 87. Commercial paper
- 88. Different facilities provided by banks
- 89. Seed capital assistance
- 90. New instruments
- 91. Deep discount bonds and zero coupon bonds
- 92. International financing instruments
- 93. ADR, GDR and IDR

Investment decisions:

- 94. NPV versus IRR conflict
- 95. Different techniques of capital budgeting

Management of working capital:

- 96. What is operating cycle
- 97. What is cash budget
- 98. Differentiate Baumol's and miller-orr cash management model
- 99. Different types of float in cash management
- 100. What are the factors to be taken into consideration while determining the requirement of working capital?
- 101. Liquidity versus profitability issue in management of working capital?
- 102. Factoring
- 103. Factors determining credit policy?
- 104. Three principles for selection of marketable securities

SUMMARY OF ADJUSTMENTS

Qn	Summary of adjustment
Chapter 1: Basic Cost Concepts	
1	❖ Operating costing (Passenger KM/Tonne KM), Process costing (Tonne), Multiple costing (Number), Contract costing (Project)
2	❖ Operating costing (Room days), Batch costing (batches), Process costing (Tonne), Contract costing (Project)
3	❖ Imputed cost, Opportunity cost, Shut down cost and Product cost
4	❖ Tonne, Numbers, Passenger KM/Tonne KM, Kilo Watt hours
Chapter 2: Material	
1	❖ Calculation of inventory levels – No special adjustment ❖ $ROQ = EOQ = \sqrt{2 * \text{Annual demand} * \text{Ordering cost/order/carrying cost per unit per annum}}$ ❖ $ROL = \text{Maximum consumption} * \text{Maximum lead time}$ ❖ $\text{Minimum level} = ROL - (\text{Normal consumption} * \text{Normal lead time})$ ❖ $\text{Maximum level} = ROL + ROQ - (\text{Minimum consumption} * \text{Minimum lead time})$ ❖ $\text{Danger level} = \text{Normal consumption} * \text{Lead time for emergency purchases}$ ❖ Carrying cost per unit is to be calculated as a percentage of purchase price
2	❖ EOQ is computed for the raw material and hence the demand for FG is to be converted into demand of RM ❖ Annual demand of RM = Annual demand of FG * (Input/Output) ❖ Carrying cost per unit is to be computed as a percentage of purchase price and the same is then applied on average inventory to get total carrying cost ❖ $EOQ = \sqrt{2 * \text{Annual demand} * \text{Ordering cost/order/carrying cost per unit per annum}}$ ❖ EOQ Versus Discount: Calculate total inventory cost for both options and select the one which has lower cost. Total inventory cost = Total ordering cost + Total carrying cost + Total material cost ❖ Total ordering cost = No of orders * Ordering cost per order; No of orders = Annual demand of RM / Quantity per order ❖ Total carrying cost = Carrying cost per unit * Average inventory; Average inventory = (Quantity per order/2). Carrying cost per unit is to be taken as a percentage of purchase price and hence the same will be lower when 2 percent discount is offered ❖ Material cost = Annual demand of RM * Purchase Price. We need to consider lower purchase price in the quantity discount model
3	❖ Consumption per day = Annual consumption / 300 working days. This will be considered as maximum, minimum and average consumption per day due to absence of additional information ❖ Re-order period = 10 days. This will be taken as maximum, minimum as well as average lead time due to absence of information ❖ $EOQ = \sqrt{2 * \text{Annual demand} * \text{Ordering cost/order/carrying cost per unit per annum}}$ ❖ $ROL = (\text{Maximum consumption} + \text{Maximum lead time}) + \text{Safety stock}$ ❖ $\text{Maximum level} = ROL + ROQ - (\text{Minimum consumption} * \text{Minimum lead time})$ ❖ $\text{Average level} = (\text{Minimum level} + \text{maximum level})/2$ (or) $\text{Minimum level} + 50\% \text{ of } EOQ$ ❖ Safety stock is buffer stock maintained by the company and the same needs to be added to every inventory level such as maximum level, minimum level, re-order level, average inventory etc. In this question we have added it to ROL and the same gets automatically considered in the other formulae due to higher ROL

Qn	Summary of adjustment
4	❖ Ordering cost per order = Handling cost + Freight cost ❖ Carrying cost per unit = Working capital finance + (Monthly CC * 12) ❖ Annual demand of RM = Annual production * (Input/Output) ❖ $EOQ = \sqrt{2 * \text{Annual demand} * \text{Ordering cost/order/carrying cost per unit per annum}}$ ❖ Time gap between two orders = $360/\text{Number of orders}$ ❖ We need to compute total inventory cost for EOQ option. We will assume purchase price as X under quantity discount model. We need to equate the cost to the one calculated for EOQ option and solve X. Compare X with original purchase price and get the percentage of discount
5	❖ Average lead time is 6 days Hence $(\text{Min lead time} + \text{max lead time})/2 = 6 \text{ days}$ ❖ $(\text{Maximum lead time} - \text{Minimum lead time}) = 4 \text{ days}$ ❖ Solving the above two points we will get minimum lead time = 4 days and maximum lead time = 6 days ❖ Use the formula of ROL and we would get maximum consumption per day ❖ Use the formula of maximum level and we would get minimum consumption
6	❖ Optimum purchase order size - Normal EOQ - we will consider carrying cost as 20 percent of normal purchase price and get the optimum EOQ ❖ Compute tentative EOQ for each of the price level. Tentative EOQ would vary at every level as the carrying per unit will change with change in purchase price ❖ Final order quantity for each class interval will be the one which is closest to tentative EOQ ❖ Compute total inventory cost for each of the order quantity identified above. Identify the level which has the lowest inventory cost ❖ The bank can do only five fund transfers and hence the number of orders cannot exceed five orders. Loss due to bank = (Total cost at five orders) - Minimum possible cost as per part (ii) of the question
7	❖ Similar to question No.2 ❖ At EOQ total ordering cost is equal to total carrying cost. Hence total ordering cost as well as total carrying cost will be Rs.2,000 ❖ Carrying cost per unit is Rs.20 per unit and hence average inventory would be 100 units. This would give the EOQ to be 200 units ❖ Total ordering cost is Rs.2,000 and hence number of orders is 20. Annual demand would therefore be equal to 4,000 units ($EOQ * \text{Number of orders}$) ❖ Part two: Similar to question no.2. Only change is that carrying cost per unit will not change with purchase price
8	❖ $EOQ = \sqrt{2 * \text{Annual demand} * \text{Ordering cost/order/carrying cost per unit per annum}}$ ❖ Carrying cost per unit has to be taken as 10 percent of purchase price ❖ EOQ is to be computed with the help of annual demand and hence the monthly demand is to be multiplied with 12 ❖ Number of orders = $\text{Annual demand}/EOQ$ ❖ Total ordering cost = No of orders * Ordering cost per order ❖ Total carrying cost = Carrying cost per unit * Average inventory; Average inventory = $\text{Quantity per order}/2$ ❖ The company currently has 10,033 packs and we need to find how many days will the stock last. Daily consumption = $(60,000*12)/360$. Number of days stock is held = $\text{Current inventory}/\text{Daily consumption}$. ❖ Timing of next order = Number of days stock is held - Lead time for purchases
9	❖ No special adjustment. Simple problem on inventory levels

Qn	Summary of adjustment
10	❖ FIFO assumes that earliest purchase is sold first and hence closing stock would come from the latest purchase. Hence closing stock of 23,000 kgs would comprise of 22,000 kgs purchased on March 25 and 1,000 kgs purchased on March 18 ❖ Cost of goods sold = Opening stock + Purchases – Closing stock ❖ Profit = Sales – COGS – Salary paid to accountant
11	❖ Ordering cost per order = Rs.35,000; Carrying cost per unit = 1.7676% of purchase price; Purchase price = Rs.900 + 10% Import duty ❖ The company normally receives the material in 12 days and the same has 70 percent probability of occurrence. This would indicate that there is 30 percent risk of going out of stock ❖ There is 90 percent cumulative probability of receiving the material in 14 days and hence we need to have ROL as 14 days consumption to have 10 percent risk of going out of stock. Safety stock would be extra 2 days consumption (14 days consumption – normal 12 days consumption) ❖ There is 95 percent cumulative probability of receiving the material in 15 days and hence we need to have ROL as 15 days consumption to have 5 percent risk of going out of stock. Safety stock would be extra 3 days consumption (15 days consumption – normal 12 days consumption) ❖ Total ordering cost = No of orders * Ordering cost per order; Total carrying cost = Carrying cost per unit * Average inventory; Average inventory = (Quantity per order/2) + Safety stock
12	❖ Calculate annual production of FG: Opening FG + Production – Closing FG = Sales; Closing FG will be taken as zero due to absence of information ❖ Annual RM consumption = Annual production * (Input/Output) ❖ Calculate annual RM purchases: Opening RM + Purchases – Closing RM = RM Consumed; Closing RM will be taken as zero due to absence of information ❖ Compute EOQ with help of annual purchases, ordering cost and carrying cost ❖ ROQ is 200 kg less than EOQ and hence ROQ = EOQ – 200 units ❖ Normal consumption per day is to be computed with the help of annual consumption of RM. Maximum consumption = Normal consumption + 20 kgs; Minimum consumption = Normal consumption – 20 Kgs ❖ Calculate maximum level, minimum level with normal formula ❖ Impact on profitability = Total cost when ROQ is ordered – Total cost when EOQ is ordered. EOQ is the best quantity to order. However here we are ordering 200 units less and hence the total of ordering and carrying cost will be higher and the difference in cost is the impact on profitability
Chapter 3: Labour	
1	❖ Average work force is 1,000 employees (average of opening and closing) ❖ Labour turnover under replacement method is 3 percent and hence the number of replacements is 30 employees. (It is assumed that replacement will impact the number of employees) ❖ Closing work force = Opening work force + New recruitment + Replacement – Separations. This would provide us the number of separations ❖ Labour turnover (separation method) = No of separations/ Average work force ❖ Labour turnover (flux method) = (Separations + Replacement + New recruitment)/ Average work force
2	❖ Standard time for worker A is equal to 44 hours and worker B is equal to 35 hours ❖ Calculate earnings of two workers using the various formulae – no special adjustment
3	❖ Effective rate per hour = Total wages under Rowan Plan / No of actual hours

Qn	Summary of adjustment
	❖ The worker wants to maintain same rate per hour. Let us assume actual time as X and hence his total wages would be 140X as he earned Rs.140 per hour under Rowan Plan. ❖ Use the formula of Halsey and equate the total earnings to 140X to get the desired time to earn same effective rate per hour
4	❖ Labour turnover under separation method is 5% and number of separations is 40. This would give the average work force as 800 employees ❖ Number of replacements = Average work force * 8% ❖ Number of new recruitments can be computed with the help of flux method. Flux method = (No of separations + No of replacements + No of new recruitments) / Average work force ❖ Total new recruitments = No of new recruitment + No of replacements ❖ Assuming opening work force as X. Closing work force = Opening work force + Replacement + New recruitment - Separations. Take average of opening and closing work force and equate the same to 800. We will arrive at the answer of opening work force
5	❖ Overtime is to be calculated for every day considering the conditions imposed by the company. Diet allowance will be paid in case the worker works beyond 8:30 PM ❖ Worker A and C are involved in specific job - It shall be charged to the specific job and is treated as part of cost of job; Worker B allowance can be either treated as cost of production or as a factory OH or to the costing P&L A/c ❖ Underestimation by sales department should be charged to the sales department ❖ Shortfall in production - Treated as factory OH
6	❖ Hourly rate of wages = No of hours * Rate per hour ❖ Piece work basis = No of units * rate per unit. Product A will be at Rs.15/unit, Product B will be at Rs.20 per unit and Product C will be at Rs.30 per unit. A person will get 75% of basic wages in case the wages as per the piece rate is less than 50% of basic wages ❖ Rowan wages = Basic wages + Bonus; Bonus = (Actual time* Time saved * Rate per hour/Standard time)
7	❖ Cost of labour turnover = Rectification cost+ Potential productive hours lost + Settlement cost + Recruitment cost + Training cost ❖ Contribution on potential productive hours lost = No of hours lost * Contribution per hour. Hours lost due to training is also to be included in the hours lost. ❖ Rectification cost = No of defective units * Rectification cost per unit
8	❖ Calculate standard output = No of hours/week * No of weeks * No of workers * No of units per hour ❖ Efficiency = Actual output/Standard output ❖ Find the differential piece rate per unit and calculate wages under differential piece rate system ❖ Time wages = Hours worked * Rate per hour ❖ Halsey scheme = Basic wages + 50%*Time saved * rate per hour
9	❖ Efficiency = Standard time / actual time ❖ Relevant hourly rate = Basic rate + 10% bonus + 2% bonus for every 1% efficiency beyond 100%
10	❖ Calculate standard time with the help of actual output. Calculate efficiency % and then calculate the earnings as per various plan
11	❖ Calculate wages as per correct rate and wages are per wrong rate. Amount of loss = Wages due to wrong rate - Wages as per correct rate

Qn	Summary of adjustment
	❖ Savings under Rowan plan = Wages as per Rowan plan - wages as per Halsey plan
12	❖ Similar to question no.1
Chapter 4 - Overheads	
1	❖ Step 1: We need to compute the total overheads in relation to machine. Depreciation on basis of SLM $[(10,000 - 1,000)/10 \text{ years}]$, Electricity is to be computed for running hours $(16 * 0.09 * 1,900 \text{ hours})$, Chemical solution $(\text{Rs.}20 * 50 \text{ weeks})$, maintenance cost, operator wages $(120 * 50 \text{ weeks} / 6 \text{ machines})$ and departmental and general works OH (2,000) ❖ Step 2: Effective working hours = Running hours + Set-up time ❖ Step 3: MHR = Step 1/Step 2
2	❖ Step 1: Compute overheads in relation to machine. Depreciation on basis of SLM $[(10,00,000-10,000)/10 \text{ years}]$, Repairs and maintenance (5,000), Insurance premium $(9,000 * 10 \text{ lacs}/90 \text{ lacs})$, Electricity $(8 \text{ units} * 3.75/\text{unit} * 4,000 \text{ hours})$, Rent (the machine occupies $1/10^{\text{th}}$ of the area and the same is missed out in the question) ❖ Step 2: Effective working hours = Total hours - non-productive hours ❖ Step 3: MHR = Step 1/ Step 2
3	❖ Step 1: Primary overhead distribution - Fuel & heat to be apportioned on the basis of radiator sections, Power (Kilowatt hours), Rent & rates (Area sq.feet), Insurance (Capital value of assets), Meal charges (No. of employees), Depreciation (Capital value of assets) ❖ Step 2: Secondary overhead distribution - Form two equations and solve to get the amount to be distributed for both departments ❖ $X = \text{OH of department A} + \text{Proportionate transfer from B } (0.1Y)$ ❖ $Y = \text{OH of department B} + \text{Proportionate transfer from A } (0.2X)$ ❖ Solve the equations and then distribute the amount to get the overheads post-secondary overhead distribution
4	❖ Setting up time can be either assumed as productive or non-productive. We can assume it as productive and hence effective working hours would be 2,600 hours ❖ Depreciation $[(25,00,000 - 1,25,000)/25,000 \text{ hours} * 2,600 \text{ hours}]$, Power $(25 \text{ units} * \text{Rs.}5/\text{unit} * 2,600 \text{ hours})$, R&M (26,000), Chemical solution $(2,600 * 12 \text{ months} / 2,600)$ overheads $(\text{Rs.}18,000 * 12)$, Insurance premium $(25,00,000 * 2\%)$, Salaries $(18,500 * 12 \text{ months} * 2 \text{ operators} / 4 \text{ machines})$ ❖ MHR = Total overheads / effective working hours
5	❖ Set-up time can be assumed as non-productive ❖ The workers are doing the work jointly and hence there will be total of 3 operators for 3 machines. Hence the labour cost has to be computed for 3 workers and the same should be divided by 3 machines ❖ Depreciation (SLM), Maintenance cost, Consumables stores, Power cost, Wages and Bonus will be incurred. Apportioned overheads should be divided by 13 to get the cost for 4 weeks and then the same should be divided by 3 to get the cost for a single machine
6	❖ Step 1: Do secondary overhead distribution on the basis of direct distribution method ❖ Step 2: Calculate OAR. Department P1 would be based on machine hours and department P2 would be based on direct labour hours ❖ Performance report - We need to compare the actual performance with standards set by the company. This is similar to variance analysis. Variance computation is to be done for material cost, labour cost and overheads ❖ Actual overheads will again be calculated by doing secondary overhead distribution

	on actual overheads and then calculating OAR
7	❖ We need to form two equations to get the percentage recovery rate for factory OH and administrative OH ❖ Factory OH can be assumed as X% of direct wages and administrative OH can be assumed as Y% of factory cost ❖ Cost of Job 101 = 54,000 + 42,000 + 42,000X + (54,000 + 42,000 + 42,000X)Y ❖ Form two equations and solve the same to get the OAR percentages ❖ We can calculate the cost of Job No.103 using the OAR rates computed above
8	❖ $\text{OAR} = \text{Budgeted Overheads} / \text{Budgeted machine hours}$ ❖ Adjusted OH incurred = Actual OH - abnormal items ❖ OH absorbed = OAR * Actual machine hours ❖ Amount of under-absorption = OH absorbed - OH incurred ❖ Abnormal under-absorption will be entirely charged to costing P&L whereas normal under-absorption will be recovered through supplementary recovery rate ❖ Supplementary recovery rate = Amount of normal under-absorption / Units produced (including equivalent WIP)
9	❖ Absorption basis for various items: Rent (Area square feet), Power (Machine hours * HP of machines), Depreciation (Capital value * machine hours), Other OH (Direct wages) ❖ We should consider the direct cost of service department for the purpose of primary and secondary overhead distribution ❖ Form two equations and get the amount to be distributed (similar to question no.3)
10	❖ Absorption basis for various items: Rent and rates (Floor space), General lighting (Number of light points), Indirect wages (Direct wages), Power (Horse power of machines), Depreciation on machinery (cost of machinery), Insurance of machinery (Cost of machinery) ❖ Form two equations and get the amount to be distributed (similar to question no.3)
11	❖ Absorption basis for various items: Lease rental (Floor space), Power and fuel (HP of machines * Working hours), wages to factory supervisor (working hours only to production departments), electricity (light points), Depreciation on machinery (Cost of machines), Depreciation on building (floor space), payroll expenses (no of employees), canteen expenses (no of employees), ESI and PF contribution (Direct wages) ❖ Form two equations and get the amount to be distributed (similar to question no.3)
12	❖ Absorption basis for various items: Factory rent (Floor space), Factory building insurance (Floor area), Plant & machinery insurance (Value of plant & machinery), Plant & machinery depreciation (value of plant & machinery), subsidy for staff canteen (no of employees) ❖ Order of distribution for step method - we need to start with maintenance department and then proceed with distribution of stores. Maintenance department is providing service to stores but stores is not providing service to maintenance ❖ Fabrication is machine related activity and hence OH to be driven by machine hours whereas assembly is related to labour and hence OH to be driven by labour hours ❖ Calculate the cost of the job using rates calculated above
13	❖ Absorption basis for various items: Power (HP hours), Rent (Floor space), Fuel and heat (radiator sections), Insurance (Investment), Taxes (Investment) and Depreciation (Investment) ❖ Form two equations and get the amount to be distributed (similar to question no.3)

Chapter 5: Non-Integrated Accounts

1	❖ Costing profit and loss account can be prepared in the form of cost sheet ❖ Factory overheads has to be taken as 20 percent of prime cost. Prime cost = Direct material + Direct wages. Administrative OH is to be taken as 10% of factory cost. Factory cost = Prime cost + Factory OH. ❖ Closing stock of FG has to be valued on the basis of current year cost of production. The company has produced 52,000 units and there are 2,000 units in stock ❖ Compare the cost sheet with financial P&L and identify the various item causing difference in profit and present the same in costing profit and loss account
2	❖ Creditors account will help us in calculating the amount of purchases ❖ Stores ledger control account will help us in calculating the amount of RM issued for consumption ❖ Prepare other accounts like wages control, OH control and WIP control account ❖ Closing balance of WIP = Material cost + labour cost (400 hours * Rs.50/hour) + overhead cost (400 hours * Rs.20/hour)
3	❖ Prepare the reconciliation statement by identifying the various plus and minus items
4	❖ Direct material will be transferred to WIP control and indirect material will be transferred to factory OH ❖ Direct wages will be transferred to WIP control and indirect wages will be transferred to factory OH ❖ Over absorption of factory OH will be transferred to credit side of P&L (income) and under-absorption of admin OH will be transferred to debit side of P&L (expense)
5	❖ Identify the various plus and minus item using the eight column format ❖ Plus items will have to be credited and minus items will have to be debited in memorandum reconciliation account
6	❖ Deficiency found in stock taking will be treated as normal loss and transferred to factory OH ❖ Difference between wages paid and wages charged will be the indirect wages and the same would be transferred to factory OH ❖ Balancing figure of WIP will be the cost of sales and same would be directly transferred to costing P&L. Sales will be taken as cost of sales plus 15% ❖ Under/over absorption of factory OH can either be carried forward or charged to costing P&L
7	❖ Similar to question no.5
8	❖ Finished product (at cost) will be interpreted as the production during the year ❖ Sales returned at cost will be the reversal of cost of sales. FG control will be debited as the same will increase and cost of sales will be credited
9	❖ Goods finished at cost refer to the amount of production during the year ❖ COGS will be reduction of FG and the same will be debited to cost of sales ❖ RM – credited by suppliers will be the amount of purchase returns ❖ WIP rejected with no scrap value will be treated as abnormal loss and debited to costing P&L ❖ RM inventory loss can be treated as normal loss and be treated as factory OH
10	❖ Open all the accounts given in the question and record all transactions ❖ OAR = Budgeted OH/Budgeted labour hours. OAR multiplied with labour hours can help us in getting the amount of overheads absorbed ❖ WIP = DM + DL + OH (1,200 * OAR) ❖ Wages paid will be 28,200 hours * Rs.2.5/hour. The rate of Rs.2.5 per hour is identified from note (e) and it is mentioned that the company pays the same amount per hour
11	❖ Prepare a profit and loss account and cost sheet to calculate costing and financial profit

	❖ Identify the various items causing difference in profits and capture the same in reconciliation account ❖ Costing records: Closing FG has to be valued based on current year production and the company can either follow FIFO or weighted average cost method
Chapter 6 – Job costing & batch costing	
1	❖ OAR for factory OH = Budgeted factory OH / budgeted labour cost ❖ OAR for admin OH = Budgeted admin OH / budgeted factory cost ❖ The material cost and labour cost is available for next year. Factory OH will be taken as the specified percentage of direct wages. Factory cost = DM + DL + FOH. Admin OH will be taken as specified percentage of factory cost. Add delivery cost and then get the cost of sales. ❖ Profit margin will be 1/10 on sales and it will be 1/9 on cost. Using that calculate the amount of sales
Chapter 7 – Contract costing	
1	❖ Sale of material has to be recorded in the credit side of contract account. Loss on sale of material will be treated as abnormal loss and hence removed from credit side of contract account and then transferred to profit and loss account ❖ Sale of plant and closing plant value will be credited to contract account and hence the net balance of depreciation will be recorded ❖ Difference between debit and credit side of contract account will give notional profit. We need to calculate estimated profit of the contract with the given estimates and then transfer to P&L will be the lowest of the four formulae
2	❖ Contract account will have three segments. Segment one will help us in calculating cost incurred till date. Segment two will record closing work certified and closing work uncertified and the same will help in getting notional profit. Segment 3 will calculate the transfer to P&L ❖ Transfer to P&L would depend on the degree of completion and then 1/3rd or 2/3rd or estimated profit method is to be used ❖ Work certified will be valued at contract price and work uncertified will be valued at cost price
3	❖ Notional profit = Work certified + Work uncertified – Cost incurred till date ❖ Estimated profit = Total contract price – estimated contract costs ❖ 4 methods would be 2/3rd rule and 4 methods based on estimated profit method. Transfer to P&L will be the lowest of the various answers
4	❖ Material returned to store will be recorded in the credit side of contract account ❖ Prepaid site office cost would be adjusted with site office cost and only the net cost would be charged to contract account ❖ Direct wages outstanding would be added to direct wages paid to get the amount of expenditure for the current period ❖ Plant will be recorded at original cost on debit side and the WDV (plant value – Depreciation) will be recorded in the credit side ❖ Loss of material by fire is an abnormal item and will be removed by crediting the same to contract account ❖ Contract WIP = Work certified + Work uncertified – WIP Reserve – Contractee account balance
5	❖ No special adjustment ❖ Contractee account will record the opening balance and the additional amount received in the current year ❖ Wages expenditure in the contract account = Wages paid + Closing outstanding – Opening outstanding
6	❖ Cost of work certified can be calculated by doing the contract account in three

	segments. ❖ Segment one will record all debit and credit side items except value of work certified. The balancing figure would be the cost of work certified ❖ Segment two will record cost of work certified and value of work certified. This would provide the amount of notional profit ❖ Segment three will record the amount of notional profit, transfer to P&L and WIP reserve
7	❖ Record the various items of income and expense in the contract account ❖ Depreciation can be calculated and recorded as a single item in the contract account. We normally record the cost in debit side and WDV in credit side. However this problem it will be easier to do it through recording of depreciation. Depreciation should be calculated only on 80% of machinery as only 80% is at site
8	❖ Prepare contract account in three segments. Segment one we will record all items except work certified and work uncertified. This will give us the cost incurred till date ❖ Segment two - Record work certified and work uncertified. This will give the amount of notional profit ❖ Segment three - Record transfer to P&L and WIP reserve ❖ Contract is more than 90 percent complete and hence we need to calculate estimated profit on the contract. Estimate profit = Contract price - Cost incurred till date - further cost to complete contract
9	❖ Part one - Calculate cost incurred till date. Estimated profit = Contract price - Cost incurred till date - estimated further cost to complete contract ❖ Use F2 formula of transfer of profit rules and find out the amount of profit to be transferred to P&L ❖ Part two - DOC will be less than 90% and hence transfer to P&L has to be based on 2/3rd rule
10	❖ Notional profit = Work certified + Work uncertified - Cost incurred till date ❖ Estimated profit = Total contract price - estimated contract costs ❖ Get DOC and find the profit transfer based on 2/3rd rule ❖ Part two: If the contractee has become bankrupt then we are not expected to receive additional money. Loss = Cost incurred till date - progress payments received. This amount is to be charged to P&L
11	❖ Donation paid to local clubs can be ignored in contract costing if the same is not exclusively related to contract ❖ Depreciation on machinery has to be calculated on the basis of number of days ❖ Get the amount of notional profit and then find out the transfer to P&L based on transfer of profit rules ❖ Land purchase and registration duty is not exclusively related to contract and hence cannot be charged to contract account
12	❖ Prepare a contract account for all three contracts and get the amount of notional profit/loss ❖ Estimated profit for contract III can be calculated by doing the contract account in three segments. Segment one will show the amount of cost incurred till date, segment two will indicate the amount of notional profit. ❖ Estimated profit for contract III = Contract price - cost incurred till date - estimated further cost ❖ Find the amount of transfer to P&L using profit transfer rules
Chapter 8 - Operating costing	
1	❖ Calculate KM run and total passenger KM. Number of KM = One-way distance * 2 * no of trips * 25 days * 12 months * 6 buses; Passenger KM = No of KM run * No

	of passenger ❖ Prepare operating cost sheet reflecting all expenses. The profit margin is 1/3 of sales and hence the same can be taken as 1/2 of cost ❖ Diesel cost = No of KM run * Cost per litre of diesel / No of KM per litre ❖ Fare per passenger KM = Total collections / total passenger KM
2	❖ Calculate KM run and passenger KM. Number of KM = One way distance * 2 * Number of trips * 25 days * 12 months * 1 bus; Passenger KM = No of KM run * No of passengers ❖ Calculate the annual cost of running bus. Profit margin is 15 percent of sales, commission is 10 percent of sales and hence the total cost (excluding commission) would be equal to 75 percent of sales. Considering this information we need to calculate the total collections and based on that we can calculate commission and profit ❖ Fare per passenger KM = Total collections / total KM
3	❖ Calculate KM run and passenger KM ❖ Calculate annual operating cost of the bus. Profit would be 25 percent of sales and passenger tax would be 22 percent of sales. Hence cost would be 53 percent of collections and based on that we can compute profit and passenger tax ❖ Cost per passenger KM = Total cost / Number of passenger KM
4	❖ Absolute tonne KM = (One way distance * weight-up) + (One way distance * weight-down). We need to compute this for every booking and add the total KM. We would also need the total KM run and the same would be used for calculating diesel and other costs ❖ Monthly operating cost for 4 trucks is to be calculated. Diesel, engine oil, repairs and maintenance and depreciation would be calculated with the help of distance travelled ❖ Cost per ton KM = Total cost / total ton KM
5	❖ Calculate distance travelled and ton KM. Ton KM = Distance travelled * Average load ❖ Calculate monthly operating cost. Cost per KM = Monthly cost / distance travelled; Cost per ton KM = Monthly cost / ton KM
6	❖ Step 1: Calculate the annual operating cost of the restaurant. Attendant wages = No of rooms occupied * Rs.500/day. Profit will be taken as 1/4 of collection and hence same will be 1/3 of cost. We can compute the total collections by adding profit to cost ❖ We will assume the rent of deluxe room to be X and hence rent of super deluxe room will be 2X and rent of luxury room will be 3X. Compute total collections in terms of X and equate that will collection figure computed above. We can therefore calculate rent for different category of rooms
7	❖ We should compute the total fixed cost and variable cost per KM for different options ❖ Fixed cost is zero and VC is Rs.10/KM for taxi ❖ Fixed cost is Rs.37,200 and VC is Rs.3.4/KM for new nano ❖ Fixed cost is Rs.44,400 and VC is Rs.2.8/KM for old innova ❖ We can compute total cost at 10,800 KM and 18,000 KM and decide the one which has the lowest cost ❖ BEP = Increase in fixed cost / saving in VC/KM
8	❖ Calculate distance travelled and total ton KM ❖ Calculate the operating cost for four weekly period ❖ Cost per KM = Total cost / Distance travelled; Cost per ton KM = Total cost / Ton KM

9	❖ We need to compute the cost of package and the same would involve travelling to multiple locations ❖ Diesel cost = Distance travelled / KM per litre * Respective diesel cost ❖ Calculate other costs for a single trip. Chauffeur's salary of Rs.12,000 per month is to be proportionately calculated for 3 days; Depreciation is to be proportionately calculated based on distance travelled; Proportionate servicing cost on basis of KM travelled; Meal allowance has to be taken as Rs.50 for every 200 completed KM; Other set-up is to be apportioned on basis of number of days ❖ Total cost + Profit = Net takings; Net takings + Service tax = Total takings ❖ Profit will be taken as $\frac{1}{4}$ of net takings and hence it will become $\frac{1}{3}$ of total cost ❖ Total takings = Net takings + 12.36% service tax
10	❖ Calculate distance travelled and number of litres carried ❖ Operating cost statement is to be prepared for every location. The various costs are calculated below: ❖ Toll tax = Cost per month is given ❖ Petrol cost = Distance travelled * Petrol cost / Respective mileage. The mileage will be 10 KMPL in first two years, it will be 8 KMPL in next two years and 6 KMPL in later years ❖ Depreciation = 10% of original cost and same should be divided by 12 to get monthly cost ❖ Servicing cost - To be calculated based on KM run. We need to consider free service period while calculating this ❖ Driver salary, cleaner salary, garage fee are other allied costs
Chapter 9 - Process and operation costing	
1	❖ Two material problem as there is a transfer of material from previous process and addition of material in current process ❖ Prepare input-output statement, statement of equivalent units, statement of cost per unit and statement of distribution of cost ❖ We can follow FIFO/Weighted average cost method as both will have no impact due to absence of opening WIP
2	❖ Prepare input-output statement and get the abnormal loss/abnormal gain ❖ Prepare process account. Cost per unit = (Total cost - Sale value of normal loss) / expected output ❖ Record the sale in individual process account and the profit on sale should be transferred to P&L account ❖ Selling expenses will be directly recorded in profit and loss account as the same is not allocable to individual processes
3	❖ Similar to question no.1 ❖ Abnormal loss account will have the transfer entry from process account and sale transaction is to be recorded. The net abnormal loss will be charged to costing profit and loss account
4	❖ Similar to question no.2 ❖ Indirect expenses will not be recorded in process account and the same would be directly recorded in profit and loss account ❖ Profit and loss account will also have an entry for net abnormal gain/loss. Net abnormal gain/loss = No of units * (Cost price - Realizable value)
5	❖ One material problem and FIFO method is to be followed ❖ Normal loss is to be taken as percentage of total input ❖ Follow six steps to identify the required information
6	❖ Multiple process, weighted average cost method and single material ❖ Follow five steps and get to the desired information

	❖ Closing WIP = Input - output transferred - Normal loss
7	❖ FIFO method and two material problem ❖ Normal loss is to be taken as 5 percent of processed production ❖ No other adjustment
8	❖ Opening WIP + Input - Closing WIP - Loss = Production during the year. We can compute the input with this equation ❖ Normal loss will be taken as 10 percent of input and the balance will be considered as abnormal loss ❖ We have to compute the number of equivalent units and multiply it with cost per equivalent unit to get the amount of expenses incurred ❖ Process account then can be prepared using the six steps
9	❖ Royalty expense is incurred only for units produced and hence the same can be directly transferred to FG control account ❖ Cost per good unit can be calculated from the process account without considering the royalty expense
10	❖ Similar to question no.7
11	❖ One material and FIFO method ❖ No special adjustment
12	❖ Prepare process XM account with three columns: Cost, Profit and Total ❖ Figures given in the question represent total column and the profit element should be deducted to get the cost ❖ Total column would represent the cost to the process and hence profit will be taken as $\frac{1}{4}$ on total figure for process XM. Process YM will have profit element of $\frac{1}{4}$ on total figure and process ZM will have profit element of $\frac{1}{3}$ on total figure ❖ Closing stock is to be recorded in the debit side as minus item
Chapter 10 - Joint products & by products	
1	❖ Sales data and estimated profits are available for both products. We can compute the total selling and distribution expenses as a balancing figure ❖ Selling and distribution expense will be split between two products on basis of sales price. ❖ $\text{Share of joint cost} = \text{Sales price} - \text{estimated profit} - \text{selling and distribution expense} - \text{further processing cost}$
2	❖ Estimated profit for B1 and B2 are available and hence we can find the share of joint cost as a balancing figure ❖ $\text{Share of joint cost for main product} = \text{Total joint cost} - \text{Share of cost of B1 and B2}$ ❖ $\text{Profit of product} = \text{Revenues} - \text{share of joint cost} - \text{further processing cost} - \text{estimated selling and distribution expense}$
3	❖ Similar to question no.2
4	❖ Joint cost can be apportioned on the basis of any of the one method ❖ Profit if product is further processed = Sale value after further processing - share of joint cost - further processing cost ❖ Profit if product is sold at split-off = Sale at split-off point - share of joint cost
5	❖ Joint cost can be apportioned on the basis of any of the one method ❖ We need to compute the joint cost per unit and further processing cost per unit. Entire output is not sold and hence some cost will be carried forward to next year as part of closing stock ❖ Decision on further processing can be done by comparing incremental cost with incremental revenue. Incremental cost is further processing cost per unit and incremental revenue is selling price after further processing - selling price at split-off point
6	❖ Share of joint cost will be the balancing figure

	❖ Cost of sales = Sales – estimated profit ❖ Selling and distribution expense will be 10 percent of cost of sales and the same shall be apportioned in the given ratio ❖ Share of joint cost = Cost of sales – selling expense – further processing cost
Chapter 11 – Standard Costing	
1	❖ No special adjustment ❖ AQ will be taken as actual quantity consumed. AP = Amount of purchases/quantity purchased
2	❖ Calculate equivalent units of labour and OH as per average cost method ❖ Compute cost per equivalent unit as per average cost method ❖ Variance calculation: We need to compute equivalent units as per FIFO method and calculate ST with the help of this actual output. Calculate relevant variances
3	❖ VC/unit = Change in total cost/change in units ❖ Standard absorption rate is 20 per unit and 4 per hour. Hence it can be concluded that one unit takes 5 hours ❖ VC/unit can be converted into VC/hour using the equation of 1 unit taking 5 hours. FC/hour will be balancing figure and we can proceed to compute all variances
4	❖ Standard output is 2000 units for a standard gang of 100 workers working for 40 hours. Hence 4000 hours will lead to 2000 units ❖ The above standard equation can be applied on actual output to get the standard hours ❖ Actual hours paid will be calculated based on 40 hours per worker whereas actual hours worked will be calculated based on 38 hours per worker
5	❖ Material price variance is given and the difference between SP and AP is available. We can use this information and compute actual quantity consumed ❖ Actual material cost is available and we can compute actual price. SP can then be computed ❖ SQ will be computed with the help of actual output ❖ Calculate all variances with the help of computation table
6	❖ Problem with no special adjustment ❖ SQ, SH is to be computed with the help of actual output
7	❖ Problem on variable overheads and fixed overheads – no special adjustment
8	❖ SQ of A is to be computed with the help of actual output of M and N. SQ needed for M and SQ needed for N is to be added to get SQ of A ❖ SQ of B is to be computed in similar way. We then need to compute the variances with help of computation table
9	❖ Company follows FIFO method of valuation. Opening stock is assumed to have been carried forward at standard price and current year purchases will be considered on the basis of current purchase price ❖ AQ = Quantity consumed = Opening stock + Purchases – Closing stock
10	❖ Labour efficiency is 105.3%. Labour efficiency = SH/AH; Actual hours is available in the question and based on that SH is computed ❖ SR is available and AR can be computed based on labour rate variance
11	❖ Compute standard input of B with help of material usage variance ❖ Compute actual input of A with help of material mix variance ❖ Complete computation table and then calculate all missing information
12	❖ SQ is to be computed with the help of actual output. AQ is to be computed with quantity per batch multiplied with number of batches ❖ Compute all relevant variances
13	❖ Similar to question no.12
14	❖ SQ is to be computed with help of actual output. There is a standard loss of 10

	percent and hence input-output ratio will be 100:90 ❖ There is a normal idle time of 5 percent and the actual idle time is not given in the question. Hence it is assumed that there is no abnormal idle time and hence the question is of multiple labour without idle time
15	❖ Overhead variances – no special adjustment
Chapter 12 – Marginal costing	
1	❖ PVR = Change in profit/change in sales ❖ Fixed expense can be computed by preparing a marginal cost sheet for any one level ❖ Break-even sales = Fixed cost/PVR ❖ Sales required to earn target profit = (Target profit + Fixed cost)/PVR
2	❖ Let us assumed SP as X and get profits in terms of X. Profits can also be taken as 10% of sales. Both are equated and we get the selling price ❖ $BEP = TFC / \text{Contribution per unit}$; $MOS = \text{Profit} / \text{Contribution per unit}$ ❖ Prepare a revised marginal cost statement and find the revised profit, BEP and MOS ❖ $MOS = \text{Profit} / \text{original PVR}$
3	❖ Fixed cost of 2015 = Production of 2015 * Fixed cost per unit ❖ Fixed cost of 2016 = Fixed cost of 2015 + Percentage increase ❖ The company will be first selling opening stock units and will be making contribution of Rs.120 per unit on them. However the variable cost per unit increases for current year production and hence the contribution per unit will reduce ❖ $BEP = (\text{Total fixed cost} - \text{Contribution from opening stock units}) / \text{Contribution per unit}$. This BEP is to be added with opening stock units to get the overall BEP
4	❖ MOS quantity and value can be used to calculate selling price. ❖ BEP units and SP is available and the same can be used to calculate Break-even sales ❖ Total units and SP is available and hence we can compute total sales ❖ Total sales – total cost = Profit; The company will be making zero profit at break-even sales; $PVR = \text{Change in profit/change in sales}$ ❖ All other information can be computed with the help of marginal cost statement
5	❖ PVR and break-even sales can be used to calculate fixed cost ❖ Profit earned can be computed as $MOS * PVR$ ❖ Sales to achieve target profit = (Target profit + FC)/PVR ❖ Profit of 25 percent on cost can be converted into 20 percent on sales. Assume number of units as X and get profit in terms of X ❖ BEP is to be brought down by 4,000 units and based on that we can compute target contribution per unit. Selling price = VC + Target contribution per unit
6	❖ $PVR = \text{Change in profit/change in sales}$ ❖ Prepare marginal cost statement and based on that compute the required information ❖ $MOS = \text{Profit} / PVR$ ❖ Sales at desired profit = (Desired profit + Fixed cost) / PVR
7	❖ $PVR = \text{Change in profit/change in sales}$ ❖ Prepare marginal cost statement and compute amount of fixed cost ❖ $BEP = \text{Fixed cost} / \text{Contribution per unit}$ ❖ Profit = (No of units * Contribution per unit) – Fixed cost ❖ Shut-down point = (Fixed cost during operation – Unavoidable fixed cost) / Contribution per unit
8	❖ Similar to question no.5
9	❖ Fixed cost = Normal fixed cost + Fixed cost content in semi-variable cost ❖ $BEP = \text{Total fixed cost} / \text{Contribution per unit}$ ❖ Assume no of units as X and get profit in terms of X. Get two equations on profits and equate them to find the number of units

	❖ Number of units to achieve desired profit = (Desired profit + Fixed cost) / Contribution per unit. The Units level go beyond 80 percent and hence we need to work with revised level of fixed cost to get the desired units ❖ Target cont per unit = Fixed cost/no of units. Target SP = VC + Contribution per unit
10	❖ $BEP = \text{Total fixed cost} / \text{Contribution per bag}$ ❖ Profit at 35,000 bags = (Units sold * Contribution per unit) - Total fixed cost ❖ Discontinuation of commission will lead to reduction in variable cost and increase in fixed cost. Additionally change in selling price will impact contribution per bag. Revised BEP = Revised Fixed cost/Revised contribution per unit ❖ VC will increase due to higher commission and SP will increase. Calculate revised contribution per bag and get break-even point
11	❖ $BEP = \text{Fixed cost} / PVR$ ❖ $PVR = 100\% - VCR$ ❖ $MOS = \text{Profit} / PVR$ ❖ Prepare a chart with variable cost, fixed cost, total cost and sales line
12	❖ Absorption costing values FG as total production cost and hence even fixed production cost will be included in valuation. Fixed production cost per unit is calculated based on normal volume and the same would be Rs.100 per unit ❖ Under-over absorption of fixed OH will be shown as an adjustment item to cost of sales ❖ Marginal costing will only consider variable production cost for inventory valuation and hence the profit under both methods will be different ❖ Profit as per marginal costing = Profit as per absorption costing - inventory valuation difference of closing stock + Inventory valuation difference of opening stock
13	❖ $BEP = \text{Fixed cost} / \text{contribution per unit}$ ❖ Cash BEP = Cash fixed cost/contribution per unit ❖ BEP for company can be calculated by assuming that one set contains one unit of factory A and two sets of factory B. We can compute contribution per set and use the same to calculate breakeven point in sets. This BEP can then be converted into BEP of individual factory
14	❖ $BEP = \text{Fixed cost} / PVR$ ❖ $BEP = 80\%$ of capacity sales. Hence based on this capacity sales can be calculated ❖ 80% of capacity sales is BEP and hence profit will be zero at 80% of capacity sales ❖ Profit = (Sales * PVR) - Fixed cost ❖ Sales to achieve desired profit = (Desired profit + Fixed cost) / PVR
15	❖ Marginal cost statement is to be prepared for 10,000 and 15,000 tests to calculate profits at these two levels
16	❖ Existing profit = MOS * PVR ❖ Sales to achieve desired profit = (Existing profit + Incremental profit + Interest cost + Fixed cost)/new PVR ❖ New PVR will be impacted by two events. Reduction in SP and increase in VC. They have mentioned that variable cost will increase by 2 percent on sales and hence the revised Variable cost ratio will be 72%. This gives us the PVR to be 28%
17	❖ Sales to maintain same profit = (Desired profit + Fixed cost) / New PVR ❖ Margin of safety = Profit/PVR
18	❖ We need to prepare a cost sheet to get the COGS and cost of sales ❖ $COGS = DM + DL + FOH + AOH + 2,30,000 + 71,000$. This will help us in calculating COGS ❖ $COS = COGS + SOH + 68,000$. This will help us in getting cost of sales.

	❖ Balance information can be computed with the help of a cost sheet
19	❖ Prepare a marginal cost statement and the same will provide contribution per unit and total fixed cost ❖ $BEP = TFC / \text{Contribution per unit}$ ❖ Part two: Assume no of units as X and get profit in terms of X. Solve the equation and get the number of units to be sold to earn 20 percent profit on sales ❖ Part three: use the formula of sales to maintain desired profit. This will help us in getting additional units to be sold to maintain profit ❖ Part four: Target BEP = Fixed cost/Contribution per unit. This will give us the contribution per unit and $SP = VC + \text{Contribution per unit}$
Chapter 13 – Budget and Budgetary control	
1	❖ Indifference point = (Change in fixed cost)/Change in variable cost per unit. This will help us in deciding which process the company should choose
2	❖ Revised units sold = Budgeted sales + percentage increase + units increase due to advertisement campaign ❖ Budgeted sales = Units * Revised SP
3	❖ Annual production = Annual sales + Closing FG – Opening FG ❖ Production for quarter I = 70% of Q1 sales + 30% of Q2 sales; production of Q4 will be balancing figure ❖ $BEP = TFC / \text{Contribution per unit}$. $TFC = 1,10,000 \text{ hours} * \text{Rs.2/hour}$ ❖ Identify BEP and find the quarter in which the sales will be reached
4	❖ Flexible budget preparation. Change the variable cost for different levels and keep the fixed cost constant
5	❖ Any change in variable cost has to be considered as a change in variable cost per unit and any change in fixed cost has to be considered as a change in total fixed cost
6	❖ Production = Sales + Closing stock – opening stock. Closing stock of April can be taken as 25% of sales of May. Opening stock of April can be taken as 25% of sales of April ❖ Production cost = No of units sold * Cost per unit ❖ Cost per unit = MC + LC + Manufacturing expense per unit; Manufacturing expense per unit = Total expenses/budgeted production
7	❖ Flexible budget will record the various fixed, variable and semi-variable expenses ❖ Teacher allowance, bus hire charge, special permit fee are semi-variable costs ❖ Block entrance fee, prizes to students are fixed costs ❖ Average cost = Total cost/no of students
8	❖ Production = Sales + Closing stock – Opening stock ❖ RM Consumption = Production * Input/Output ❖ RM Purchase = RM consumption + Closing RM – Opening RM ❖ Direct labour budget will have the required number of skilled and unskilled labour. The same can be calculated with the help of a standard equation
9	❖ Production quantity = Sales + Closing stock + Adjustment for losses ❖ RM Purchases = Quantity required for production + provision for losses ❖ Calculate EOQ for part two of the question ❖ The company does not want to place more than 40 orders and hence the overall RM purchases has to reduce. This will have consequent effect on production. The loss in production will be equal to the proportionate fall in purchase quantity
10	❖ FOH ratios are to be computed with the help of computation table used for fixed overhead cost variances ❖ We need to compute efficiency, capacity and activity ratio
11	❖ Flexible budget is to be prepared wherein the fixed cost will remain constant and

	variable cost will change with the change in production
12	❖ Similar to question no.6
13	❖ Calculate production for two products ❖ Calculate RM consumed based on production ❖ Calculate RM purchased based on RM consumed ❖ Calculate labour requirement based on production and labour requirement per unit. Consider efficiency ratio while calculating the hours required
14	❖ Similar to question no.6
15	❖ Fixed cost will remain constant and does not undergo change for various levels ❖ Variable cost will change proportionately with volume of sales ❖ Semi-variable cost will increase by the given percentage for changes in capacity ❖ Total cost = Fixed cost + variable cost + Semi-variable cost ❖ Profit = Sales - total cost
Chapter 2 - Time value of money	
1	❖ Amount to be deposited = Money required/FVAF
2	❖ Future value = Amount deposited * $(1+r)^n$ ❖ R will be taken as 10 percent and n is to be taken as 3 years if compounding is done annually ❖ R will be taken as 5 percent and n is to be taken as 6 periods if compounding is done semi-annually
3	❖ EMI = (Purchase price - Down-payment)/PVAF (24 months, (14%/12)) ❖ Amount of interest = (EMI * 24 periods) - Loan taken
4	❖ Annual payment = Money required/FVAF ❖ Lump sum payment = Money required/FVF (15 years, 9%) ❖ Annual payment at beginning = Money required/ (FVAF * $(1+r)$)
5	❖ Similar to question no.2
6	❖ Money to be deposited today = Money required / Future value factor ❖ Money to be deposited every year = Money required / Future value annuity factor
7	❖ Rs.3 has become Rs.4.02 in 9 year period. Compute future value factor and determine the rate of interest which would correspond to compute FVF
8	❖ Sinking fund investment = Money required/ FVAF
9	❖ Amount of installment = Loan amount/PVAF ❖ Prepare loan amortization table with opening balance, interest, installment and closing balance
Chapter 3 - Financial analysis and planning	
1	❖ Compute COGS with the help of GP ratio and sales ❖ Use fixed assets turnover ratio and stock turnover ratio to get the amount of fixed assets and stock ❖ Use inventory, quick ratio and current ratio to get the amount of current assets and current liabilities ❖ Calculate debtors with the help of debtors collection period and amount of sales ❖ Calculate networth with fixed assets and split the same into capital and reserves and surplus ❖ Capital gearing ratio = (Debt + Preference capital)/ Networth. This can be used to find the amount of fixed charge bearing capital ❖ Prepare balance-sheet
2	❖ Fixed assets is given in the question and with the help of that we can compute current assets and capital ❖ Capital to total liabilities ratio can be used to compute total liabilities ❖ Net profit to capital and net profit ratio can be used to compute amount of net profit and sales

	❖ Gross profit ratio can be used to compute GP. We can also calculate average stock with stock turnover ratio and then accordingly get opening and closing stock
3	❖ Outflow, inflow, no effect, no effect
4	❖ Debt equity ratio and amount of debt can be used to calculate the amount of equity ❖ Capital turnover ratio can be used to calculate the amount of sales. Capital = Debt + Equity ❖ GP ratio can be used to get the amount of GP ❖ Return on equity can be used to compute the amount of net profit ❖ Closing stock is 8% of sales and opening stock is available ❖ We can then prepare trading and Profit and loss account
5	❖ Simple problem on cash flow statement - No special adjustment
6	❖ Simple problem on cash flow statement - No special adjustment
7	❖ Liquidity, capital structure/leverage, profitability and activity
8	❖ Get average inventory with the help of sales, GP margin and inventory turnover ratio ❖ COGS = Purchases + opening stock - closing stock ❖ Average debtors can be computed with the help of credit sales and debtors turnover ratio ❖ Average creditors can be computed with the help of credit purchases and creditor turnover ratio ❖ Average payment period = $365 / \text{Creditors turnover ratio}$ ❖ Average collection period = $365 / \text{Debtors turnover ratio}$ ❖ Current assets and current liabilities are computed with the help of working capital and current ratio
9	❖ Fund flow statement will consist of statement of changes in working capital, statement showing funds from operations and fund flow statement ❖ Special adjustments are land sale, interim dividend and pre-acquisition dividend adjustment
10	❖ It is assumed that there is no debt capital and hence proprietor fund = Fixed assets + net working capital ❖ Net working capital is given in the question and fixed assets to proprietor fund is available. We can compute proprietor funds and fixed assets with this information ❖ ROE can be used to compute net profit and based on that net profit ratio can be calculated
11	❖ Cash flow statement - no special adjustment
12	❖ Current ratio and working capital can be used to calculate current assets and current liabilities ❖ Liquid ratio can be used for calculating quick assets and based on that we can compute inventory ❖ Inventory turnover ratio can be used to compute COGS and based on GP ratio we can compute sales ❖ Debtors can be calculated with the help of sales and average collection period ❖ Bank and cash can be a balancing figure in current assets and based on that reserves and surplus can be calculated
13	❖ Fund flow statement with no special adjustment
14	❖ Net profit/capital can be used to calculate net profit ❖ Net profit/sale can be used to compute sales ❖ GP ratio can be used to calculate amount of GP and COGS ❖ Average stock can be computed with COGS and the same can be split as opening and closing stock ❖ Prepare trading and profit & loss account in the normal manner

15	❖ Cash flow statement with no special adjustment
16	❖ Cash flow statement with no special adjustment
17	❖ Net working capital and current ratio can be used to calculate current assets and current liabilities ❖ Liquid ratio can be used to compute the amount of inventory ❖ Inventory and stock turnover ratio can be used to compute COGS ❖ COGS and GP ratio can be used to compute sales ❖ Debtors turnover ratio can be used to compute debtors ❖ Sales/fixed assets can be used to compute the amount of fixed assets
18	❖ Simple problem with no special adjustment
19	❖ Fund flow statement with no special adjustment
20	❖ Improve, decline, no change, no change and improve
21	❖ Income tax refund, issue of preference shares, interim dividend and redemption of debentures are special adjustments
22	❖ Gross profit and GP ratio can be used to calculate the amount of sales ❖ Fixed assets turnover ratio will give the amount of fixed assets ❖ Capital turnover ratio, inventory turnover ratio, receivable turnover ratio, payable turnover ratio will give the appropriate asset/liability
23	❖ Sales and GP margin can be used to calculate COGS ❖ Average inventory can be computed with the help of COGS and inventory turnover ratio ❖ Use current ratio and get the amount of current assets. Closing debtors will be balancing figure ❖ Average collection period can be calculated with the help of average debtors and credit sales
24	❖ Cash flow statement with no special adjustment
25	❖ Net profit can be computed with the help of sales. The same can be converted into PBT with the help of tax rate ❖ COGS and sales can be used to get gross profit and thereafter operating expenses will be balancing figure ❖ Balance-sheet can be prepared in the given format with the available ratios
26	❖ Fund flow statement with no special adjustment
27	❖ Gross profit and GP ratio can be used to get amount of sales and COGS ❖ Sundry debtors can be computed with debtors velocity and sales ❖ Sundry creditors can be computed with creditors velocity and purchases ❖ $\text{COGS} = \text{opening stock} + \text{Purchases} - \text{Closing stock}$; Purchases can be calculated as a balancing figure ❖ Average stock can be calculated with the help of stock turnover ratio and COGS ❖ Fixed assets can be computed with the help of fixed assets to turnover ratio
28	❖ Liquidity ratio – Higher liquidity ratio is preferable ❖ Operating profits – Higher operating profits is preferable ❖ Financing – Lower debt ratio is preferable ❖ Return to shareholders – Higher ROE is preferable
Chapter 4 – Financing Decisions	
1	❖ $\text{Ke} = (\text{D1/Po}) + \text{Growth rate}$ ❖ Part two: Use the above formula with growth rate of 8%, same Ke and get P0 as balancing figure ❖ $\text{Kd} = (\text{Interest after tax} + \text{Average other costs}) / \text{Average funds employed}$ ❖ $\text{Average funds employed} = (\text{Redemption value} + \text{Net proceeds}) / 2$ ❖ $\text{Average other costs} = (\text{Redemption value} - \text{Net proceeds}) / \text{Balance life}$

2	❖ Use the EBIT-EPS analysis format to calculate leverages ❖ $OL = \text{Contribution} / \text{EBIT}$ ❖ $FL = \text{EBIT} / (\text{EBT} - (\text{PD} / (1 - T)))$ ❖ $CL = OL * FL$ ❖ $\text{EPS} = \text{EAES} / \text{No of equity shares}$
3	❖ Step 1: Identify the various alternatives ❖ Step 2: Calculate amount of interest, preference dividend and number of equity shares for various options ❖ Step 3: Calculate EPS and decide the best form of financing
4	❖ $K_e = (D_1 / P_0) + \text{Growth rate}$ ❖ Cost of retained earnings = $K_e * (1 - \text{Personal tax rate}) * (1 - \text{Floatation cost}\%)$ ❖ Cost of preference is the PD rate and cost of debt is interest rate * (1 - Tax rate) ❖ Calculate WACC using both book value and market value weights. Market value of equity to be split between equity and reserves and surplus in the ratio of book value
5	❖ Similar to question no.2
6	❖ Cost of debt = $\text{Interest} * (1 - \text{Tax}) / \text{Net proceeds}$ ❖ Cost of preference = $\text{Preference dividend} / \text{Net proceeds}$ ❖ Cost of equity = $(D_1 / P_0) + \text{Growth rate}$ ❖ Marginal cost of capital is the WACC as the money would be raised in the current mix ❖ Money for capex = $\text{Amount of retained earnings} / \text{Weight of equity in capital structure}$ ❖ Calculate new cost of equity and consider the same for WACC calculation
7	❖ Financial leverage and interest can be used to calculate EBIT and EBT ❖ OL can be used to calculate contribution ❖ Get sales with the help of variable cost ratio and prepare income statement
8	❖ $K_d = (\text{Interest after tax} + \text{Average other costs}) / \text{Average funds employed}$ ❖ $\text{Average funds employed} = (\text{Redemption value} + \text{Net proceeds}) / 2$ ❖ $\text{Average other costs} = (\text{Redemption value} - \text{Net proceeds}) / \text{Balance life}$
9	❖ We need to use the format for valuation of firm to get the answer ❖ There will be three segments. Segment one on EBIT, Interest and EBT. Segment two on cost of debt, equity and capital. Segment three on value of debt, equity and firm
10	❖ Value the company before restructuring using valuation format ❖ Value of company post restructuring = $\text{Value of unlevered company} + (\text{Amount of debt} * \text{Tax rate})$ ❖ Cost of equity and WACC will flow from the format
11	❖ $\text{PD coverage} = \text{EAT} / \text{Preference dividend}$ ❖ $\text{Equity dividend coverage} = \text{EAES} / \text{Amount of dividend}$ ❖ $\text{Earnings yield} = \text{EPS} / \text{MPS}$ ❖ $\text{Price earning ratio} = \text{MPS} / \text{EPS}$ ❖ $\text{Net fund flow} = \text{PAT} + \text{Depreciation} - \text{Equity dividend} - \text{Preference dividend}$
12	❖ BEP and contribution per unit can be used to calculate amount of fixed cost ❖ $OL = \text{Contribution} / \text{EBIT}$
13	❖ Cost of preference = $(\text{Preference dividend} + \text{Average other costs}) / \text{Average funds employed}$
14	❖ Similar to question no.2
15	❖ Prepare leverage format and get OL/FL
16	❖ Assume EBIT as 2,40,000 and get EPS of alternative 1 ❖ Alternative 2 will also have same EPS and get the amount of preference dividend as balancing figure

	❖ Rate of preference dividend = Amount of dividend/Preference capital
17	❖ WACC calculation with no special adjustment
18	❖ Similar to question no.2
19	❖ Step 1: Identification of alternatives ❖ Step 2: Calculate no of equity shares and interest for the alternatives ❖ Step 3: Assume EBIT as X and get EPS in terms of X. Equate EPS of two alternatives and get indifference point
20	❖ Value unlevered company as per the valuation format ❖ Value of levered company = Value of unlevered company + (Amount of debt * Tax rate)
21	❖ Similar to question no.11
22	❖ Leverages - no special adjustment
23	❖ Covered in ratio analysis chapter
24	❖ Post tax cost of debt will be the weighted average of two debt ❖ $K_e = (D1/P0) + G$ ❖ $K_r = K_e * (1 - \text{Personal tax rate}) * (1 - \text{Floatation cost \%})$ ❖ WACC can be computed with the WACC format
25	❖ Cost of equity = DPS/MPS. There will be no growth as entire dividend is paid out ❖ Cost of equity = $(D1/P0) + \text{Growth rate}$
26	❖ EBIT/EPS analysis format is to be used for calculating EPS ❖ Assumed EBIT as X and get EPS in terms of X. Equate two EPS and get the indifference point
27	❖ Leverages problem - No special adjustment ❖ There will be total of 4 alternatives - Two plans combined with two fixed cost structure
28	❖ We need to compute WMCC for every level and then get the discount rate for 6 lacs and 14.5 lacs capex ❖ Project giving a return of 10 percent will be acceptable only if the cost of capital would be 10%
29	❖ Problem on leverages with no special adjustment
30	❖ Calculate cost of individual components of capital with additional information ❖ Calculate WACC based on both book value and market value weights. Market value weights can be calculated with the help of information on current market price
31	❖ Calculate EPS for both alternatives ❖ $MPS = EPS * PE \text{ Multiple}$ ❖ Same ROCE is maintained and hence the EBIT will increase due to the new project ❖ Interest on existing debt will not be impacted and only the new debt will be at higher rate
32	❖ Similar to question no.24
33	❖ Use the normal valuation format to value company as per Net income approach ❖ Net operating income approach: Value the unlevered company first. Value of levered company = value of unlevered company + (amount of debt * tax rate)
34	❖ Leverages - no special adjustment ❖ $ROI = EBIT / \text{Amount of investment (equity + debt)}$ ❖ A firm has favorable financial leverage if ROI is higher than cost of debt
35	❖ Use EBIT-EPS analysis format to calculate EPS ❖ No special adjustment
36	❖ Similar to question no.31
37	❖ Value unlevered company using the firm valuation format ❖ Value of levered company = value of unlevered company + (Amount of debt * Tax

	rate)
38	❖ Problem on EPS and indifference point – No special adjustment
39	❖ $EPS = \frac{EAE\$}{\text{No of equity shares}}$ ❖ Cost of debt = Interest after tax/ Amount of debt ❖ Cost of equity = EPS/MPS (assuming entire EPS is distributed)
40	❖ Similar to question no.6
41	❖ Problem on indifference point – no special adjustment
42	❖ Similar to question no.34
43	❖ Similar to question no.24
44	❖ Simple problem on leverages – no special adjustment
45	❖ Value unlevered company as per the valuation format ❖ Levered company = Unlevered company + (amount of debt * Tax rate)
46	❖ Similar to question no.31
Chapter 6 – Investment decisions	
1	❖ Profitability index and cost of project can be used to calculate present value of cash flow ❖ IRR is the rate of return at which NPV is zero. At this stage PV of inflow will be equal to PV of outflow and based on this annual cash flow can be calculated ❖ $NPV = PV \text{ of inflow} - PV \text{ of outflow}$ ❖ Cost of capital can be calculated using NPV ❖ Discounted payback = Base year + (unrecovered cash flow of base year/ discounted cash flow of next year)
2	❖ Payback = Amount of investment/ annual cash flow ❖ Consider the cost saving as inflow and proceed to calculate CFAT
3	❖ No special adjustment
4	❖ Calculate $EAC = PV \text{ of outflow}/PVAF$
5	❖ Calculate incremental cash flow. Incremental cash flow = Cash flow from new machine – Loss of commission income ❖ Calculate NPV and PI in the normal manner
6	❖ No special adjustment
7	❖ Consider additional equipment purchase as an outflow in year 2. Beginning of year 3 is similar to end of year 2 ❖ No other special adjustment
8	❖ The company has an accounting book value of Rs.1,00,000 and it has been fully depreciated for tax purpose. Hence no additional depreciation can be charged ❖ Use incremental approach and get incremental cash flow ❖ Allocated corporate OH are to be ignored
9	❖ Tax rate is not given in the question and hence impact of depreciation can be ignored ❖ The company has three options: Option 1 – Purchase of XYZ, Option 2 – Purchase of ABC, Option 3 – Lease of ABC ❖ Calculate $EAC = PV \text{ of outflow}/PVAF$ ❖ We need to compute the cash flow for a period of 5 years and calculate EAC for various options. This is to be done for part two to find the most economical option
10	❖ Calculate EAB to make decision as the life of the projects are different
11	❖ No special adjustment
12	❖ Similar to question no.4
13	❖ Use incremental approach and calculate NPV to decide on the improvement
14	❖ Calculate incremental cash flow ❖ Incremental cash flow = Post tax cost saving + Tax benefit of incremental

	depreciation ❖ Decide on replacement with the help of NPV on incremental cash flow
15	❖ Calculate PV of outflow and decide on the better machine
16	❖ Income statement given in the question will not impact the choice and hence has to be ignored ❖ Consider the cost saving and depreciation impact of new machine and decide on replacement of machine
17	❖ No special adjustment
18	❖ Calculate CFAT and calculate NPV at hurdle rate of 10% to decide on purchase of machine

CHAPTER 1 - BASIC CONCEPTS**Question No.1 – November 2016**

Give the method of costing and the unit of cost against the under noted industries:

- (i) Road transport
- (ii) Steel
- (iii) Bicycles
- (iv) Bridge construction

Question no.2 – November 2015

State the method of costing and also the unit of cost for the following industries:

- (i) Hotel
- (ii) Toy-making
- (iii) Steel
- (iv) Ship Building

Question No.: 3 (May 2012 exam – 4 Marks)

State the types of cost in the following cases:

- (i) Interest paid on own capital not involving any cash outflow.
- (ii) Withdrawing money from bank deposit for the purpose of purchasing new machine for expansion purpose.
- (iii) Rent paid for the factory building which is temporarily closed
- (iv) Cost associated with the acquisition and conversion of material into finished product.

Question No.: 4 (May 2013 exam – 4 Marks)

Cost of a product or service is required to be expressed in suitable cost unit. State the cost units for the following industries:

- (i) Steel
- (ii) Automobile
- (iii) Transport
- (iv) Power

CHAPTER 2 – MATERIAL

Question No.1 – November 2016

Supreme Limited is a manufacturer of energy saving bulbs. To manufacture the finished product one unit of component 'LED' is required. Annual requirement of component 'LED' is 72,000 units, the cost being ₹ 300 per unit. Other relevant details for the year 2015-2016 are:

<i>Cost of placing an order</i>	<i>:</i>	<i>₹ 2,250</i>
<i>Carrying cost of inventory</i>	<i>:</i>	<i>12% per annum</i>
<i>Lead time-</i>		
<i>Maximum</i>	<i>:</i>	<i>20 days</i>
<i>Minimum</i>	<i>:</i>	<i>8 days</i>
<i>Average</i>	<i>:</i>	<i>14 days</i>
<i>Emergency purchase</i>	<i>:</i>	<i>5 days</i>
<i>Consumption-</i>		
<i>Maximum</i>	<i>:</i>	<i>400 units per day</i>
<i>Minimum</i>	<i>:</i>	<i>200 units per day</i>
<i>Average</i>	<i>:</i>	<i>300 units per day</i>

You are required to calculate:

- (i) Re-order quantity*
- (ii) Re-ordering level*
- (iii) Minimum stock level*
- (iv) Maximum stock level*
- (v) Danger level*

Question No.: 2 (November 2012 exam – 5 Marks)

KL Limited produces product 'M' which has a quarterly demand of 8,000 units. The product requires 3 kgs quantity of material 'X' for every finished unit of product. The other information are follows:

<i>Cost of material 'X'</i>	<i>:</i>	<i>₹ 20 per kg.</i>
<i>Cost of placing an order</i>	<i>:</i>	<i>₹ 1000 per order</i>
<i>Carrying Cost</i>	<i>:</i>	<i>15% per annum of average inventory</i>

You are required:

- (i) Calculate the Economic Order Quantity for material 'X'.*
- (ii) Should the company accept an offer of 2 percent discount by the supplier, if he wants to supply the annual requirement of material 'X' in 4 equal quarterly instalments ?*

Question No.: 3 (November 2013 exam – 5 Marks)

Primex Limited produces product 'P'. It uses annually 60,000 units of a material 'Rex' costing ₹ 10 per unit. Other relevant information are:

<i>Cost of placing an order</i>	<i>:</i>	<i>₹ 800 per order</i>
<i>Carrying cost</i>	<i>:</i>	<i>15% per annum of average inventory</i>
<i>Re-order period</i>	<i>:</i>	<i>10 days</i>
<i>Safety stock</i>	<i>:</i>	<i>600 units</i>

The company operates 300 days in a year.

You are required to calculate:

- (i) Economic Order Quantity for material 'Rex'.*
- (ii) Re-order Level*
- (iii) Maximum Stock Level*
- (iv) Average Stock Level*

Question No.: 4 (May 2014 exam – 8 Marks)

A company manufactures a product from a raw material, which is purchased at ₹ 80 per kg. The company incurs a handling cost of ₹ 370 plus freight of ₹ 380 per order. The incremental carrying cost of inventory of raw material is ₹ 0.25 per kg per month. In addition, the cost of working capital finance on the investment in inventory of raw material is ₹ 12 per kg per annum. The annual production of the product is 1,00,000 units and 2.5 units are obtained from one kg. of raw material.

Required:

- (i) Calculate the economic order quantity of raw materials.*
- (ii) Advise, how frequently company should order for procurement be placed.*
- (iii) If the company proposes to rationalize placement of orders on quarterly basis, what percentage of discount in the price of raw materials should be negotiated?*

Assume 360 days in a year.

(8 Marks)

Question No.5 – November 2014 exam

Following details are related to a manufacturing concern:

<i>Re-order Level</i>	<i>1,60,000 units</i>
<i>Economic Order Quantity</i>	<i>90,000 units</i>
<i>Minimum Stock Level</i>	<i>1,00,000 units</i>
<i>Maximum Stock Level</i>	<i>1,90,000 units</i>
<i>Average Lead Time</i>	<i>6 days</i>
<i>Difference between minimum lead time and Maximum lead time</i>	<i>4 days</i>

Calculate:

- (i) Maximum consumption per day*
- (ii) Minimum consumption per day*

Question No.6 – May 2017 RTP

Aditya Ltd. has a monthly requirement for an item of raw material is 1,000 units. The purchase price per unit of material is ₹60. The cost of processing an order is ₹540 and the carrying cost is 20%. There is a single supplier for the material which offers quantity discounts as under:

Order Quantity (in units)	Price per unit (₹)
Less than 2,000 units	60.00
2,000 units and less than 4,000 units	59.80
4,000 units and less than 6,000 units	59.50
6,000 units and less than 8,000 units	58.90
8,000 units and above	58.40

The company uses the cash credit facility provided by the company's banker to finance its raw material purchase. The bank due to its own infrastructural constraint, can accommodate a maximum of five fund transfer (NEFT/ RTGS) requests for any single beneficiary per annum. The company in short term is unable to arrange any other source of finance.

Required:

- (i) Calculate the optimum purchase order size for the company;
- (ii) Calculate the order level where the company could have minimised its total cost;
- (iii) The amount of loss that the company has to bear due to bank's inability to process fund transfer requests.

Question No.7 – May 2016 RTP

JP Limited, manufacturers of a special product, follows the policy of EOQ (Economic Order Quantity) for one of its components. The component's details are as follows:

	(₹)
Purchase Price Per Component	200
Cost of an Order	100
Annual Cost of Carrying one Unit in Inventory	10% of Purchase Price
Total Cost of Inventory and Ordering Per Annum	4,000

The company has been offered a discount of 2% on the price of the component provided the lot size is 2,000 components at a time.

You are required to:

- (a) Compute the EOQ
- (b) Advise whether the quantity discount offer can be accepted.
- (c) Would your advice differ if the company is offered 5% discount on a single order?
(Assume that the inventory carrying cost does not vary according to discount policy)

Question No.8 – November 2015 RTP

Aditya Brothers supplies surgical gloves to nursing homes and polyclinics in the city. These surgical gloves are sold in pack of 10 pairs at price of ₹ 250 per pack.

For the month of November 2015, it has been anticipated that a demand for 60,000 packs of surgical gloves will arise. Aditya Brothers purchases these gloves from the manufacturer at ₹ 228 per pack within a 4 to 6 days lead time. The ordering and related cost is ₹ 240 per order. The storage cost is 10% p.a. of average inventory investment.

Required:

- (i) Calculated the Economic Order Quantity (EOQ)
- (ii) Calculate the number of orders needed every year
- (iii) Calculate the total cost of ordering and storage of the surgical gloves.
- (iv) Determine when should the next order to be placed. (Assuming that the company does maintain a safety stock and that the present inventory level is 10,033 packs with a year of 360 working days).

Question No.: 9 (November 2012 RTP)

HTC Ltd. is a manufacturer of laptops and for this it requires microprocessors. A laptop requires one microprocessor. The current market demand for the HTC's laptop is 1,40,000 units per annum.

The cost of placing an order is ₹13,500

Purchase price per unit inclusive of shipment charges is ₹6,000

Annual cost of storage per unit is ₹32.5

Orders are delivered within 4 to 8 weeks and for emergency purchase it takes 2 weeks.

Rate of usage of microprocessor is 1500 units to 2800 units per week.

From the above details you are required to calculate (i) Re-order quantity (ii) Re-ordering level (iii) Maximum level (iv) Minimum level and (v) Danger level.

Question No.: 10 (May 2013 RTP)

The following information has been extracted from the records of a cotton merchant, for the month of March, 2013:

Sales for the month: ₹ 62,00,000

Opening Stock as on 01.03.2013: 22,000 kgs @ ₹ 58.50.

Purchases made during the month

Date	Quantity (kgs.)	Rate (₹)
03.03.2013	35,000	59.00
18.03.2013	32,000	59.50
25.03.2013	22,000	60.00

(on all the above purchases, freight is paid @ ₹ 1.75 per kgs)

Closing stock as on 31.03.2013: 23,000 kgs

Salary paid to accountant ₹ 11,000.

From the above information you are required to calculate the following:

- Value of closing stock as on 31.03.2013 (using First In First Out (FIFO) method)
- Cost of goods sold during March, 2013 and
- Profit for the month of March, 2013.

Question No.: 11 (November 2013 RTP)

RTC Limited uses chemical-X in one of its finished products. The chemical-X is purchased from a vendor outside India. RTC Limited purchases 36,000 ltr of chemical-X per year at the rate of ₹ 900 per ltr plus import duty @10% on such purchases.

The chemical-X is used evenly throughout the year in the production process on a 360-day-per-year basis. The company incurs ₹ 1,75,000 on one year agreement for material supply with the vendor and it estimates that ₹ 35,000 will be incurred to place a single purchase order. The chemical-X is needed to be kept in a very carefully controlled temperature and humidity conditions. RTC Ltd. incurs 1.5% and 0.2676% of the value of inventory as storage cost and as insurance cost respectively.

Delivery from the vendor generally takes 12 days, but it can take as much as 16 days. The days of delivery time and percentage of their occurrence are shown in the following tabulation:

<i>Delivery time (days)</i>	:	12	13	14	15	16
<i>Percentage of occurrence</i>	:	70	10	10	5	5

Required:

- (i) Compute the economic order quantity (EOQ).
- (ii) Assume the company is willing to assume a 10% risk of being out of stock. What would be the safety stock? The re-order point?
- (iii) Assume 5% stock-out risk. What would be the total cost of ordering and carrying inventory for one year?

Question No.: 12 (May 2015 RTP, Nov 2017 RTP)

Aditya Ltd. produces a product 'Exe' using a raw material Dee. To produce one unit of Exe, 2 kg of Dee is required. As per the sales forecast conducted by the company, it will be able to sell 10,000 units of Exe in the coming year. The following is the information regarding the raw material Dee:

- (i) The Re-order quantity is 200 kg. less than the Economic Order Quantity (EOQ).
- (ii) Maximum consumption per day is 20 kg. more than the average consumption per day.
- (iii) There is an opening stock of 1,000 kg.
- (iv) Time required to get the raw materials from the suppliers is 4 to 8 days.
- (v) The purchase price is ₹125 per kg.

There is an opening stock of 900 units of the finished product Exe.

The rate of interest charged by bank on Cash Credit facility is 13.76%.

To place an order company has to incur ₹ 720 on paper and documentation work.

From the above information find out the followings in relation to raw material Dee:

- (a) Re-order Quantity
- (b) Maximum Stock level
- (c) Minimum Stock level
- (d) Calculate the impact on the profitability of the company by not ordering the EOQ.

[Take 364 days for a year]

CHAPTER 3 – LABOUR

Question No.1 – November 2015

Human Resources Department of A Ltd. computed labour turnover by replacement method at 3% for the quarter ended June 2015. During the quarter, fresh recruitment of 40 workers was made. The number of workers at the beginning and end of the quarter was 990 and 1,010 respectively.

You are required to calculate the labour turnover rate by Separation Method and Flux Method.

Question No.: 2 (May 2012 exam – 8 Marks)

The management of a company wants to formulate an incentive plan for the workers with a view to increase productivity. The following particulars have been extracted from the books of company:

Piece Wage rate ₹ 10

Weekly working hours 40

Hourly wages rate ₹ 40 (guaranteed)

Standard/normal time per unit 15 minutes.

Actual output for a week:

Worker A	176 pieces
Worker B	140 pieces

Differential piece rate: 80% of piece rate when output below normal and 120% of piece rate when output above normal.

Under Halsey scheme, worker gets a bonus equal to 50% of Wages of time saved.

Calculate:

- Earning of workers under Halsey's and Rowan's premium scheme.
- Earning of workers under Taylor's differential piece rate system and Emerson's efficiency plan. (8 Marks)

Question No.: 3 (May 2013 exam – 6 Marks)

A skilled worker is paid a guaranteed wage rate of ₹ 120 per hour. The standard time allowed for a job is 6 hour. He took 5 hours to complete the job. He is paid wages under Rowan Incentive Plan.

- Calculate his effective hourly rate of earnings under Rowan Incentive Plan.
- If the worker is placed under Halsey Incentive Scheme (50%) and he wants to maintain the same effective hourly rate of earnings, calculate the time in which he should complete the job. (6 Marks)

Question No.: 4 (November 2013 exam – 8 Marks)

The rate of change of labour force in a company during the year ending 31st March, 2013 was calculated as 13%, 8% and 5% respectively under 'Flux Method', 'Replacement

method' and 'Separation method'. The number of workers separated during the year is 40.

You are required to calculate:

- (i) Average number of workers on roll.*
- (ii) Number of workers replaced during the year.*
- (iii) Number of new accessions i.e. new recruitment.*
- (iv) Number of workers at the beginning of the year.*

(8 Marks)

Question No.5 – May 2017 RTP

Jigyasa Ltd. pays a basic wage of ₹ 125 per hour to its production workers. The company works 6 days a week in a single shift of 8:00 AM. to 4:30 PM. The company also pays overtime to its workers apart from basic wages for work beyond its normal working hours. The overtime rule is as under:

- (i) No over-time is paid for any work upto 5:30 PM.
- (ii) ₹ 62.50 per hour for any work done after 5:30 PM.
- (iii) The Maximum over-time payment is restricted to ₹ 375 for a day, However, workers are paid ₹ 80 as diet allowance for work done beyond 8:30 PM.
- (iv) On Sunday or any holiday, workers are paid ₹ 375 provided they work atleast for 4 hours.

The extract of attendance for three workers is as follows:

	Worker- A	Worker- B	Worker- C
Monday	8:00AM – 6:30 PM	8:00 AM – 7:30 PM	8:00 AM – 9:30 PM
Tuesday (Holiday)	8:00 AM – 5:30 PM	8:00 AM – 12:30 PM	Absent
Wednesday	8:00 AM – 10:30 PM	8:00 AM – 5:30 PM	8:00 AM – 11:30 PM

Thursday	8:00 AM – 4:30 PM	8:00 AM – 9:30 PM	8:00 AM – 8:30 PM
Friday	8:00 AM – 11:00 PM	8:00 AM – 4:30 PM	8:00 AM – 4:30 PM
Saturday	Absent	8:00 AM – 5:30 PM	8:00 AM – 7:30 PM
Sunday	Absent	8:00 AM – 1:30 PM	8:00 AM – 4:30 PM

Required:

- (i) Calculate the amount of overtime and diet allowance payable to each worker.
- (ii) Calculate the amount and accounting treatment of overtime and diet allowance in each case:
 - (a) Worker A and C were involved in a specific job work assigned to them.
 - (b) Overtime was due to under-estimation of sales demand provided by the sales department.
 - (c) Overtime was due to make up a shortfall in production due to sudden demand.

Question No.6 – November 2016 RTP

A Company is undecided as to what kind of wage scheme should be introduced. The following particulars have been compiled in respect of three workers. Which are under consideration of the management.

	I	II	III
Actual hours worked	380	100	540
Hourly rate of wages (in ₹)	40	50	60
Productions in units:			
- Product A	210	-	600
- Product B	360	-	1350
- Product C	460	250	-
Standard time allowed per unit of each product is:			
	A	B	C
Minutes	15	20	30

For the purpose of piece rate, each minute is valued at ₹ 1/-

You are required to calculate the wages of each worker under:

- (i) Guaranteed hourly rate basis
- (ii) Piece work earning basis, but guaranteed at 75% of basic pay (Guaranteed hourly rate if his earnings are less than 50% of basic pay.)
- (iii) Premium bonus basis where the worker received bonus based on Rowan scheme.

Question No.7 – May 2016 RTP, Nov 2017 RTP

Jyoti Ltd. wants to ascertain the profit lost during the year 2014-15 due to increased labour turnover. For this purpose, they have given you the following information:

- (1) Training period of the new recruits is 50,000 hours. During this period their productivity is 60% of the experienced workers. Time required by an experienced worker is 10 hours per unit.
- (2) 20% of the output during training period was defective. Cost of rectification of a defective unit was ₹ 25.
- (3) Potential productive hours lost due to delay in recruitment were 1,00,000 hours.
- (4) Selling price per unit is ₹ 180 and P/V ratio is 20%.
- (5) Settlement cost of the workers leaving the organization was ₹ 1,83,480.
- (6) Recruitment cost was ₹ 1,56,340
- (7) Training cost was ₹ 1,13,180

You are required to calculate the profit lost by the company due to increased labour turnover during the year 2014-15.

Question No.8 – November 2015 RTP

Arnav Limited manufactures and sales plastic chairs. It pays wages under the differential piece rate system by following F.W. Taylor's System with a standard piece rate of ₹ 12.50 per unit of chair produced by the workers. Standard production per hour is 4 chairs. Each worker is supposed to work 8 hours a day from Monday to Friday and 5 hours on Saturday. Presently, there are 118 workers who are entitled for this plan.

The plant and machinery used to manufacture the chairs was purchased long back and does not match with the efficiency of the workers. Workers appraised their concerns to the management and demanded wages on the time rate basis i.e. ₹ 50 per hour and the incentive under the Halsey Premium plan.

The following production estimates has been made for the month of November, 2015 under the three scenarios:

Scenario	Worst case	Optimal case	Best case
Production (in units)	42,400	84,960	1,27,400

Required:

- (a) Calculate total wages and average wages per worker per month, under the each scenario, when
 - (i) Current system of wages and incentive payment system is followed
 - (ii) Workers' demand for time rate wages and Halsey premium plan is accepted.
- (b) Mr. K, during the month of October 2015, has produced 1,050 units. What will be impact on his earning if he will be able to produce the same number of units in next month also. Should he support the workers' demand?
(Take 4 working weeks in a month)

Question No.: 9 (May 2013 RTP)

Mr. X had been allotted a work which had to be completed within 80 hours. He took 74 hours to complete the work. The company pays incentive bonus of 10% on the hourly rate if standard time is achieved and a further incentive bonus of 2% on hourly rate for each 1% in excess of 100% efficiency is payable. The normal wage rate is ₹ 30 per hour.

Calculate the effective wage rate per hour worked and total wages to be paid to Mr. X.

Question No.: 10 (May 2014 RTP)

A, B and C are three industrial workers working in Sports industry and are experts in making cricket pads. A, B and C are working in Mahi Sports, Virat Sports and Sikhar Sports companies respectively. Workers are paid under different incentive schemes. Company wise incentive schemes are as follows:

Company	Incentive scheme
Mahi Sports	Emerson's efficiency system
Virat Sports	Merrick differential piece rate system
Sikhar Sports	Taylor's differential piece work system

The relevant information for the industry is as under:

Standard working hours	8 hours a day
Standard output per hour (in units)	2
Daily wages rate	₹ 360
No. of working days in a week	6 days

Actual outputs for the week are as follows:

A	B	C
132 units	108 units	96 units

You are required to calculate effective wages rate and weekly earnings of all the three workers.

Question No.:11 – November 2014 RTP

Jigyasa Boutiques LLP. (JBL) takes contract on job works basis. It works for various fashion houses and retail stores. It has employed 26 workers and pays them on time rate basis. On an average an employee is allowed 2 hours for boutique work on a piece of garment. In the month of March 2014, two workers Margaret and Jennifer were given 30 pieces and 42 pieces of garments respectively for boutique work. The following are the details of their work:

	Margaret	Jennifer
Work assigned	30 pcs.	42 pcs.
Time taken	28 hours	40 hours

Workers are paid bonus as per Halsey System. The existing rate of wages is ₹ 50 per hour. As per the new wages agreement the workers will be paid ₹ 55 per hour w.e.f. 1st April 2014. At the end of the month March 2014, the accountant of the company has calculated wages to these two workers taking ₹ 55 per hour.

- From the above information calculate the amount of loss that the company has incurred due to incorrect rate selection.
- What would be the loss incurred by the JBL due to incorrect rate selection if it had followed Rowan scheme of bonus payment.
- Amount that could have been saved if Rowan scheme of bonus payment was followed.
- Do you think Rowan scheme of bonus payment is suitable for JBL?

Question No.12 – May 2017

- (a) RST Company Ltd. has computed labour turnover rates for the quarter ended 31st March, 2017 as 20%, 10% and 5% under flux method, replacement method and separation method respectively. If the number of workers replaced during that quarter is 50, find out (i) Workers recruited and joined (ii) Workers left and discharged and (iii) Average number of workers on roll. (5 Marks)

CHAPTER 4 - OVERHEADS

Question No.1 – May 2016

The following particulars refer to process used in the treatment of material subsequently, incorporated in a component forming part of an electrical appliance:

- (i) *The original cost of the machine used (Purchased in June 2008) was ₹ 10,000. Its estimated life is 10 years, the estimated scrap value at the end of its life is ₹ 1,000, and the estimated working time per year (50 weeks of 44 hours) is 2,200 hours of which machine maintenance etc., is estimated to take up 200 hours.*

No other loss of working time expected, setting up time, estimated at 100 hours, is regarded as productive time. (Holiday to be ignored).

- (ii) *Electricity used by the machine during production is 16 units per hour at cost of a 9 paise per unit. No current is taken during maintenance or setting up.*
- (iii) *The machine required a chemical solution which is replaced at the end of week at a cost of ₹ 20 each time.*
- (iv) *The estimated cost of maintenance per year is ₹ 1,200.*
- (v) *Two attendants control the operation of machine together with five other identical machines. Their combined weekly wages, insurance and the employer's contribution to holiday pay amount ₹ 120.*
- (vi) *Departmental and general works overhead allocated to this machine for the current year amount to ₹ 2,000.*

You are required to calculate the machine hour rate of operating the machine.

Question No.: 2 (May 2012 exam – 5 Marks)

A Machine costing ₹10 lacs was purchased on 1-4-2011. the expected life of the machine is 10 years. At the end of this period its scrap value is likely to be ₹10,000. the total cost of all the machines including new one was ₹90 lacs.

The other information is given as follows:

- (i) *Working hours of the machine for the year was 4,200 including 200 non-productive hours.*
- (ii) *Repairs and maintenance for the new machine during the year was ₹ 5,000.*
- (iii) *Insurance Premium was paid for all the machine ₹ 9,000.*
- (iv) *New machine consumes 8 units of electricity per hour, the rate per unit being ₹ 3.75*
- (v) *The new machine occupies area of the department. Rent of the department is 2,400 per month.*
- (vi) *Depreciation is charged on straight line basis*
- Compute machine hour rate for the new machine.*

Question No.: 3 (November 2012 exam – 8 Marks)

The following account balances and distribution of indirect charges are taken from the accounts of a manufacturing concern for the year ending on 31st March, 2012: (8 Marks)

Item	Total Amount	Production Departments			Service Departments	
		X (₹)	Y (₹)	Z (₹)	A (₹)	B (₹)
Indirect Material	1,25,000	20,000	30,000	45,000	25,000	5,000
Indirect Labour	2,60,000	45,000	50,000	70,000	60,000	35,000
Superintendent's Salary	96,000	-	-	96,000	-	-
Fuel & Heat	15,000					
Power	1,80,000					
Rent & Rates	1,50,000					
Insurance	18,000					
Meal Charges	60,000					
Depreciation	2,70,000					

The following departmental data are also available:

	Production Departments			Service Departments	
	X	Y	Z	A	B
Area (Sq. ft.)	4,400	4,000	3,000	2,400	1,200
Capital Value of Assets (₹)	4,00,000	6,00,000	5,00,000	1,00,000	2,00,000
Kilowatt Hours	3,500	4,000	3,000	1,500	-
Radiator Sections	20	40	60	50	30
No. of Employees	60	70	120	30	20

Expenses charged to the service departments are to be distributed to other departments by the following percentages:

	X	Y	Z	A	B
Department A	30	30	20	-	20
Department B	25	40	25	10	-

Prepare an overhead distribution statement to show the total overheads of production departments after re-apportioning service departments' overhead by using simultaneous equation method. Show all the calculations to the nearest rupee.

Question No.: 4 (November 2013 exam – 8 Marks)*Calculate Machine Hour Rate from the following particulars:*

Cost of Machine	-	₹ 25,00,000
Salvage Value	-	₹ 1,25,000
Estimated life of the machine	-	25,000 Hours
Working Hours (per annum)	-	3,000 Hours
Hours required for maintenance	-	400 Hours
Setting-up time required	-	8% of actual working hours

Additional Information:

- (i) Power 25 units @ ₹ 5 per unit per hour.
- (ii) Cost of repairs and maintenance ₹ 26,000 per annum.
- (iii) Chemicals required for operating the machine ₹ 2,600 per month.
- (iv) Overheads chargeable to the machine ₹ 18,000 per month.
- (v) Insurance Premium (per annum) 2% of the cost of machine
- (vi) No. of operators - 02 (looking after three other machines also)
- (vii) Salary per operator per month ₹ 18,500

(8 Marks)

Question No: 5 – May 2015 exam

A machine shop cost centre contains three machines of equal capacities. Three operators are employed on each machine, payable ₹ 20 per hour each. The factory works for 48 hours in a week which includes 4 hours set up time. The work is jointly done by operators. The operators are paid fully for the 48 hours. In addition, they are also paid a bonus of 10% of productive time. Costs are reported for this company on the basis of thirteen, four-weekly period.

The company, for the purpose of computing machine hour rate includes the direct wages of the operator and also recoups the factory overheads allocated to the machines. The following details of factory overheads applicable to the cost centres are available:

Original Cost of each machine	- ₹ 52,000
Depreciation on the original cost of the machine	- ₹ 10% p.a.
Maintenance & Repair per week per machine	- ₹ 60
Consumable Stores per week per machine	- ₹ 75
Power: 20 units per hour per machine	- 80 paise per unit

Actual direct machine hours worked in Department P₁:

On Product A – 6,100 hours, Product B – 4,150 hours.

Actual direct labour hours worked in Department P₂:

On Product A – 8,200 hours, Product B – 7,400 hours.

Costs actually incurred:

	Product A	Product B
Raw Materials	4,89,000	4,56,000
Wages	5,91,000	5,52,000

Factory Overheads:

Departments	P ₁	P ₂	S ₁	S ₂
Amount (₹)	2,31,000	2,04,000	60,000	48,000

You are required to:

- Compute the predetermined overhead rate for each production department.
- Prepare a Statement showing Budgeted and Actual costs for the month of July, 2016.

Question No.7 – May 2016 RTP

In an engineering company, the factory overheads are recovered on a fixed percentage basis on direct wages and the administration overheads are absorbed on a fixed percentage basis on factory cost.

The company has furnished the following data relating to two jobs undertaken by it in a period:

	Job 101 (₹)	Job 102 (₹)
Direct Materials	54,000	37,500
Direct Wages	42,000	30,000
Selling Price	1,66,650	1,28,250
Profit Percentage on total cost	10%	20%

Required:

- Computation of percentage recovery rates of factory overheads and administrative overheads.
- Calculation of the amount of factory overheads, administrative overheads and profit for each of the two jobs.
- Using the above recovery rates, fix the selling price of job 103. The additional data being.

Direct Materials	₹ 24,000
Direct Wages	₹ 20,000
Profit Percentage on Selling Price	12-1/2%

Question No.8 – November 2015 RTP

PQR manufacturers – a small scale enterprise, produces a single product and has adopted a policy to recover the production overheads of the factory by adopting a single blanket rate based on machine hours. The annual budgeted production overheads for the year 2015-16 are ₹ 44,00,000 and budgeted annual machine hours are 2,20,000.

For a period of first six months of the financial year 2015 -2016, following information were extracted from the books:

Actual production overheads	₹ 24,88,200
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Amount included in the production overheads:

Paid as per court's order	₹ 1,28,000
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Expenses of previous year booked in current year	₹ 1,200
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Paid to workers for strike period under an award	₹ 44,000
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Obsolete stores written off	₹ 6,700
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Production and sales data of the concern for the first six months are as under:

Production:

Finished goods	24,000 units
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Works-in-progress

(50% complete in every respect)	18,000 units
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Sale:

Finished goods	21,600 units
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The actual machine hours worked during the period were 1,16,000 hours. It is revealed from the analysis of information that $\frac{1}{4}$ of the under/ over absorption was due to defective production policies and the balance was attributable to increase/decrease in costs.

Required:

- Determine the amount of under/over absorption of production overheads for the six months period of 2015-16.
- Show the accounting treatment of under/ over absorption of production overheads, and
- Apportion the under/ over absorbed overheads over the items.

Question No.: 9 (November 2012 RTP)

NM Ltd. is a manufacturing company having three production departments X, Y and Z and two service departments P and Q. The following is the budget for the year 2012-13.

	Total (₹)	X (₹)	Y (₹)	Z (₹)	P (₹)	Q (₹)
Direct Materials		20,000	35,000	40,000	15,000	25,000
Direct wages		35,000	48,000	26,000	25,000	28,000
Factory rent	42,000					
Power	30,000					
Depreciation	24,000					
Other overheads	84,000					

Additional Information:

Area (Square feet)	1200	600	900	150	150
Capital value of assets (₹ in lakh)	15	30	15	10	5
Machine hours	1,500	3,000	4,200	1,200	900
Horse power of machines	120	80	40	30	30

A technical assessment of the apportionment of expenses of service departments is as under:

	X	Y	Z	P	Q
Service Department P	40%	20%	25%	-	15%
Service Department Q	55%	15%	10%	20%	-

You are required to compute:

- A statement showing distribution of overheads to various departments.
- A statement showing re-distribution of service department's expenses to production departments.

Question No.: 10 (November 2013 RTP)

Aditya Ltd. has three production departments P_1 , P_2 and P_3 and two service departments S_1 and S_2 .

The following data are extracted from the records of the Company for the month of May, 2013:

	(₹)
Rent and rates	1,23,500
General lighting	72,000
Indirect Wages	68,200
Power	85,000
Depreciation on machinery	3,25,000
Insurance of machinery	95,000

Other Information:

	P_1	P_2	P_3	S_1	S_2
Direct wages (₹)	84,000	66,000	72,000	24,000	6,000
Horse Power of Machines used	80	40	60	20	10
Cost of machinery (₹)	14,00,000	16,00,000	10,00,000	3,00,000	4,50,000
Floor space (Sq. ft)	3,000	3,500	4,000	1,000	500
Number of light points	30	20	20	15	10
Production hours worked	6,240	4,150	4,050	—	—

Expenses of the service departments S_1 and S_2 are reapportioned as below:

	P_1	P_2	P_3	S_1	S_2
S_1	30%	20%	30%	—	20%
S_2	40%	30%	15%	15%	—

Required:

- Compute overhead absorption rate per production hour of each production department.
- Determine the total cost of product X which is processed for manufacture in department P_1 , P_2 and P_3 for 5 hours, 3 hours and 4 hours respectively, given that its direct material cost is ₹ 1,215 and direct labour cost is ₹ 975.

Question No.: 11 (May 2014 RTP)

Arnav Ltd. has three production departments M, N and O and two service departments P and Q. The following particulars are available for the month of September, 2013:

	(₹)
Lease rental	35,000
Power & Fuel	4,20,000
Wages to factory supervisor	6,400
Electricity	5,600
Depreciation on machinery	16,100
Depreciation on building	18,000
Payroll expenses	21,000
Canteen expenses	28,000
ESI and Provident Fund Contribution	58,000

Followings are the further details available:

Particulars	M	N	O	P	Q
Floor space (square meter)	1,200	1,000	1,600	400	800
Light points (nos.)	42	52	32	18	16
Cost of machines (₹)	12,00,000	10,00,000	14,00,000	4,00,000	6,00,000
No. of employees (nos.)	48	52	45	15	25
Direct Wages (₹)	1,72,800	1,66,400	1,53,000	36,000	53,000
HP of Machines	150	180	120	-	-
Working hours (hours)	1,240	1,600	1,200	1,440	1,440

The expenses of service department are to be allocated in the following manner:

	M	N	O	P	Q
P	30%	35%	25%	-	10%
Q	40%	25%	20%	15%	-

You are required to calculate the overhead absorption rate per hour in respect of the three production departments.

Question No.:12 (November 2014 RTP)

Vision Ltd. manufactures luggage trolleys for airports. The factory, in which the company undertakes all of its production, has two production departments- 'Fabrication' and 'Assembly', and two service departments- 'Stores' and 'Maintenance'.

The following information have been extracted from the company's budget for the financial year ended 31st March, 2014:

Allocated Overhead Costs	₹
Fabrication Department	15,52,000
Assembly Department	7,44,000
Stores Department	2,36,000
Maintenance Department	1,96,000
Other Overheads	₹
Factory rent	15,28,000
Factory building insurance	1,72,000
Plant & machinery insurance	1,96,000
Plant & Machinery Depreciation	2,65,000
Subsidy for staffs' canteen	4,48,000

Direct Costs	₹	₹
Fabrication Department:		
Material	63,26,000	
Labour	8,62,000	71,88,000
Assembly Department:		
Material	1,42,000	
Labour	13,06,000	14,48,000

The following additional information is also provided:

	Fabrication Department	Assembly Department	Stores Department	Maintenance Department
Floor area (square meters)	24,000	10,000	2,500	3,500
Value of plant & machinery (₹)	16,50,000	7,50,000	75,000	1,75,000
No. of stores requisitions	3,600	1,400	---	---
Maintenance hours required	2,800	2,300	400	---
No. of employees	120	80	38	12
Machine hours	30,00,000	60,000		
Labour hours	70,000	26,00,000		

Required:

- Prepare a table showing the distribution of overhead costs of the two service departments to the two production departments using step method; and
- Calculate the most appropriate overhead recovery rate for each department.

- (c) Using the rates calculated in part (b) above, calculate the full production costs of the following job order:

Job number IGI2014

Direct Materials	₹ 1,15,200
Direct Labour:	
Fabrication Department	240 hours @ ₹ 18 per hour
Assembly Department	180 hours @ ₹ 18 per hour
Machine hours required:	
Fabrication Department	210 hours
Assembly Department	150 hours

Question No.: 13 – May 2015 RTP, Nov 2017 RTP

The Union Ltd. has the following account balances and distribution of direct charges on 31st March, 2014.

	Total	Production Depts.		Service Depts.	
		Machine Shop	Packing	General Plant	Stores
Allocated Overheads:	(₹)	(₹)	(₹)	(₹)	(₹)
Indirect labour	29,000	8,000	6,000	4,000	11,000
Maintenance Material	9,900	3,400	1,600	2,100	2,800
Misc. supplies	5,900	1,500	2,900	900	600
Supervisor's salary	16,000	--	--	16,000	--
Cost & payroll salary	80,000	--	--	80,000	--

Overheads to be apportioned:

Power	78,000
Rent	72,000
Fuel and Heat	60,000
Insurance	12,000
Taxes	8,400
Depreciation	1,20,000

The following data were compiled by means of the factory survey made in the previous year:

	Floor Space	Radiator Section	No. of employees	Investment	H.P. hours
Machine Shop	2,000 Sq. ft.	45	20	8,00,000	3,500
Packing	800 Sq. ft.	90	12	2,40,000	500

General Plant	400 Sq. ft.	30	4	80,000	-
Stores & maintenance	1,600 Sq. ft.	60	8	1,60,000	1,000

Expenses charged to the stores departments are to be distributed to the other departments by the following percentages:

Machine shop 50%; Packing 20%; General Plant 30%;

General Plant overheads is distributed on the basis of number of employees.

- (a) Prepare an overhead distribution statement with supporting schedules to show computations and basis of distribution.
- (b) Determine the service department distribution by simultaneous equation method.

CHAPTER 5 – NON INTEGRATED ACCOUNTS

Question No.1 – November 2016

The Trading and Profit and Loss Account of a company for the year ended 31-03-2016 is as under:

Trading and Profit and Loss Account

	₹		₹
To Materials	26,80,000	By Sales (50,000 units)	62,00,000
To Wages	17,80,000	By Closing Stock (2,000 units)	1,50,000
To Factory Expenses	9,50,000	By Dividend received	20,000
To Administrative Expenses	4,80,200		
To Selling Expenses	2,50,000		
To Preliminary Expenses written off	50,000		
To Net Profit	1,79,800		
	63,70,000		63,70,000

In the Cost Accounts:

- Factory expenses have been allocated to production at 20% of Prime Cost.
- Administrative expenses absorbed at 10% of factory cost.
- Selling expenses charged at ₹ 10 per unit sold.

Prepare the Costing Profit and Loss Account of the company and reconcile the Profit/Loss with the profit as shown in the Financial Accounts. **(8 Marks)**

Question No.2 – May 2016

The following information is available from a company's records for March, 2016:

- Opening Balance of Creditors Account ₹ 25,000
- Closing Balance of Creditors Account ₹ 40,000
- Payment made to Creditors ₹ 5,80,000
- Opening Balance of Stores Ledger Control Account ₹ 40,000
- Closing Balance of Stores Ledger Control Account ₹ 65,000
- Wages paid (for 8000 hours) 20% relate to indirect workers ₹ 4,00,000
- Various indirect expenses incurred ₹ 60,000
- Opening balance of WIP control account ₹ 50,000
- Inventory of WIP at the end of the month includes material worth ₹ 35,000 on which 400 labour hours have been booked.
- Factory overhead is charged to production at budgeted rate based on direct labour hours.
- Budgeted overhead cost is ₹ 20,80,000 for budgeted direct labour hours 1,04,000.

You are required to prepare Creditors A/c, Stores Ledger Control A/c, WIP Control A/c, Wages Control A/c and Factory Overhead Control A/c. (8 Marks)

Question No.: 3 (November 2012 exam – 8 Marks)

R Limited showed a net loss of ₹ 35,400 as per their cost accounts for the year ended 31st March, 2012. However, the financial accounts disclosed a net profit of ₹ 67,800 for the same period. The following information were revealed as a result of scrutiny of the figures of cost accounts and financial accounts: (8 Marks)

	(₹)
(i) Administrative overhead under recovered	25,500
(ii) Factory overhead over recovered	1,35,000
(iii) Depreciation under charged in Cost Accounts	26,000
(iv) Dividend received	20,000
(v) Loss due to obsolescence charged in Financial Accounts	16,800
(vi) Income tax provided	43,600
(vii) Bank interest credited in Financial Accounts	13,600
(viii) Value of opening stock:	
In Cost Accounts	1,65,000
In Financial Accounts	1,45,000
(ix) Value of closing stock:	
In Cost Accounts	1,25,500
In Financial Accounts	1,32,000
(x) Goodwill written-off in Financial Accounts	25,000
(xi) Notional rent of own premises charged in Cost Accounts	60,000
(xii) Provision for doubtful debts in Financial Accounts	15,000

Prepare a reconciliation statement by taking costing net loss as base.

Question No.: 4 (November 2013 exam – 5 Marks)

Journalise the following transactions assuming cost and financial accounts are integrated :

	₹
(i) Materials issued :	
Direct	3,25,000
Indirect	1,15,000
(ii) Allocation of wages (25% indirect)	6,50,000
(iii) Under/Over absorbed overheads:	
Factory (Over)	2,50,000
Administration (Under)	1,75,000
(iv) Payment to Sundry Creditors	1,50,000
(v) Collection from Sundry Debtors	2,00,000

Question No.: 5 (May 2014 exam – 5 Marks)

A manufacturing company has disclosed net loss of ₹ 48,700 as per their cost accounting records for the year ended 31st March, 2014. However their financial accounting records disclosed net profit of ₹ 35,400 for the same period. A scrutiny of data of both the sets of books of accounts revealed the following informations:

	₹
(i) Factory overheads under absorbed	30,500
(ii) Administrative overheads over absorbed	65,000
(iii) Depreciation charged in financial accounts	2,25,000
(iv) Depreciation charged in cost accounts	2,70,000
(v) Income-tax provision	52,400
(vi) Transfer fee (credited in financial accounts)	10,200
(vii) Obsolescence loss charged in financial accounts	20,700
(viii) Notional rent of own premises charged in cost accounts	54,000
(ix) Value of opening stock:	
(a) in cost accounts	1,38,000
(b) in financial accounts	1,15,000
(x) Value of closing stock:	
(a) in cost accounts	1,22,000
(b) in financial accounts	1,12,500

Prepare a Memorandum Reconciliation Account by taking costing loss as base.

Question No.6 – November 2014 exam, May 2017

Following information have been extracted from the cost records of XYZ Pvt. Ltd:

	₹
Stores:	
Opening balance	54,000
Purchases	2,88,000
Transfer from WIP	1,44,000
Issue to WIP	2,88,000
Issue for repairs	36,000
Deficiency found in stock	10,800
Work-in-progress:	
Opening balance	1,08,000
Direct wages applied	1,08,000
Overheads charged	4,32,000
Closing balance	72,000
Finished Production:	
Entire production is sold at a profit of 15% on cost at WIP	
Wages paid	1,26,000
Overheads incurred	4,50,000

Draw the Stores Ledger Control Account, Work-in-Progress Control Account, Overheads Control Account and Costing Profit and Loss Account. (8 Marks)

Question No.7 – May 2016 RTP

A manufacturing company disclosed a net loss of ₹ 3,47,000 as per their Cost Accounts for the year ended March 31, 2016. The Financial Accounts however disclosed a net loss of ₹ 5,10,000 for the same period. The following information was revealed as a result of scrutiny of the figures of both the sets of accounts.

	(₹)
(i) Factory Overheads under-absorbed	40,000
(ii) Administration Overheads over-absorbed	60,000
(iii) Depreciation charged in Financial Accounts	3,25,000
(iv) Depreciation charged in Cost Accounts	2,75,000

(v) Interest on investments not included in Cost Accounts	96,000
(vi) Income-tax provided	54,000
(vii) Interest on loan funds in Financial Accounts	2,45,000
(viii) Transfer fees (credit in financial books)	24,000
(ix) Stores adjustment (credit in financial books)	14,000
(x) Dividend received	32,000

Prepare a memorandum Reconciliation Account.

Question No.8 - November 2015 RTP

As of 31st March, 2015, the following balances existed in a firm's cost ledger, which is maintained separately on a double entry basis:

	Debit(₹)	Credit(₹)
Stores Ledger Control A/c	3,20,000	—
Work-in-progress Control A/c	1,52,000	—
Finished Goods Control A/c	2,56,000	—
Manufacturing Overhead Control A/c	—	28,000
Cost Ledger Control A/c	—	7,00,000
	7,28,000	7,28,000

During the next quarter, the following items arose:

	(₹)
Finished Product (at cost)	2,35,500
Manufacturing overhead incurred	91,000
Raw material purchased	1,36,000
Factory wages	48,000
Indirect labour	20,600
Cost of sales	1,68,000
Materials issued to production	1,26,000
Sales returned (at cost)	8,000
Materials returned to suppliers	11,000
Manufacturing overhead charged to production	86,000

You are required to prepare the Cost Ledger Control A/c, Stores Ledger Control A/c, Work-in-progress Control A/c, Finished Stock Ledger Control A/c, Manufacturing Overhead Control A/c, Wages Control A/c, Cost of Sales A/c and the Trial Balance at the end of the quarter as per costing records.

Question No.: 9 (November 2012 RTP)

The following balances were extracted from a company's ledger as on 31st Dec 2011

	₹	₹
Raw materials control account	42,000	
Work-in-progress control account	16,000	
Finished stock control account	24,000	
Nominal ledger control account		82,000
	82,000	82,000

Further transactions took place during the following quarter as follows:

	₹
Factory overhead-allocated to WIP	11,500
Goods finished-at cost	38,800
Raw materials purchased	32,400
Direct wages-allocated to WIP	19,300
Cost of goods sold	46,000
Raw materials-issued to production	21,000
Raw materials-credited by suppliers	1,200
Inventory audit-raw material losses	1,000
WIP rejected (with no scrap value)	1,300
Customer's returns(at cost) of finished goods	3,400

Prepare all the Ledger Accounts in Cost Ledger

Question No.: 10 (May 2013 RTP)

The following incomplete accounts are furnished to you for the month ended 31st March, 2013.

Dr.	Stores Control Account				Cr.
1.03.13	To Balance b/d	54,000			

Dr.	Work in Progress Control Account				Cr.
1.03.13	To Balance b/d	6,000			

Dr.	Finished Goods Control Account				Cr.
1.03.13	To Balance b/d	75,000			

Dr.	Factory Overhead Control Account				Cr.
	Total debits for March, 13	45,000			

Dr.	Fixed Overhead Applied Account				Cr.

Dr.	Cost of Goods Sold Account				Cr.

Dr.	Creditors Account				Cr.
			1.03.13	By Balance b/d	30,000

Additional Information:

- The factory overheads are applied by using a budgeted rate based on direct labour hours. The budget for overheads for 2012-13 is ₹ 6,75,000 and budget of direct labour hours is 4,50,000.
- The balance in the account of creditors on 31.03.2013 is ₹ 15,000 and payments made to creditors in March, 2013 amount to ₹ 1,05,000.
- The finished goods inventory as on 31st March, 2013 is ₹ 66,000.
- The cost of goods sold during the month was ₹ 1,95,000.
- on 31st March, 2013, there was only one unfinished job in the factory. The cost records show that ₹ 3,000 (1,200 direct labour hours) of direct labour cost and ₹ 6,000 of direct material cost had been charged.
- A total of 28,200 direct labour hours were worked in March, 2013. All factory workers earn same rate of pay.
- All actual factory overheads incurred in March, 2013 have been posted.

You are required to find:

- Materials purchased during March, 2013.
- Cost of goods completed in March, 2013.
- Overheads applied to production in March, 2013.
- Balance of work in progress on 31st March, 2013.
- Direct materials consumed during March, 2013.
- Balance of Stores Control Account on 31st March, 2013.
- Over-absorbed or under-absorbed overheads for March, 2013.

Question No.: 11 (November 2013 RTP, November 2017 RTP)

The financial books of a company reveal the following data for the year ended 31st March, 2013:

Opening Stock:	(₹)
Finished goods 625 units	53,125
Work-in-process	46,000
01.04.2012 to 31.03.2013	
Raw materials consumed	8,40,000
Direct Labour	6,10,000
Factory overheads	4,22,000
Administration overheads	1,98,000
Dividend paid	1,22,000
Bad Debts	18,000
Selling and Distribution Overheads	72,000
Interest received	38,000
Rent received	46,000
Sales 12,615 units	22,80,000
Closing Stock: Finished goods 415 units	45,650
Work-in-process	41,200

The cost records provide as under:

- Factory overheads are absorbed at 70% of direct wages.
- Administration overheads are recovered at 15% of factory cost.
 - Selling and distribution overheads are charged at ₹ 3 per unit sold.
 - Opening Stock of finished goods is valued at ₹ 120 per unit.
 - The company values work-in-process at factory cost for both Financial and Cost Profit Reporting.

Required:

- (i) Prepare statements for the year ended 31st March, 2013 show
 - the profit as per financial records
 - the profit as per costing records.
- (ii) Present a statement reconciling the profit as per costing records with the profit as per Financial Records.

CHAPTER 6 – JOB COSTING & BATCH COSTING

Question No.1 – November 2015

M.L. Auto Ltd. is a manufacturer of auto components and the details of its expenses for the year 2014 are given below:

	(₹)
(i) Opening Stock of Material	1,50,000
(ii) Closing Stock of Material	2,00,000
(iii) Purchase of Material	18,50,000
(iv) Direct Labour	9,50,000
(v) Factory Overhead	3,80,000
(vi) Administrative Overhead	2,50,400

During 2015, the company has received an order from a car manufacturer where it estimates that the cost of material and labour will be ₹ 8,00,000 and ₹ 4,50,000 respectively. M.L. Auto Ltd. charges factory overhead as a percentage of direct labour and administrative overhead as a percentage of factory cost based on previous year's cost.

Cost of delivery of the components at customer's premises is estimated at ₹ 45,000.

You are required to:

- (i) Calculate the overhead recovery rates based on actual costs for 2014.*
- (ii) Prepare a detailed cost statement for the order received in 2015 and the price to be quoted if the company wants to earn a profit of 10% on sales. (8 Marks)*

CHAPTER 7 – CONTRACT COSTING

Question No.1 – November 2015

PVK Constructions commenced a contract on 1st April, 2014. Total contract value was ₹ 100 lakhs. The contract is expected to be completed by 31st December, 2016. Actual expenditure during the period 1st April, 2014 to 31st March, 2015 and estimated expenditure for the period 1st April, 2015 to 31st December, 2016 are as follows:

	Actual (₹)	Estimated (₹)
	1 st April, 2014 to 31 st March, 2015	1 st April, 2015 to 31 st Dec. 2016
Material issued	15,30,000	21,00,000
Direct Wages paid	10,12,500	12,25,000
Direct Wages outstanding	80,000	1,15,000
Plant purchased	7,50,000	-
Expenses paid	3,25,000	5,40,000
Prepaid Expenses	68,000	-
Site office expenses	3,00,000	-

Part of the material procured for the contract was unsuitable and was sold for ₹ 2,40,000 (cost being ₹ 2,55,000) and a part of plant was scrapped and disposed of for ₹ 80,000. The value of plant at site on 31st March, 2015 was ₹ 2,50,000 and the value of material at site was ₹ 73,000. Cash received on account to date was ₹ 36,00,000, representing 80% of the work certified. The cost of work uncertified was valued at ₹ 5,40,000.

Estimated further expenditure for completion of contract is as follows:

- An additional amount of ₹ 4,62,500 would have to be spent on the plant and the residual value of the plant on the completion of the contract would be ₹ 67,500.
- Site office expenses would be the same amount per month as charged in the previous year.
- An amount of ₹ 1,57,500 would have to be incurred towards consultancy charges.

Required:

Prepare Contract Account and calculate estimated total profit on this contract. (8 Marks)

Question No.: 2 (May 2012 exam – 8 Marks)

A contractor commenced a contract on 1-7-2011. The costing records concerning the said contract reveal the following information as on 31-3-2012.

	Amount (₹)
Material sent to site	7,74,300
Labour paid	10,79,000
Labour outstanding as on 31-3-2012	1,02,500
Salary to Engineer	20,500 per month
Cost of plant sent to site (1-7-2011)	7,71,000
Salary to Supervisor (3/4 time devoted to contract)	9,000 per month
Administration & other expenses	4,60,600
Prepaid Administration expenses	10,000
Material in hand at site as on 31-3-2012	75,800

Plant used for the contract has an estimated life of 7 years with residual value at the end of life ₹ 50,000. Some of material costing ₹ 13,500 was found unsuitable and sold for ₹ 10,000. Contract price was ₹ 45,00,000. On 31-3-2012 two third of the contract was completed. The architect issued certificate covering 50% of the contract price and contractor has been paid ₹ 20,00,000 on account. Depreciation on plant is charged on straight line basis.

Prepare Contract Account.

(8 Marks)

Question No.: 3 (November 2012 exam – 4 Marks)

From the following particulars compute a conservative estimate of profit by 4 methods on a contract which has 80 percent complete:

(4 Marks)

	₹
Total expenditure to date	8,50,000
Estimate further expenditure to complete the contract	1,70,000
Contract Price	15,30,000
Work Certified	10,00,000
Work not certified	85,000
Cash received	8,16,000

Question No.: 4 (May 2014 exam – 8 Marks)

M/s ABID Constructions undertook a contract at a price of ₹ 171.00 lacs. The relevant data for the year ended 31st March, 2014 are as under:

	(₹000)
Material issued at site	7700
Direct Wages paid	3300
Site office cost	550
Material return to store	175
Work certified	12650
Work uncertified	225

<i>Progress Payment Received</i>	<i>10120</i>
<i>Prepaid site office cost as on 31-03-2014</i>	<i>50</i>
<i>Direct wages outstanding as on 31-03-2014</i>	<i>100</i>
<i>Material at site as on 31-03-2014</i>	<i>110</i>

Additional Information:

- (a) A plant was purchased for the contract at ₹ 8,00,000 on 01-12-2013.
 (b) Depreciation @ 15% per annum is to be charged.
 (c) Material which cost ₹ 1,30,000 was destroyed by fire.

Prepare:

- (i) Contract Account for the year ended 31st March, 2014 and compute the profit to be taken to the Profit & Loss Account.
 (ii) Account of Contractee.
 (iii) Profit & Loss Account showing the relevant items.
 (iv) Balance Sheet showing the relevant items. (8 Marks)

Question No.: 5 – November 2014 exam

Z Limited obtained a contract No. 999 for ₹ 50 lacs. The following details are available in respect of this contract for the year ended March 31, 2014:

	₹
Materials purchased	1,60,000
Materials issued from stores	5,00,000
Wages and salaries paid	7,00,000
Drawing and maps	60,000
Sundry expenses	15,000
Electricity charges	25,000
Plant hire expenses	60,000
Sub-contract cost	20,000
Materials returned to stores	30,000
Materials returned to suppliers	20,000

The following balances relating to the contract No. 999 for the year ended on March 31, 2013 and March 31, 2014 are available:

	as on 31 st March, 2013	as on 31 st March, 2014
Work certified	12,00,000	35,00,000
Work uncertified	20,000	40,000
Materials at site	15,000	30,000
Wages outstanding	10,000	20,000

The contractor receives 75% of work certified in cash.

Prepare Contract Account and Contractee's Account.

(8 Marks)

Question No.6 – May 2017 RTP

The following details have been extracted from the books of DKG Construction LLP, which closes its books on 31st March every year.

	Contract 101	Contract 102
Date of commencement	1 st April, 2015	1 st December, 2015
Expected date of completion	31 st September, 2016	31 st December, 2016
	Amount (₹'000)	Amount (₹'000)
Contract price	4,000	1,100
Material issued to construction site	1,400	300
Material returned to store	160	60
Plant & Machinery sent to construction site	2,000	300
Inter-contract material transfer	(80)	80
Materials at site on 31 st March, 2016	150	30
Plant hire charges	400	60
Wages paid to workers	600	540
Overhead apportioned	150	36
Other direct expenses	50	8
Value of work certified	3,000	750
Cost of work not certified	320	40
Progress payment received from contractees	2,880	700
Estimated cost of completion	270	220

Depreciation is charged on plant and machinery @ 15% p.a. using straight line method.

Required:

Prepare contract account for each contract using columnar format, showing Cost of work certified and Notional profit / loss on each contract.

Question No.7 – November 2016 RTP

ABC Construction Ltd. has started a contract on 1st April 2015. The Trial balance as on 31st March 2016 showed the following balances:

Particulars	Dr. (₹)	Cr. (₹)
Paid up share capital		1,75,00,000
Land and buildings	46,00,000	
Machinery at cost (80% at site)	36,00,000	
Cash and bank	30,000	
Materials at cost	25,26,000	

Creditors for materials		10,30,600
Direct wages	13,28,000	
Site expenses	9,60,000	
Vehicles	32,20,000	
Furniture	3,22,000	
Office equipments	6,40,000	
Postage and Stationery	29,600	
Office expenses	6,26,000	
Rates and taxes	25,600	
Fuel and power	8,46,000	
Outstanding wages		2,24,000
Advance rates and taxes	1,400	
	1,87,54,600	1,87,54,600

The contract price is ₹ 2,50,00,000 and work certified is ₹ 1,00,00,000. The cost of work uncertified is ₹ 12,00,000. Machinery costing ₹ 2,00,000 was returned to stores at the end of the year. Stock of material at site on 31st March 2016 was of the value of ₹ 50,000. Depreciation on Machinery, Vehicles and furniture are 10%, 20% and 15% respectively.

You are required to calculate the profit from the contract.

Question No.8 – May 2016 RTP

A contractor commenced a building contract on October 1, 2013. The contract price is ₹ 4,40,000. The following data pertaining to the contract for the year 2014-15 has been compiled from his books and is as under:

		(₹)
April, 2014	Work-in-progress not certified	55,000
	Materials at site	2,000
2014-15	Expenses incurred:	
	Materials issued	1,12,000
	Wages paid	1,08,000
	Hire of plant	20,000
	Other expenses	34,000
March 31, 2015	Materials at site	4,000
	Work-in-progress: Not certified	8,000
	Work-in-progress: Certified	4,05,000

The cash received represents 80% of work certified. It has been estimated that further costs to complete the contract will be ₹23,000 including the materials at site as on March 31, 2015.

Required

Determine the profit on the contract for the year 2014-15 on prudent basis, which has to be credited to Costing P/L A/c.

Question No.: 9 (May 2013 RTP)

Giant Construction Ltd. has been constructing a flyover for 15 months and is under progress. The following information relating to the work on the contract has been prepared for the period ended 31st March, 2013.

	Amount (₹)
Contract price	65,00,000
Value of work certified at the end of the year	57,20,000
Cost of work not yet certified at the end of the year	1,20,000
Opening balances:	
Cost of work completed	8,00,000
Materials on site	80,000
Costs incurred during the year:	
Material delivered to site	15,90,000
Wages	14,95,000
Hire of plant	2,86,000
Other expenses	2,30,000
Closing balance: Material on site	40,000

As soon as materials are delivered to the site, they are charged to the contract account. A record is kept on actual use basis, periodically a stock verification is made and any discrepancy between book stock and physical stock is transferred to a general contract material discrepancy account. The stock verification at the year end revealed a stock shortage of ₹ 15,000.

In addition to the direct charges listed above, general overheads are charged to contracts at 5% of the value of work certified. General overheads of ₹ 35,000 had been absorbed into the cost of work completed at the beginning of the year.

It has been estimated that further costs to complete the contract will be ₹ 5,72,000. This estimate includes the cost of materials on site at the end of the year (31.3.2013) and also a provision for rectification.

Required:

- Determine profitability of the above contract and recommend how much profit should be taken for the year just ended. (Provide a detailed schedule of costs).
- State how your recommendation in (i) would be affected if the contract price was ₹ 80,00,000 (rather than ₹ 65,00,000) and if no estimate has been made of costs to completion.

Question No.: 10 (May 2014 RTP)

Hut-to-Palace Ltd. undertook a contract in last year. In the agreement between the Hut-to-Palace Ltd. and the contractee, there is a clause stating that Hut-to-Palace Ltd. will receive total cost plus 40% as contract consideration. The following are the details of the contract as on 31st March, 2014:

	(₹)
Total expenditure to date	17,64,525
Estimated further expenditure to complete the contract	8,38,645
Value of work certified	21,07,500
Cost of work not certified	3,11,075
Progress payment received from the contractee	14,75,250

From the above information calculate the

- Conservative estimate of profit for the management of Hut-to-Palace Ltd.
- What would be the estimated profit from the contract if management of Hut-to-Palace Ltd has come to know that the contractee has liquidity crunch and it is not able to pay further payments.

Question No.: 11 – May 2015 RTP

Dream house (P) Ltd. is engaged in building two residential housing projects in the city. Particulars related to two housing projects are as below:

	HP-1 (₹)	HP-2 (₹)
Work in Progress on 1 st April 2013	7,80,000	2,80,000
Materials Purchased	6,20,000	8,10,000
Land purchased near to the site to open an office	-	12,00,000
Brokerage and registration fee paid on the above purchase	-	60,000
Wages paid	85,000	62,000
Wages outstanding as on 31 st March, 2014	12,000	8,400
Donation paid to local clubs	5,000	2,500
Plant hire charges paid for three years effecting from 1 st April 2013	72,000	57,000
Value of materials at site as on 31 st March, 2014	47,000	52,000
Contract price of the projects	48,00,000	36,00,000
Value of work certified	20,50,000	16,10,000
Work not certified	1,90,000	1,40,000

A concrete mixture machine was bought on 1st April 2013 for ₹ 8,20,000 and used for 180 days in HP-1 and for 100 days in HP-2. Depreciation is provided @ 15% p.a. (this machine can be used for any other projects)

As per the contract agreement contractee shall retain 20% of work certified as retention money.

Prepare contract account for the two housing projects showing the profit or loss on each project for the year ended 31st March, 2014.

Question No.12 – November 2017 RTP

G. Constructions has undertaken three separate building contracts. Information relating to these contracts for the year 2016-17 are as under:

	Contract –I (Amount in ₹'000)	Contract –II (Amount in ₹'000)	Contract –III (Amount in ₹'000)
Value of contract	17,500	14,500	24,500
Balance as on 01-04-2016:			
Work completed and certified	--	4,100	8,150
Materials at site	--	220	310
Plant & Machinery (WDV)	--	770	3,760
Wages outstanding	--	48	104
Profit transferred to Costing P/L A/c.	--	--	350
Transaction during the year:			
Materials issued to the sites	870	2,150	4,020
Wages paid to workers	450	1,160	2,180
Salary to site staffs	90	85	135
Travelling and other expenses	18	24	32
Plants issued to sites	910	240	680
Apportionment of Head office expenses	110	90	126
Balance as on 31-03-2017:			
Materials at site	215	152	12
Plant & Machinery (WDV)	728	808	3,552
Wages outstanding	52	98	146
Value of work certified	2,000	8,600	24,000
Cost of work not certified	800	452	560

As per the contract agreement 15% of the certified value of the contract is kept by the contractees as retention money. The Contract-III is scheduled to be completed in the

coming months, however, this contract required a further estimated cost of ₹ 7,20,000 to get it completed.

Required:

- (a) Prepare Contract Statement for each of the three contracts and calculate the notional/ estimated profit/ loss
- (b) Calculate the profit/ loss to be transferred to Costing Profit & Loss Account for internal managerial purpose.

CHAPTER 8 - OPERATING COSTING

Question No.1 – November 2016

Royal transport company has been given a 50 kilometre long route to run 6 buses. The cost of each bus is ₹ 7,50,000. The buses will make 3 round trips per day carrying on an average 75 percent passengers of their seating capacity. The seating capacity of each bus is 48 passengers. The buses will run on an average 25 days in a month. The other information for the year 2016-17 is given below:

Garage Rent	₹ 6,000 per month
Annual Repairs & Maintenance	₹ 24,000 each bus
Salaries of 6 drivers	₹ 4,000 each per month
Wages of 6 conductors	₹ 1,600 each per month
Wages of 6 cleaners	₹ 1,000 each per month

Manager's salary	₹ 10,000 per month
Road Tax, Permit fee, etc.	₹ 6,000 for a quarter
Office expenses	₹ 2,500 per month
Cost of diesel per litre	₹ 66
Kilometer run per litre for each bus	6 kilometres
Annual Depreciation	20% of cost
Annual Insurance	4% of cost
Engine oils & lubricants (for 1,000 kilometres)	₹ 2,000

You are required to calculate the bus fare to be charged from each passenger per kilometer (upto four decimal points), if the company wants to earn profit of $33\frac{1}{3}$ percent on taking (total receipts from passengers).

(8 Marks)

Question No.: 2 (November 2013 exam – 8 Marks)

The following information relates to a bus operator:

Cost of the bus	₹ 18,00,000
Insurance charges	3% p.a.
Manager-cum accountant's salary	₹ 8,000 p.m.

Annual Tax	₹	50,000
Garage Rent	₹	2,500 p.m.
Annual repair & maintenance	₹	1,50,000
Expected life of the bus		15 years
Scrap value at the end of 15 years	₹	1,20,000
Driver's salary	₹	15,000 p.m.
Conductor's salary	₹	12,000 p.m.
Stationery	₹	500 p.m.
Engine oil, lubricants (for 1200 kms.)	₹	2,500
Diesel and oil (for 10 kms.)	₹	52
Commission to driver and conductor (shared equally)		10% of collections
Route distance		20 km long

The bus will make 3 round trips for carrying on the average 40 passengers in each trip. Assume 15% profit on collections. The bus will work on the average 25 days in a month.

Calculate fare for passenger-km. (8 Marks)

Question No.3 – May 2015 exam

A mini-bus, having a capacity of 32 passengers, operates between two places - 'A' and 'B'. The distance between the place 'A' and place 'B' is 30 km. The bus makes 10 round trips in a day for 25 days in a month. On an average, the occupancy ratio is 70% and is expected throughout the year.

The details of other expenses are as under:

	Amount (₹)	
Insurance	15,600	Per annum
Garage Rent	2,400	Per quarter
Road Tax	5,000	Per annum
Repairs	4,800	Per quarter
Salary of operating staff	7,200	Per month
Tyres and Tubes	3,600	Per quarter
Diesel: (one litre is consumed for every 5 km)	13	Per litre
Oil and Sundries	22	Per 100 km run
Depreciation	68,000	Per annum

Passenger tax @ 22% on total taking is to be levied and bus operator requires a profit of 25% on total taking.

Prepare operating cost statement on the annual basis and find out the cost per passenger kilometer and one way fare per passenger. (8 Marks)

Question No.4 – May 2017 RTP

Happy Transport Service is a Delhi based national goods transport service provider, owning four trucks for this purpose. The cost of running and maintaining these trucks are as follows:

Particulars	Amount
Diesel cost	₹13.75 per km.
Engine oil	₹ 4,200 for every 13,000 km.
Repair and maintenance	₹ 12,000 for every 10,000 km.
Driver's salary	₹18,000 per truck per month
Cleaner's salary	₹7,500 per truck per month
Supervision and other general expenses	₹12,000 per month
Cost of loading of goods	₹150 per Metric Ton (MT)

Each trucks were purchased for ₹ 20 lakhs with an estimated life of 7,20,000 km.

During the next month, it is expecting 6 bookings, the details are as follows:

Sl. No.	Journey	Distance in km	Weight- Up (in MT)	Weight- Down (in MT)
1.	Delhi to Kochi	2,700	14	6
2.	Delhi to Guwahati	1,890	12	0
3.	Delhi to Vijayawada	1,840	15	0
4.	Delhi to Varanasi	815	10	0
5.	Delhi to Asansol	1,280	12	4
6.	Delhi to Chennai	2,185	10	8
	Total	10,710	73	18

Required

- Calculate the total absolute Ton-km for the vehicles.
- Calculate the cost per ton-km.

Question No.5 – November 2016 RTP

P Ltd. distributes its goods to dealers using a delivery van. The dealers' premises are 40 kilometre away from the company's office. The van has a capacity of 10 tonnes and makes the journey twice a day fully loaded on the outward journeys and empty on return journey. The following information is available for a four weekly period during the year 2016:

Diesel consumption	10 kilometre per litre
Diesel cost	₹48 per litre
Lubricant oil	₹600 per week

Drivers salary	₹12,000 per month
Repairs & Maintenance	₹1,800 per month
Garage rent	₹4,800 per months
Cost of van (excluding tyres)	₹16,00,000
Life of van	3,80,000 kilometres
Insurance	₹5,400 per annum
Cost of tyres	₹22,000
Life of tyres	80,000 kilometres
Estimated sale value of van at end of its life	₹2,40,000
Vehicle permit fee	₹3,600 per annum
Other overhead cost	₹66,000 per annum

The van operates five-day a week.

Required:

- A statement to show the total monthly cost of operating the vehicle.
- Calculate the operating cost per kilometre and per tonne kilometre.

Question No.6 – May 2016 RTP

JRP Resorts (P) Ltd. offers three types of rooms to its guests, viz Deluxe room, Super Deluxe room and Luxury Suite. You are required to ascertain the tariff to be charged to the customers for different types of rooms on the basis of following information:

Type of Room	Number of Rooms	Occupancy
Deluxe Room	100	90%
Super Deluxe Room	60	75%
Luxury Suite	40	60%

Rent of 'Super Deluxe' room is to be fixed at 2 times of 'Deluxe room' and that of 'Luxury Suite' is 3 times of 'Deluxe room'. Annual expenses are as follows:

Particulars	Amount (₹in lakhs)
Staff salaries	680.00
Lighting, Heating and Power	300.00
Repairs, Maintenance and Renovation	180.00
Linen	30.00
Laundry charges	24.00
Interior decoration	75.00
Sundries	30.28

An attendant for each room was provided when the room was occupied and he was paid ₹ 500 per day towards wages. Further, depreciation is to be provided on building @ 5% on ₹ 900 lakhs, furniture and fixtures @ 10% on ₹ 90 lakhs and air conditioners @ 10% on ₹ 75 lakhs.

Profit is to be provided @ 25% on total taking and assume 360 days in a year.

Question No.: 7 (November 2012 RTP)

An Executive manager spends ₹10.00 per kilometer on taxi fares for his office work. He is considering two other alternatives, the purchase of a new Nano car or a second hand Innova car. The estimated cost figures are as follows:

Items	New Nano Car	Old Innova Car
Purchase Price	₹1,35,000	₹1,60,000
Sale price, after 5 years	₹25,000	₹40,000
Repairs and servicing per annum	₹12,000	₹18,000
Taxes and insurance per annum	₹3,200	₹2,400
Petrol consumption per liter	20 km	15 km
Petrol/ Diesel price, per liter	₹68.00	₹42.00

He estimates that he has to travel 10,800 km annually. Which of the three alternatives will be economical? If his official visit increases and he has to do 18,000 km per annum what should be his decision?

At how many km per annum will the cost of the two cars break-even and why? Ignore interest and income-tax.

Question No.: 8 (November 2013 RTP)

Arnav Automobiles distribute its goods to a regional dealer using a single lorry. The dealer's premises are 20 kilometers away by road. The lorry has a capacity of 10 tonnes and makes the journey twice a day 90% loaded on the outward journeys and 10% on return journeys. The following information is available for a four weekly period during the year 2013:

<i>Petrol consumption</i>	<i>6 killometer per litre</i>
<i>Petrol cost</i>	<i>₹ 64 per litre</i>
<i>Lubricants</i>	<i>₹ 125 per week</i>
<i>Driver's salary</i>	<i>₹ 2,000 per week</i>
<i>Repairs</i>	<i>₹ 1,250 per week</i>
<i>Garage rent</i>	<i>₹1,30,000 per annum</i>
<i>Cost of lorry (excluding tyres)</i>	<i>₹ 9,80,000</i>
<i>Life of lorry</i>	<i>80,000 kilometers</i>
<i>Insurance</i>	<i>₹ 13,650 per annum</i>
<i>Cost of tyres</i>	<i>₹ 28,000</i>
<i>Estimated value of lorry at end of its life</i>	<i>₹ 1,80,000</i>
<i>Vehicle licence cost</i>	<i>₹ 5,200 per annum</i>
<i>Other overhead cost</i>	<i>₹ 45,500 per annum</i>
<i>Life of tyres</i>	<i>28,000 kilometers</i>
<i>The lorry operates on a six days week</i>	

Required:

- A statement to show the total cost of operating the vehicle for the four weekly period.
- Calculate the vehicle cost per kilometre and per tonne kilometre.

Question No.: 9 (May 2014 RTP)

Voyager Cabs Pvt. Ltd. is a New Delhi based cab renting company, provides cab facility on rent for cities Delhi, Agra and Jaipur to the tourists. To attract more tourists it has launched a new three days tour package for Delhi-Jaipur-Agra-Delhi. Following are the relevant information regarding the package:

Distance between Delhi to Jaipur (Km.)	274
Distance between Delhi to Agra (Km.)	242
Distance between Agra to Jaipur (Km.)	238

Price of diesel in Delhi	₹ 54 per litre
Price of diesel in Jaipur	₹ 56 per litre
Price of diesel in Agra	₹ 58 per litre
Mileage of cab per litre of diesel (Km.)	16
Chauffeur's salary	₹ 12,000 per month
Cost of the cab	₹ 12,00,000
Expected life of the cab	24,00,000 kms.
Servicing cost	₹ 30,000 after every 50,000 kilometres run.
Chauffeur's meal allowance	₹ 50 for every 200 kilometres of completed journey
Other set up and office cost	₹ 2,400 per month.

Voyager Cabs has made tie-up with fuel service centres at Agra, Jaipur and Delhi to fill diesel to its cabs on production of fuel passbook to the fuel centre. Company has a policy to get fuel filled up sufficient to reach next destination only.

You are required to calculate the price inclusive of service tax @ 12.36% to be quoted for the package if company wants to earn profit of 25% on its net takings i.e. excluding service tax.

Question No.:10 (November 2014 RTP)

Gopal Milk Co-Operative Society (GMCS) collects raw milk from the farmers of Ramgarh, Pratapgarh and Devgarh panchayats and processes these milk to make various dairy products. GMCS has its own vehicles (tankers) to collect and bring the milk to the processing plant. Vehicles are parked in the GMCS's garage situated within the plant compound. Following are the some information related with the vehicles:

	Ramgarh	Pratapgarh	Davgarh
No. of vehicles assigned	4	3	5
No. of trips a day	3	2	2
One way distance from the processing plant	24 k.m.	34 k.m.	16 k.m.
Toll tax paid p.m. (₹)	2,850	3,020	---

All the 5 vehicles assigned to Devgarh panchayat, were purchased five years back at a cost of ₹ 9,25,000 each. The 4 vehicles assigned to Ramgarh panchayat, were purchased two years back at a cost of ₹ 11,02,000 each and the remaining vehicles assigned to Pratapgarh were purchased last year at a cost of ₹ 13,12,000 each. With the purchase of each vehicle a two years free servicing warranty is provided. A vehicle gives 10 kmpl mileage in the first two year of purchase, 8 kmpl in next two years and 6 kmpl afterwards. The vehicles are subject to depreciation of 10% p.a. on straight line basis irrespective of usage. A vehicle has the capacity to carry 25,000 litres of milk but on an average only 70% of the total capacity is utilized.

The following expenditure is related with the vehicles:

Salary to a Driver (a driver for each vehicle)	₹ 18,000 p.m.
Salary to a Cleaner (a cleaner for each vehicle)	₹ 11,000 p.m.
Allocated garage parking fee	₹ 1,350 per vehicle per month
Servicing cost	₹ 3,000 for every complete 5,000 k.m. run.
Price of diesel per litre	₹ 58.00

From the above information you are required to calculate

- (i) Total operating cost per month for each vehicle. (Take 30 days for the month)
- (ii) Vehicle operating cost per litre of milk.

CHAPTER 9 - PROCESS AND OPERATION COSTING

Question No.1 – November 2015

The following information is furnished by ABC Company for Process - II of its manufacturing activity for the month of April 2015:

- (i) Opening Work-in-Progress - Nil
- (ii) Units transferred from Process I – 55,000 units at ₹ 3,27,800
- (iii) Expenditure debited to Process – II:

Consumables	₹ 1,57,200
Labour	₹ 1,04,000
Overhead	₹ 52,000
- (iv) Units transferred to Process III – 51,000 units
- (v) Closing WIP – 2,000 units (Degree of completion):

Consumables	80%
Labour	60%
Overhead	60%
- (vi) Units scrapped – 2,000 units, scrapped units were sold at ₹ 5 per unit
- (vii) Normal loss – 4% of units introduced

You are required to:

- (i) Prepare a Statement of Equivalent Production.
- (ii) Determine the cost per unit
- (iii) Determine the value of Work-in-Process and units transferred to Process – III

Question No.: 2 (May 2012 exam – 8 Marks)

A product passes through two processes A and B. During the year 2011, the input to process A of basic raw material was 8,000 units @ ₹ 9 per unit. Other information for the year is as follows:

	Process A	Process B
Output units	7,500	4,800
Normal loss (% to input)	5%	10%
Scrap value per unit (₹)	2	10
Direct wages (₹)	12,000	24,000
Direct expenses (₹)	6,000	5,000
Selling price per unit (₹)	15	25

Total overheads ₹17,400 were recovered as percentage of direct wages. Selling expenses were ₹5,000. There are not allocate to the processes. 2/3 of the output of Process A was passed on to the next process and the balance was sold. The entire output of Process B was sold.

Prepare Process A and B Accounts.

(8 Marks)

Question No.: 3 – (May 2013 – 10 Marks)

ABX Company Ltd. provides the following information relating to Process-B:

- (i) Opening Work-in-progress - NIL
 - (ii) Units Introduced - 45,000 units @ ₹ 10 per unit
 - (iii) Expenses debited to the process:
 - Direct material - ₹ 65,500
 - Labour - ₹ 90,800
 - Overhead - ₹ 1,80,700
 - (iv) Normal loss in the process - 2% of Input
 - (v) Work-in progress - 1800 units
 - Degree of completion
 - Materials - 100%
 - Labour - 50%
 - Overhead - 40%
 - (vi) Finished output - 42,000 units
 - (vii) Degree of completion of abnormal loss:
 - Materials - 100%
 - Labour - 80%
 - Overhead - 60%
 - (viii) Units scrapped as normal loss were sold at ₹ 5 per unit.
 - (ix) All the units of abnormal loss were sold at ₹ 2 per unit.
- You are required to prepare:*
- (a) Statement of equivalent production.
 - (b) Statement showing the cost of finished goods, abnormal loss and closing balance of work-in-progress.
 - (c) Process-B account and abnormal loss account. (10 Marks)

Question No.: 4 (May 2014 exam – 8 Marks)

M J Pvt. Ltd. produces a product "SKY" which passes through two processes, viz. Process-A and Process-B. The details for the year ending 31st March, 2014 are as follows:

	Process A	Process - B
40,000 Units introduced at a cost of	₹ 3,60,000	-
Material Consumed	₹ 2,42,000	2,25,000
Direct Wages	₹ 2,58,000	1,90,000
Manufacturing Expenses	₹ 1,96,000	1,23,720
Output in Units	37,000	27,000
Normal Wastage of Input	5%	10%
Scrap Value (per unit)	₹ 15	20
Selling Price (per unit)	₹ 37	61

Additional Information:

- (a) 80% of the output of Process-A, was passed on to the next process and the balance was sold. The entire output of Process- B was sold.
- (b) Indirect expenses for the year was ₹ 4,48,080.
- (c) It is assumed that Process-A and Process-B are not responsibility centre.

Required:

- (i) Prepare Process-A and Process-B Account.
- (ii) Prepare Profit & Loss Account showing the net profit / net loss for the year.

(8 Marks)

Question No.:5 – November 2014 exam

The following information relate to Process A:

- (i) Opening Work-in-Progress 8,000 units at ₹ 75,000
- Degree of Completion:
- Material 100%
- Labour and Overhead 60%
- (ii) Input 1,82,000 units at ₹ 7,37,500
- (iii) Wages paid ₹ 3,40,600
- (iv) Overheads paid ₹ 1,70,300

- (v) *Units scrapped* 14,000
Degree of Completion:
Material 100 %
Wages and Overheads 80%
- (vi) *Closing Work - in- Progress* 18,000 units
Degree of Completion:
Material 100%
Wages and Overheads 70%
- (vii) *Units completed and transferred 1,58,000 to next process*
(viii) *Normal loss 5% of total input including opening WIP*
(ix) *Scrap value is ₹ 5 per unit to be adjusted out of direct material cost*

You are required to compute on the basis of FIFO basis:

- (i) *Equivalent Production*
(ii) *Cost Per Unit*
(iii) *Value of Units transferred to next process.* (8 Marks)

Question No.6 - November 2016 RTP

Following data are available for a product for the month of July, 2016:

Particulars	Process- I (₹)	Process- II (₹)
Opening work-in- progress	Nil	Nil
Costs incurred during the month:		
- Direct materials	6,00,000	
- Labour	1,20,000	1,60,000
- Factory overheads	2,40,000	2,00,000
Units of production:		
Received in process	40,000	36,000
Completed and transferred	36,000	32,000
Closing work-in-progress	2,000	?
Normal loss in process	2,000	1,500

Production remaining in process has to be valued as follows:

Materials 100% Labour 50% Overheads 50%

There has been no abnormal loss in Process- II.

The company follows weighted average method for valuing inventory.

Prepare Process Accounts after working out the missing figures and with detailed workings.

Question No.7 – May 2016 RTP

From the following Information for the month ending October, 2015, prepare Process Cost accounts for Process III. Use First-in-first-out (FIFO) method to value equivalent production.

Direct materials added in Process III (Opening WIP)	2,000 units at ₹ 25,750
Transfer from Process II	53,000 units at ₹ 4,11,500
Transferred to Process IV	48,000 units
Closing stock of Process III	5,000 units
Units scrapped	2,000 units
Direct material added in Process III	₹ 1,97,600
Direct wages	₹ 97,600
Production Overheads	₹ 48,800

Degree of completion:

	Opening Stock	Closing Stock	Scrap
Materials	80%	70%	100%
Labour	60%	50%	70%
Overheads	60%	50%	70%

The normal loss in the process was 5% of production and scrap was sold at ₹ 3 per unit.

Question No.8 – November 2015 RTP

Star Ltd. manufactures chemical solutions for the food processing industry. The manufacturing takes place in a number of processes and the company uses a FIFO process costing system to value work-in-process and finished goods. At the end of the last month, a fire occurred in the factory and destroyed some of the paper files containing records of the process operations for the month.

Star Ltd. needs your help to prepare the process accounts for the month during which the fire occurred. You have been able to gather some information about the month's operating activities but some of the information could not be retrieved due to the damage. The following information was salvaged:

- Opening work-in-process at the beginning of the month was 800 litres, 70% complete for labour and 60% complete for overheads. Opening work-in-process was valued at ₹ 26,640.
- Closing work-in-process at the end of the month was 160 litres, 30% complete for labour and 20% complete for overheads.
- Normal loss is 10% of input and total losses during the month were 1,800 litres partly due to the fire damage.
- Output sent to finished goods warehouse was 4,200 litres.
- Losses have a scrap value of ₹15 per litre.

- All raw materials are added at the commencement of the process.
- The cost per equivalent unit (litre) is ₹39 for the month made up as follows:

	(₹)
Raw Material	23
Labour	7
Overheads	9
	39

Required:

- Calculate the quantity (in litres) of raw material inputs during the month.
- Calculate the quantity (in litres) of normal loss expected from the process and the quantity (in litres) of abnormal loss / gain experienced in the month.
- Calculate the values of raw material, labour and overheads added to the process during the month.
- Prepare the process account for the month.

Question No.: 9 (May 2013 RTP)

MTK Ltd. purchased 10,000 kgs. of a basic material @ ₹ 12 per kg and issued it for further processing in purifying department. In purifying department wages paid amounted to ₹ 4,200 and overhead was applied @ 150% of the labour cost. Indirect materials costing ₹ 1,500 were introduced into the process. The normal yield from the process is 90%. 9,100 kgs of output was obtained from this purifying process. Any difference in weight between the input of basic material and output of purified material can be sold @ ₹ 1.50 per kg.

The process is operated under a licence for which royalty @ ₹ 0.20 per kg. of purified material produced is paid.

You are required to prepare:

- Purifying process Account
- Normal loss Account
- Abnormal loss/ gain Account
- Royalty Payable Account.

Question No.: 10 (November 2013 RTP)

From the following information for the month of January, 2013, prepare Process-III cost accounts.

Opening WIP in Process-III	1,600 units at ₹ 24,000
Transfer from Process-II	55,400 units at ₹ 6,23,250
Transferred to warehouse	52,200 units
Closing WIP of Process-III	4,200 units
Units Scrapped	600 units
Direct material added in Process-III	₹ 2,12,400
Direct wages	₹ 96,420
Production overheads	₹ 56,400

Degree of completion:

	<i>Opening Stock</i>	<i>Closing Stock</i>	<i>Scrap</i>
<i>Material</i>	80%	70%	100%
<i>Labour</i>	60%	50%	70%
<i>Overheads</i>	60%	50%	70%

The normal loss in the process was 5% of the production and scrap was sold @ ₹ 5 per unit.

Question No.: 11 – May 2015 RTP, November 2017 RTP

The following data are available in respect of Process-I for October 2014:

- (1) Opening stock of work in process: 600 units at a total cost of ₹ 4,200.
- (2) Degree of completion of opening work in process:

Material	100%
Labour	60%
Overheads	60%

- (3) Input of materials at a total cost of ₹ 55,200 for 9,200 units.

- (4) Direct wages incurred ₹ 18,600

- (5) Overheads ₹ 8,630.

- (6) Units scrapped 200 units. The stage of completion of these units was:

Materials	100%
Labour	80%
Overheads	80%

- (7) Closing work in process; 700 units. The stage of completion of these units was:

Material	100%
----------	------

Labour	70%
Overheads	70%

- (8) 8,900 units were completed and transferred to the next process.
 (9) Normal loss is 4% of the total input (opening stock plus units put in)
 (10) Scrap value is ₹ 6 per unit.

You are required to:

- Compute equivalent production,
- Calculate the cost per equivalent unit for each element.
- Calculate the cost of abnormal loss (or gain), closing work in process and the units transferred to the next process using the FIFO method.

Question No.12 – May 2017

KMR Ltd. produces product AY, which passes through three processes 'XM', 'YM' and 'ZM'. The output of process 'XM' and 'YM' is transferred to next process at cost plus 20 percent each on transfer price and the output of process 'ZM' is transferred to finished stock at a profit of 25 percent on transfer price. The following information are available in respect of the year ending 31st March, 2017:

	Process- XM (₹)	Process- YM (₹)	Process- ZM (₹)	Finished Stock (₹)
Opening Stock	30,000	54,000	80,000	90,000
Material	1,60,000	1,30,000	1,00,000	-
Wages	2,50,000	2,16,000	1,84,000	-
Manufacturing Overheads	1,92,000	1,44,000	1,33,000	-
Closing Stock	40,000	64,000	78,000	1,00,000
Inter process profit included in Opening Stock	Nil	8,000	20,000	40,000

Stock in processes is valued at prime cost. The finished stock is valued at the price at which it is received from process 'ZM'. Sales of the finished stock during the period was ₹ 28,00,000.

You are required to prepare:

- All process accounts and
- Finished stock account showing profit element at each stage. (8 Marks)

CHAPTER 10 – JOINT PRODUCTS & BY PRODUCTS

Question No.1 – May 2016

A factory producing article A also produces a by-product B which is further processed into finished product. The joint cost of manufacture is given below:

Material	₹ 5,000
Labour	₹ 3,000
Overhead	₹ 2,000
	<u>₹ 10,000</u>

Subsequent cost in ₹ are given below:

	A	B
Material	3,000	1,500
Labour	1,400	1,000
Overhead	600	500
	<u>5,000</u>	<u>3,000</u>

Selling prices are A ₹ 16,000

 B ₹ 8,000

Estimated profit on selling prices is 25% for A and 20% for B.

Assume that selling and distribution expenses are in proportion of sales prices. Show how you would apportion joint costs of manufacture and prepare a statement showing cost of production of A and B. (8 Marks)

Question No.: 2 (May 2013 exam – 8 Marks)

A company manufactures one main product (M₁) and two by-products B₁ and B₂. For the month of January 2013, following details are available:

Total Cost upto separation Point ₹ 2,12,400

	M ₁	B ₁	B ₂
Cost after separation	-	₹ 35,000	₹ 24,000
No. of units produced	4,000	1,800	3,000
Selling price per unit	₹ 100	₹ 40	₹ 30
Estimated net profit as percentage to sales value	-	20%	30%
Estimated selling expenses as percentage to sales value	20%	15%	15%

There are no beginning or closing inventories.

Prepare statement showing:

- Allocation of joint cost; and
- Product-wise and overall profitability of the company for January 2013. (8 Marks)

Question No.:3 – May 2015 exam

A company manufactures one main product (M_1) and two by-products B_1 and B_2 . For the month of January 2015, following details are available:

Total cost upto separation point ₹2,12,400.

	M_1	B_1	B_2
Cost after separation	-	₹35,000	₹24,000
No. of Units produced	4,000	1,800	3,000
Selling Price per unit	₹100	₹40	₹30
Estimated net profit as percentage to Sales Value	-	20%	30%
Estimated selling expenses as percentage to Sales Value	20%	15%	15%

There are no opening or closing inventories.

Prepare statement showing:

- Allocation of Joint Cost; and
- Product-wise and overall profitability of the company for January, 2015. (8 Marks)

Question No.4 – May 2017 RTP

In an Oil Mill four products emerge from a refining process. The total cost of input during the quarter ending March 2016 is ₹1,48,000. The output, sales and additional processing costs are as under:

Products	Output in Litres	Additional processing cost after split off (₹)	Sales value (₹)
ACH	8,000	43,000	1,72,500
BCH	4,000	9,000	15,000
CSH	2,000	—	6,000
DSH	4,000	1,500	45,000

In case these products were disposed-off at the split off point that is before further processing, the selling price per litre would have been:

ACH (₹)	BCH (₹)	CSH (₹)	DSH (₹)
15.00	6.00	3.00	7.50

Prepare a statement of profitability based on:

- If the products are sold after further processing is carried out in the mill.
- If they are sold at the split off point.

Question No.5 – May 2016 RTP

A company processes a raw material in its Department 1 to produce three products, viz. A, B and X at the same split-off stage. During a period 1,80,000 kgs of raw materials were processed in Department 1 at a total cost of ₹ 12,88,000 and the resultant output of A, B and X were 18,000 kgs, 10,000 kgs and 54,000 kgs respectively. A and B were further processed in Department 2 at a cost of ₹ 1,80,000 and ₹ 1,50,000 respectively.

X was further processed in Department 3 at a cost of ₹1,08,000. There is no waste in further processing. The details of sales affected during the period were as under:

	A	B	X
Quantity Sold (kgs.)	17,000	5,000	44,000
Sales Value (₹)	12,24,000	2,50,000	7,92,000

There were no opening stocks. If these products were sold at split-off stage, the selling prices of A, B and X would have been ₹ 50, ₹ 40 and ₹ 10 per kg respectively. Required:

- Prepare a statement showing the apportionment of joint costs to A, B and X.
- Present a statement showing the cost per kg of each product indicating joint cost and further processing cost and total cost separately.
- Prepare a statement showing the product wise and total profit for the period.
- State with supporting calculations as to whether any or all the products should be further processed or not

Question No.: 6 (November 2012 RTP)

While manufacture of the main product 'A' two by-products 'P' and 'Q' emerge. The joint expenses of manufacture amount to ₹1,67,550. All the three products are processed further separation and sold as per details given below:

	Main Product	By Products	
	'A'	'P'	'Q'
Sales (₹)	1,30,000	70,000	50,000
Cost incurred after separation (₹)	8,000	7,000	6,000
Profit as percentage on sales (%)	20	10	15

Total fixed selling expenses are 10% of total cost of sales which are apportioned to the three products in the ratio of 5:3:2

Prepare a statement showing the appointment of joints costs to the main product and two by-products.

CHAPTER 11 – STANDARD COSTING

Question No.1 – November 2016

The following information is available from the cost records of a Company for the month of July, 2016:

(1) Material purchased	22,000 pieces	₹ 90,000
(2) Material consumed	21,000 pieces	
(3) Actual wages paid for	5,150 hours	₹ 25,750
(4) Fixed Factory overhead incurred		₹ 46,000
(5) Fixed Factory overhead budgeted		₹ 42,000
(6) Units produced	1,900	
(7) Standard rates and prices are:		
Direct material	₹ 4.50 per piece	
Standard input	10 pieces per unit	
Direct labour rate	₹ 6 per hour	
Standard requirement	2.5 hours per unit	
Overheads	₹ 8 per labour hour	

You are required to calculate the following variances:

- (i) Material price variance
- (ii) Material usage variance
- (iii) Labour rate variance
- (iv) Labour efficiency variance
- (v) Fixed overhead expenditure variance
- (vi) Fixed overhead efficiency variance
- (vii) Fixed overhead capacity variance.

(8 Marks)

Question No.2 – May 2016

X Associates undertake to prepare income tax returns for individuals for a fee. They use the weighted average method and actual costs for the financial reporting purposes. However, for internal reporting, they use a standard costs system. The standards, based on equivalent performance, have been established as follows:

Labour per return 5 hrs @ ₹ 40 per hour

Overhead per return 5 hrs @ ₹ 20 per hour

For March 2015 performance, budgeted overhead is ₹98,000 for standard labour hours allowed.

The following additional information pertains to the month of March 2015:

March 1	Return-in-process (25% complete)	200 Nos.
	Return started in March	825 Nos
March 31	Return-in-process (80% complete)	125 Nos
<i>Cost Data:</i>		
March 1	Return-in-process labour	₹ 12,000
	- Overheads	₹ 5,000
March 1 to 31	Labour : 4,000 hours	₹ 1,78,000
	Overheads	₹ 90,000

You are required to compute:

- For each element, equivalent units of performance and the actual cost per equivalent unit.
- Actual cost of return-in-process on March 31.
- The standard cost per return.
- The labour rate and labour efficiency variance as well as overhead volume and overhead expenditure variance. (8 Marks)

Question No.: 3 (May 2012 exam – 8 Marks)

SJ Ltd. has furnished the following information:

Standard overhead absorption rate per unit	₹ 20
Standard rate per hour	₹ 4
Budgeted production	15,000 units
Actual production	15,560 units
Actual overheads were ₹ 2,95,000 out of which ₹ 62,500 fixed .	
Actual hours	74,000

Overheads are based on the following flexible budget

Production (units)	8,000	10,000	14,000
Total Overheads (₹)	1,80,000	2,10,000	2,70,000

You are required to calculate the following overhead variances (on hour's basis) with appropriate workings:

- Variable overhead efficiency and expenditure variance
- Fixed overhead efficiency and capacity variance. (8 Marks)

Question No.: 4 (November 2012 exam – 6 Marks)

The standard labour employment and the actual labour engaged in a 40 hours week for a job are as under: (6 Marks)

Category of Workers	Standard		Actual	
	No. of workers	Wage Rate per hour (₹)	No. of workers	Wage Rate per hour (₹)
Skilled	65	45	50	50
Semi-skilled	20	30	30	35
Unskilled	15	15	20	10

Standard output: 2000 units;

Actual output: 1800 units

Abnormal Idle time 2 hours
in the week

Calculate:

- (i) Labour Cost Variance
- (ii) Labour Efficiency Variance
- (iii) Labour Idle Time Variance.

Question No.: 5 (May 2013 exam – 5 Marks)

Following are the details of the product Phomex for the month of April 2013:

Standard quantity of material required per unit	5 kg
Actual output	1000 units
Actual cost of materials used	₹ 7,14,000
Material price variance	₹ 51,000 (Fav)

Actual price per kg of material is found to be less than standard price per kg of material by ₹ 10.

You are required to calculate:

- (i) Actual quantity and Actual price of materials used.
- (ii) Material Usage Variance
- (iii) Material Cost Variance

Question No.: 6 (November 2013 exam – 8 Marks)

SP Limited produces a product 'Tempex' which is sold in a 10 Kg. packet. The standard cost card per packet of 'Tempex' are as follows:

	₹
Direct materials 10 kg @ ₹ 45 per kg	450
Direct labour 8 hours @ ₹ 50 per hour	400
Variable Overhead 8 hours @ ₹ 10 per hour	80
Fixed Overhead	<u>200</u>
	<u>1,130</u>

Budgeted output for the third quarter of a year was 10,000 Kg. Actual output is 9,000 Kg.

Actual cost for this quarter are as follows :

	₹
Direct Materials 8,900 Kg @ ₹ 46 per Kg.	4,09,400
Direct Labour 7,000 hours @ ₹ 52 per hour	3,64,000
Variable Overhead incurred	72,500
Fixed Overhead incurred	1,92,000

You are required to calculate :

- (i) Material Usage Variance
- (ii) Material Price Variance
- (iii) Material Cost Variance
- (iv) Labour Efficiency Variance
- (v) Labour Rate Variance
- (vi) Labour Cost Variance
- (vii) Variable Overhead Cost Variance
- (viii) Fixed Overhead Cost Variance

(8 Marks)

Question No.: 7 (May 2014 exam – 8 Marks)

XYZ Co. Ltd. provides the following information:

	Standard	Actual
Production	4,000 Units	3,800 Units
Working Days	20	21
Fixed Overhead	₹ 40,000	₹ 39,000
Variable Overhead	₹ 12,000	₹ 12,000

You are required to calculate following overhead variances:

- (a) Variable Overhead Variance
- (b) Fixed Overhead Variances
 - (i) Expenditure Variance
 - (ii) Volume Variance

(8 Marks)

Question No.8 – May 2017 RTP

XYZ Ltd. produces two products M and N by using two inputs Material A and B. The standard price per unit of Material A is ₹20 and of Material B is ₹10. The standard quantities of materials for each product are as follows:

Products	Materials	
	A (units)	B (units)
M	2	3
N	1	4

The company actually produced 11,000 units of M and 9,000 units of N and used 32,500 units of Material A at a cost of ₹6,59,750 and 67,000 units of Material B at a cost of ₹ 6,83,400.

Calculate:

- (i) Material Price Variance;
- (ii) Material Usage Variance;
- (iii) Material Cost Variance.

Question No.9 – November 2016 RTP

XYZ Ltd. produces a product X by using two raw materials A and B. The following standards have been set for the production:

Material	Standard Mix	Standard Price (₹)
A	40%	40 per kg.
B	60%	30 per kg.

The standard loss in processing is 15%.

During July, 2016 the company produced 2,000 kg. of finished output.

The positions of stock and purchases for the month of July, 2016 are as under:

Material	Stock on 1 st July 2016	Stock on 31 st July 2016	Purchases during July 2016	
			Quantity	Amount (₹)
A	40 kg.	10 kg.	900 kg.	42.50
B	50 kg.	60 kg.	1,400 kg.	25.00

Calculate the following variances:

- (i) Material Price Variance;
- (ii) Material Usage Variance;
- (iii) Material Mix Variance;
- (iv) Material Yield Variance;
- (v) Total Material Cost Variance.

The company follows FIFO method of stock valuation.

Question No.10 – May 2016 RTP, November 2017 RTP

The following information has been provided by a company:

Number of units produced and sold	6,000
Standard labour rate per hour	₹ 8
Standard hours required for 6,000 units	-
Actual hours required	17,094 hours
Labour efficiency	105.3%
Labour rate variance	₹ 68,376 (A)

You are required to calculate:

- (i) Actual labour rate per hour
- (ii) Standard hours required for 6,000 units
- (iii) Labour Efficiency variance
- (iv) Standard labour cost per unit
- (v) Actual labour cost per unit.

Question No.: 11 (November 2013 RTP)

Compute the missing data indicated by the question marks from the following:

Particulars	A	B
Standard Price/ unit	₹ 12	₹ 15
Actual Price/ unit	₹ 15	₹ 20
Standard Input (kgs.)	50	?
Actual Input (kgs.)	?	70
Material Price Variance	?	?
Material Usage Variance	?	₹ 300 Adverse
Material Cost Variance	?	?

Material mix variance for both products together was ₹ 45 Adverse.

Question No.: 12 (May 2014 RTP)

Jigyasa Pharmaceuticals Ltd. is engaged in producing dietary supplement 'Funkids' for growing children. It produces 'Funkids' in a batch of 10 kgs. Standard material inputs required for 10 kgs. of 'Funkids' are as below:

Material	Quantity (in kgs.)	Rate per kg. (in ₹)
Vita-X	5	110
Proto-D	3	320
Mine-L	3	460

During the month of March, 2014, actual production was 5,000 kgs. of 'Funkids' for which the actual quantities of material used for a batch and the prices paid thereof are as under:

Material	Quantity (in kgs.)	Rate per kg. (in ₹)
Vita-X	6	115
Proto-D	2.5	330
Mine-L	2	405

You are required to calculate the following variances based on the above given information for the month of March, 2014 for Jigyasa Pharmaceuticals Ltd.:

- (i) Material Cost Variance;
- (ii) Material Price Variance;
- (iii) Material Usage Variance;
- (iv) Material Mix Variance;
- (v) Material Yield Variance.

Question No.:13 – November 2014 RTP

The standard material cost for a normal mix of one tonne of product "Captain" based on:

Raw Material	Usage (in tonne)	Price per tonne
A	0.740	₹ 12,000
B	0.400	₹ 23,500
C	0.640	₹ 18,000

During the month of July, 2014, 18 tonnes of product "Captain" were produced from:

Raw Material	Consumption (tonnes)	Cost (₹)
A	13.12	1,62,000
B	7.10	1,65,200
C	11.50	2,07,000

Required to Calculate:

- (i) Material Cost Variance
- (ii) Material Price Variance
- (iii) Material Usage Variance
- (iv) Material Mix Variance
- (v) Material Yield Variance

Question No.14 – May 2015 RTP

ABC Ltd. had prepared the following estimation for the month of April:

	Quantity	Rate (₹)	Amount (₹)
Material-A	800 kg.	45.00	36,000
Material-B	600 kg.	30.00	18,000
Skilled labour	1,000 hours	37.50	37,500
Unskilled labour	800 hours	22.00	17,600

Normal loss was expected to be 10% of total input materials and an idle labour time of 5% of expected labour hours was also estimated.

At the end of the month the following information has been collected from the cost accounting department:

The company has produced 1,480 kg. finished product by using the followings:

	Quantity	Rate (₹)	Amount (₹)
Material-A	900 kg.	43.00	38,700
Material-B	650 kg.	32.50	21,125
Skilled labour	1,200 hours	35.50	42,600
Unskilled labour	860 hours	23.00	19,780

You are required to calculate:

- (a) Material Cost Variance;
- (b) Material Price Variance;
- (c) Material Mix Variance;
- (d) Material Yield Variance;
- (e) Labour Cost Variance;
- (f) Labour Efficiency Variance and
- (g) Labour Yield Variance.

Question No.15 – May 2017

AB Ltd. has furnished the following information:

	<i>Budgeted</i>	<i>Actual July 2016</i>
<i>Number of working days</i>	25	27
<i>Production (in units)</i>	20,000	22,000
<i>Fixed Overheads</i>	₹ 30,000	₹ 31,000

Budgeted fixed overhead rate is ₹ 1.00 per hour. In July 2016, the actual hours worked were 31,500. In relation to fixed overheads, calculate:

- (i) Efficiency Variance*
- (ii) Capacity Variance*
- (iii) Calendar Variance*
- (iv) Volume Variance*
- (v) Expenditure Variance*

(5 Marks)

CHAPTER 12 – MARGINAL COSTING

Question No.1 – November 2016, November 2017 RTP

The following figures are available from the records of ABC Company as at 31st March.

	2015 (₹ in lakhs)	2016 (₹ in lakhs)
Sales	200	250
Profit	30	45

Calculate:

- The P/V ratio and total fixed expenses.
- The break-even level of sales.
- Sales required to earn a profit of ₹ 70 lakhs.

Question No.2 – November 2016

A company has introduced a new product and marketed 20,000 units. Variable cost of the product is ₹ 20 per units and fixed overheads are ₹ 3,20,000.

You are required to:

- Calculate selling price per unit to earn a profit of 10% on sales value, BEP and Margin of Safety?
- If the selling price is reduced by the company by 10%, demand is expected to increase by 5,000 units, then what will be its impact on Profit, BEP and Margin of Safety?
- Calculate Margin of Safety if profit is ₹ 64,000. (8 Marks)

Question No.3 – May 2016

A dairy product company manufacturing baby food with a shelf life of one year furnishes the following information:

- On 1st January, 2016, the company has an opening stock of 20,000 packets whose variable cost is ₹180 per packet.
- In 2015, production was 1,20,000 packets and the expected production in 2016 is 1,50,000 packets. Expected sales for 2016 is 1,60,000 packets.
- In 2015, fixed cost per unit was ₹ 60 and it is expected to increase by 10% in 2016. The variable cost is expected to increase by 25%. Selling price for 2016 has been fixed at ₹ 300 per packet.

You are required to calculate the Break-even volume in units for 2016.

Question no.4 – November 2015

A company gives the following information:

Margin of Safety	₹ 3,75,000
Total Cost	₹ 3,87,500

*Margin of Safety (Qty.)**15,000 units**Break Even Sales in Units**5,000 units**You are required to calculate:*

- (i) Selling price per unit*
- (ii) Profit*
- (iii) Profit/ Volume Ratio*
- (iv) Break Even Sales (in Rupees)*
- (v) Fixed Cost*

Question No.: 5 (November 2012 exam – 8 Marks)*The following figures are related to LM Limited for the year ending 31st March, 2012 :**Sales - 24,000 units @ ₹ 200 per unit;**P/V Ratio 25% and Break-even Point 50% of sales.**You are required to calculate:*

- (i) Fixed cost for the year*
- (ii) Profit earned for the year*
- (iii) Units to be sold to earn a target net profit of ₹ 11,00,000 for a year.*
- (iv) Number of units to be sold to earn a net income of 25% on cost.*
- (v) Selling price per unit if Break-even Point is to be brought down by 4,000 units. (8 Marks)*

Question No.: 6 (May 2014 exam – 5 Marks)*SHA Limited provides the following trading results:*

<i>Year</i>	<i>Sale</i>	<i>Profit</i>
<i>2012-13</i>	<i>₹ 25,00,000</i>	<i>10% of Sale</i>
<i>2013-14</i>	<i>₹ 20,00,000</i>	<i>8% of Sale</i>

You are required to calculate:

- (i) Fixed Cost*
- (ii) Break Even Point*
- (iii) Amount of profit, if sale is ₹ 30,00,000*
- (iv) Sale, when desired profit is ₹ 4,75,000*
- (v) Margin of Safety at a profit of ₹ 2,70,000*

Question No.7 – November 2014 exam

Zed Limited sells its product at ₹ 30 per unit. During the quarter ending on 31st March, 2014, it produced and sold 16,000 units and suffered a loss of ₹ 10 per unit. If the volume of sales is raised to 40,000 units, it can earn a profit of ₹ 8 per unit.

You are required to calculate:

- (i) Break Even Point in Rupees.*
- (ii) Profit if the sale volume is 50,000 units.*
- (iii) Minimum level of production where the company needs not to close the production if unavoidable fixed cost is ₹ 1,50,000.*

Question No.:8 – May 2015 exam

ABC Limited started its operations in the year 2013 with a total production capacity of 2,00,000 units. The following information, for two years, are made available to you:

	Year	Year
	2013	2014
Sales (units)	80,000	1,20,000
Total Cost (₹)	34,40,000	45,60,000

There has been no change in the cost structure and selling price and it is anticipated that it will remain unchanged in the year 2015 also.

Selling price is ₹ 40 per unit.

Calculate :

- (i) Variable cost per unit.*
- (ii) Profit Volume Ratio.*
- (iii) Break-Even Point (in units)*
- (iv) Profit if the firm operates at 75% of the capacity.*

Question No.9 – May 2017 RTP

A Company manufactures a product, currently utilizing 80% capacity with a turnover of ₹ 8,00,000 at ₹ 25 per unit. The cost data are as under:

Material cost ₹7.50 per unit, Labour cost ₹6.25 per unit.

Semi variable cost (including variable cost of ₹3.75 per unit) ₹1,80,000. Fixed cost ₹ 90,000 upto 80% level of output, beyond this an additional ₹20,000 will be incurred.

Calculate:

- (i) Level of output at Break-even Point*
- (ii) Number of units to be sold to earn a net income of 8% of sales.*
- (iii) Level of output needed to earn a profit of ₹95,000*
- (iv) What should be the selling price per unit, if break-even point is to be brought down to 40% activity level?*

Question No.10 – November 2016 RTP

ABC Baggage Ltd. sells different styles of laptop bags with identical purchase costs and selling prices. The company is trying to find out the profitability of opening another store which will have the following expenses and revenues:

	Amount per piece (₹)
Selling Price	600
Variable costs:	
Material cost	410
Salesmen's commission	60
Total variable cost	470
Annual fixed expenses are:	(₹)
- Rent	6,00,000
- Office and administrative expenses	20,00,000
- Advertising	8,00,000
- Other fixed expenses	2,00,000

For the each following independent situation, you are required to:

- Calculate the annual break-even point in units and in value. Also determine the profit or loss if 35,000 units of bags are sold.
- The sales commissions are proposed to be discontinued, but instead a fixed amount of ₹ 9,00,000 is to be incurred in fixed salaries. A reduction in selling price of 5% is also proposed. What will be the break-even point in units?
- It is proposed to pay the store manager ₹ 5 per piece as further commission. The selling price is also proposed to be increased by 5%. What would be the break-even point in units?

Question No.11 – May 2016 RTP

You are given the following data for the year 2015 of Rio Co. Ltd:

Variable cost	60,000	60%
Fixed cost	30,000	30%
Net profit	10,000	10%
Sales	1,00,000	100%

Find out (a) Break-even point, (b) P/V ratio, and (c) Margin of safety. Also draw a break-even chart showing contribution and profit.

Question No.12 – November 2015 RTP

T Ltd produces a single product 'T-10' and sells it at a fixed price of ₹ 2,050 per unit. The production and sales data for first quarter of the year 2014-15 are as follows:

	April	May	June
Sales in units	4,200	4,500	5,200
Production in units	4,600	4,400	5,500

Actual/budget information for each month was as follows:

Direct materials	4 kilograms at ₹120 per kilogram
Direct labour	6 hours at ₹60 per hour
Variable production overheads	150% of direct labour
Sales commission	15% of sales value
Fixed production overheads	₹ 5,00,000
Fixed selling overheads	₹ 95,000

There was no opening inventory at the start of the quarter. Fixed production overheads are budgeted at ₹ 60,00,000 per annum and are absorbed into products based on a budgeted normal output of 60,000 units per annum.

Required:

- Prepare a profit statement for each of the three months using absorption costing principles.
- Prepare a profit statement for each of the three months using marginal costing principles.
- Present a reconciliation of the profit or loss figures given in your answer to (a) and (b).

Question No.: 13 (November 2012 RTP)

Marlboro Ltd. has two factories for producing cigarettes of identical quality. The figures of F/Y 2011-12 are as follows:

	Factory-A	Factory-B
Selling price per packet (₹)	75	75
Variable cost per packet (₹)	60	65
Fixed cost (₹)	3,10,000	2,15,000
Sales (units)	35,000	40,000
Production capacity (units)	40,000	45,000

Fixed cost includes depreciation on plant and machinery in factory A and factory B ₹40,000 and ₹ 38,000 respectively. You are required to calculate:

- Break-even Point in sales and units for each factory separately.
- Cash BEP in units for each factory separately.
- BEP in units for company as a whole. Current product mix of factory A and factory B is 1:2.

Question No.: 14 (May 2013 RTP)

The ratio of variable cost to sales is 60%. The break-even point occurs at 80% of the capacity sales.

- Find the capacity sales when fixed costs are ₹ 1,60,000
- Compute profit at 80% of the capacity sales.
- Find profit if sales is ₹ 5,70,000 and fixed cost remain same as above.
- Find sales, if desired profit is ₹ 44,000, and fixed cost is ₹ 1,42,000.

Question No.: 15 (November 2013 RTP)

A laboratory carrying out various tests on products produced by various drug companies to ascertain whether drugs are fit for medical use or not. At present, the laboratory carries out 10,000 tests each year and a survey carried out by the laboratory shows a rise in number of tests to 15,000 tests a year, to carrying out all these tests would require an additional shift to be worked.

The current cost of carrying out a full test is:

	₹ per test
Materials	1,500
Technicians' fees	130
Variable expenses	25
Fixed cost	100

Working the additional shift would

- (i) require a shift premium of 50 per cent to be paid to the technicians on the additional shift;
- (ii) enable a quantity discount of 10 per cent to be obtained for all materials if an order was placed to cover 15,000 tests;
- (iii) increase fixed costs by ₹ 5,00,000 per year.

The current fee per test is ₹ 2,000.

Required

- (a) Calculate the profit for the period at the current capacity of 10,000 tests.
- (b) A profit statement if the additional shift was worked and 15,000 tests were carried out .

Question No.: 16 (May 2014 RTP)

Maryanne Petrochemicals Ltd. is operating at 80 % capacity and presents the following information:

Break-even Sales	₹ 400 crores
P/V Ratio	30 %
Margin of Safety	₹ 120 crores

Maryanne's management has decided to increase production to 95 % capacity level with the following modifications:

- (a) The selling price will be reduced by 10%.
- (b) The variable cost will be increased by 2% on sales

- (c) The fixed costs will increase by ₹ 50 crores, including depreciation on additions, but excluding interest on additional capital.

Additional capital of ₹ 100 crores will be needed for capital expenditure and working capital.

Required:

- (i) Indicate the sales figure, with the working, that will be needed to earn ₹ 20 crores over and above the present profit and also meet 15% interest on the additional capital.
- (ii) What will be the revised
- (a) Break-even Sales
 - (b) P/V Ratio
 - (c) Margin of Safety

Question No.:17 – November 2014 RTP

Maxim Ltd. manufactures a product "N-joy". In the month of August 2014, 14,000 units of the product "N-joy" were sold, the details are as under:

	(₹)
Sale Revenue	2,52,000
Direct Material	1,12,000
Direct Labour	49,000
Variable Overheads	35,000
Fixed Overheads	28,000

A forecast for the month of September 2014 has been carried out by the General manger of Maxim Ltd. As per the forecast, price of direct material and variable overhead will be increased by 10% and 5% respectively.

Required to calculate:

- (i) Number of units to be sold to maintain the same quantum of profit that made in August 2014.
- (ii) Margin of safety in the month of August 2014 and September 2014.

Question No.: 18 – May 2015 RTP

Arnav Ltd. manufacture and sales its product R-9. The following figures have been collected from cost records of last year for the product R-9:

Elements of Cost	Variable Cost portion	Fixed Cost
Direct Material	30% of Cost of Goods Sold	--
Direct Labour	15% of Cost of Goods Sold	--
Factory Overhead	10% of Cost of Goods Sold	₹ 2,30,000
General & Administration Overhead	2% of Cost of Goods Sold	₹ 71,000
Selling & Distribution Overhead	4% of Cost of Sales	₹ 68,000

Last Year 5,000 units were sold at ₹185 per unit. From the given data find the followings:

- Break-even Sales (in rupees)
- Profit earned during last year
- Margin of safety (in %)
- Profit if the sales were 10% less than the actual sales.

Question No.19 – May 2017

The following information was obtained from the records of a manufacturing unit:

	₹	₹
Sales 80,000 units @ ₹ 25		20,00,000
Material consumed	8,00,000	
Variable Overheads	2,00,000	
Labour Charges	4,00,000	
Fixed Overheads	3,60,000	17,60,000
Net Profit		2,40,000

Calculate:

- The number of units by selling which the company will neither lose nor gain anything.
- The sales needed to earn a profit of 20% on sales.
- The extra units which should be sold to obtain the present profit if it is proposed to reduce the selling price by 20% and 25%.
- The selling price to be fixed to bring down its Break-even Point to 10,000 units under present conditions. (8 Marks)

CHAPTER 13 - BUDGET AND BUDGETARY CONTROL

Question No.1 – May 2016

- (i) The M-Tech Manufacturing Company is presently evaluating two possible processes for the manufacture of a toy. The following information is available:

Particulars	Process A (₹)	Process B (₹)
Variable cost per unit	12	14
Sales price per unit	20	20
Total fixed costs per year	30,00,000	21,00,000
Capacity (in units)	4,30,000	5,00,000
Anticipated sales (Next year, in units)	4,00,000	4,00,000

Suggest:

- Which process should be chosen?
- Would you change your answer as given above, if you were informed that the capacities of the two processes are as follows:

A - 6,00,000 units; B - 5,00,000 units? Why?

(4 Marks)

Question No.2 – November 2015

XY Co. Ltd manufactures two products viz., X and Y and sells them through two divisions, East and West. For the purpose of Sales Budget to the Budget Committee, following information has been made available for the year 2014-15:

Product	Budgeted Sales		Actual Sales	
	East Division	West Division	East Division	West Division
X	400 units at ₹ 9	600 units at ₹ 9	500 units at ₹ 9	700 units at ₹ 9
Y	300 units at ₹ 21	500 units at ₹ 21	200 units at ₹ 21	400 units at ₹ 21

Adequate market studies reveal that product X is popular but under priced. It is expected that if the price of X is increased by ₹ 1, it will, find a ready market. On the other hand, Y is overpriced and if the price of Y is reduced by ₹ 1 it will have more demand in the market. The company management has agreed for the aforesaid price changes. On the basis of these price changes and the reports of salesmen, following estimates have been prepared by the Divisional Managers:

Percentage increase in sales over budgeted sales

Product	East Division	West Division
X	+ 10%	+ 5%
Y	+ 20%	+ 10%

With the help of intensive advertisement campaign, following additional sales (over and above the above mentioned estimated sales by Divisional Managers) are possible:

Product	East Division	West Division
X	60 units	70 units
Y	40 units	50 units

You are required to prepare Sales Budget for 2015-16 after incorporating above estimates and also show the Budgeted Sales and Actual Sales of 2014-15. (8 Marks)

Question No.: 3 (May 2012 exam – 5 Marks)

AK Limited produces and sells a single product. Sales budget for calendar year 2012 by a quarters is as under:

Quarters	I	II	III	IV
No. of units to be sold	18,000	22,000	25,000	27,000

The year is expected to open with an inventory of 6,000 units of finished products and close with inventory of 8,000 units. Production is customarily scheduled to provide for 70% of the current quarter's sales demand plus 30% of the following quarter demand. The budgeted selling price per unit is ₹ 40 . The standard cost details for one unit of the product are as follows:

Variable Cost ₹ 34.50 per unit

Fixed Overheads ₹2 hours 30 minutes @ ₹ 2 per hour based on a budgeted production volume of 1,10,000 direct labour hours for the year. Fixed overheads are evenly distributed through-out the year.

You are required to:

- Prepare Quarterly Production Budget for the year.
- In which quarter of the year, company expected to achieve bread-even point.

Question No.: 4 (May 2013 exam – 7 Marks)

Pentax Limited has prepared its expense budget for 20,000 units in its factory for the year 2013 as detailed below:

	₹ per unit
Direct Materials	50
Direct Labour	20
Variable Overhead	15
Direct Expenses	6
Selling Expenses (20% fixed)	15
Factory Expenses (100% fixed)	7
Administration expenses (100% fixed)	4
Distribution expenses (85% variable)	12
Total ₹	129

Prepare an expense budget for the production of 15,000 units and 18,000 units.

Question No.: 5 – November 2014 exam

RST Limited is presently operating at 50% capacity and producing 30,000 units. The entire output is sold at a price of ₹ 200 per unit. The cost structure at the 50% level of activity is as under:

	₹
Direct Material	75 per unit
Direct Wages	25 per unit
Variable Overheads	25 per unit
Direct Expenses	15 per unit
Factory Expenses (25% fixed)	20 per unit
Selling and Distribution Exp. (80% variable)	10 per unit
Office and Administrative Exp. (100% fixed)	5 per unit

The company anticipates that the variable costs will go up by 10% and fixed costs will go up by 15%.

You are required to prepare an Expense budget, on the basis of marginal cost for the company at 50% and 60% level of activity and find out the profits at respective levels.

Question No.: 6 – May 2015 exam

X Y Z Limited is drawing a production plan for its two products - Product 'xml' and 'Product 'yml' for the year 2015-16. The company's policy is to maintain closing stock of finished goods at 25% of the anticipated volume of sales of the succeeding month.

The following are the estimated data for the two products:

	xml	yml
Budgeted Production (in units)	2,00,000	1,50,000
Direct Material (per unit)	₹ 220	₹ 280
Direct Labour (per unit)	₹ 130	₹ 120
Direct Manufacturing Expenses	₹ 4,00,000	₹ 5,00,000

The estimated units to be sold in the first four months of the year 2015-16 are as under:

	April	May	June	July
xml	8,000	10,000	12,000	16,000
yml	6,000	8,000	9,000	14,000

Prepare:

- Production Budget (Month wise)
- Production cost Budget (for first quarter of the year)

Question No.7 – May 2017 RTP

Vivekananda Primary School has a total of 150 students consisting of 5 sections with 30 students per section. The school plans for a picnic around the city during the weekend to places such as the zoo, the Japanese park, Birla planetarium etc. A private transport operator has come forward to lease out the buses for taking the students. Each bus will have a maximum capacity of 50 (excluding 2 seats reserved for the teachers accompanying the students.) The school will employ two teachers for each bus paying them an allowance of ₹500 per teacher. It will also lease out the required number of buses. The following are the other cost estimates:

Particulars	Cost per student (₹)
Breakfast	50
Lunch	100
Tea	30
Entrance fee at zoo	20
Bus hire charge	6,500 per bus
Special permit fee	500 per bus
Block Entrance fee at the planetarium	2,500
Prizes to students for games	2,500

No costs are incurred in respect of the accompanying teachers (except the allowances of ₹ 500 per teacher).

You are required to prepare:

- A flexible budget estimating the total cost for the students' levels of 30, 60, 90, 120 and 150. Each item of cost is to be indicated separately.
- Compute the average cost per student at these levels.
- What will be your conclusions regarding the break-even level of students if the school proposes to collect ₹ 450 per student.

Question No.8 – November 2016 RTP

Aditya Ltd. manufactures two products K and H. The sales director has anticipated to sale 8,000 units of Product K and 4,200 units of Product H. The Standard cost data for the products for next year are as follows:

	Product- K Per unit	Product- H Per unit
Direct materials:		
-Material X @ ₹ 15 per kg.	12 kg.	15 kg.
-Material Y @ ₹ 16 per kg.	15 kg.	6 kg.
-Material Z @ ₹ 5 per ltr.	8 ltr.	14 ltr.

Direct wages:		
-Unskilled @ ₹ 40 per hour	12 hour	10 hour
-Skilled @ ₹ 75 per hour	8 hour	5 hour

Budgeted stocks for next year are as follows:

		Product- K (Units)	Product- H (Units)
1 st April, 2016		800	1,600
31 st March, 2017		1,000	2,100
	Material-X (kg)	Material-Y (kg)	Material-Z (ltr)
1 st April, 2016	25,000	30,000	14,000
31 st March, 2017	30,000	18,000	7,500

Prepare the following budgets for next year:

- Production budget, in units;
- Material purchase budget, in quantity and in value;
- Direct labour budget, in hours and in value.

Question No.9 – November 2015 RTP, November 2017 RTP

G Ltd. manufactures two products called 'M' and 'N'. Both products use a common raw material Z. The raw material Z is purchased @ ₹ 36 per kg from the market. The company has decided to review inventory management policies for the forthcoming year.

The following forecast information has been extracted from departmental estimates for the year ended 31st March 2016 (the budget period):

	Product M	Product N
Sales (units)	28,000	13,000
Finished goods stock increase by year-end	320	160
Post-production rejection rate (%)	4	6
Material Z usage (per completed unit, net of wastage)	5 kg	6 kg
Material Z wastage (%)	10	5

Additional information:

- Usage of raw material Z is expected to be at a constant rate over the period.
- Annual cost of holding one unit of raw material in stock is 11% of the material cost.
- The cost of placing an orders is ₹ 320 per order.
- The management of G Ltd. has decided that there should not be more than 40 orders in a year for the raw material Z.

Required:

- (a) Prepare functional budgets for the year ended 31st March 2016 under the following headings:
 - (i) Production budget for Products M and N (in units).
 - (ii) Purchases budget for Material Z (in kgs and value).
- (b) Calculate the Economic Order Quantity for Material Z (in kgs).
- (c) If there is a sole supplier for the raw material Z in the market and the supplier do not sale more than 4,000 kg. of material Z at a time. Keeping the management purchase policy and production quantity mix into consideration, calculate the maximum number of units of Product M and N that could be produced.

Question No.: 10 (November 2012 RTP)

Blueberry Ltd. is producing two products namely I-Phone and Tablet PC. Each unit of I-Phone and Tablet PC takes 12 hours and 14 hours respectively for production. During the F/Y 2011-12 Blueberry produced 15,000 units of I-Phone and 10,000 units of Tablet PC. Budgeted machine hours were 3,10,000 hours whereas actual machine hours were 3,00,000 hours. You are required to compute various control ratios.

Question No.: 11 (May 2013 RTP)

M/s NNSG Ltd, specialised in manufacturing of piston rings for motor vehicle. It has prepared budget for 8,000 units per annum at budgeted cost of ₹ 21,64,400 as detailed below:

	(₹)	(₹)
Fixed cost (Manufacturing)		2,28,000
Variable costs:		
Power	18,000	
Repairs, etc.	16,000	
Other variable cost	6,400	
Direct material	6,16,000	
Direct labour	<u>12,80,000</u>	<u>19,36,400</u>
		<u>21,64,400</u>

Considering the possible impact on sales turnover by market trends, the company decides to prepare flexible budget with a production target of 4,000 and 6,000 units. On behalf of the company you are required to prepare a flexible budget for production levels at 50% and 75%.

Assuming the selling price per unit is maintained at ₹ 400 as at present, indicate the effect on net profit. Administration, selling and distribution overheads continue at ₹72,000.

Question No.: 12 (November 2013 RTP)

Jigyasa Ltd. is drawing a production plan for its two products Minimax (MM) and Heavyhigh (HH) for the year 2013-14. The company's policy is to hold closing stock of finished goods at 25% of the anticipated volume of sales of the succeeding month. The following are the estimated data for two products:

	Minimax (MM)	Heavyhigh (HH)
Budgeted Production units	1,80,000	1,20,000
	(₹)	(₹)
Direct material cost per unit	220	280
Direct labour cost per unit	130	120
Manufacturing overhead	4,00,000	5,00,000

The estimated units to be sold in the first four months of the year 2013-14 are as under

	April	May	June	July
Minimax	8,000	10,000	12,000	16,000
Heavyhigh	6,000	8,000	9,000	14,000

Prepare production budget for the first quarter in monthwise.

Question No.: 13 (May 2014 RTP)

Concorde Ltd. manufactures two products using two types of materials and one grade of labour. Shown below is an extract from the company's working papers for the next month's budget:

	Product-A	Product-B
Budgeted sales (in units)	2,400	3,600
Budgeted material consumption per unit (in kg):		
Material-X	5	3
Material-Y	4	6
Standard labour hours allowed per unit of product	3	5

Material-X and Material-Y cost ₹ 4 and ₹ 6 per kg and labours are paid ₹ 25 per hour. Overtime premium is 50% and is payable, if a worker works for more than 40 hours a week. There are 180 direct workers.

The target productivity ratio (or efficiency ratio) for the productive hours worked by the direct workers in actually manufacturing the products is 80%. In addition the non-productive down-time is budgeted at 20% of the productive hours worked.

There are four 5-days weeks in the budgeted period and it is anticipated that sales and production will occur evenly throughout the whole period.

It is anticipated that stock at the beginning of the period will be:

Product-A	400 units
Product-B	200 units
Material-X	1,000 kgs.
Material-Y	500 kgs.

The anticipated closing stocks for budget period are as below:

Product-A	4 days sales
Product-B	5 days sales
Material-X	10 days consumption
Material-Y	6 days consumption

Required:

Calculate the Material Purchase Budget and the Wages Budget for the direct workers, showing the quantities and values, for the next month.

Question No.: 14 – May 2015 exam

X Y Z Limited is drawing a production plan for its two products - Product 'xml' and 'Product 'yml' for the year 2015-16. The company's policy is to maintain closing stock of finished goods at 25% of the anticipated volume of sales of the succeeding month.

The following are the estimated data for the two products:

	xml	yml
Budgeted Production (in units)	2,00,000	1,50,000
Direct Material (per unit)	₹ 220	₹ 280
Direct Labour (per unit)	₹ 130	₹ 120
Direct Manufacturing Expenses	₹ 4,00,000	₹ 5,00,000

The estimated units to be sold in the first four months of the year 2015-16 are as under:

	April	May	June	July
xml	8,000	10,000	12,000	16,000
yml	6,000	8,000	9,000	14,000

Prepare:

- Production Budget (Month wise)
- Production cost Budget (for first quarter of the year)

Question No.15 – May 2017

You are given the following data of a manufacturing concern:

	₹
Variable Expenses (at 50% capacity):	
Materials	48,00,000
Labour	51,20,000

Others	7,60,000
<i>Semi variable expenses (at 50% capacity):</i>	
Maintenance and Repairs	5,00,000
Indirect Labour	19,80,000
Sales Dept. Salaries	5,80,000
Sundry Administrative Expenses	5,20,000
<i>Fixed Expenses:</i>	
Wages & Salaries	16,80,000
Rent, Rates and Taxes	11,20,000
Depreciation	14,00,000
Sundry Administrative Exp.	17,80,000

The fixed expenses remain constant for all levels of production. Semi variable expenses remain constant between 45% and 65% of capacity whereas it increases by 10% between 65% and 80% capacity of 20% between 80% and 100 % capacity.

Sales at various levels are as under:

Capacity	Sales (₹)
75%	2,40,00,000
100%	3,20,00,000

Prepare flexible budget at 75% and 100% capacity.

(8 Marks)

CHAPTER 2: TIME VALUE OF MONEY

Question No.1 – May 2016

- (ii) A company has purchased a plant for ₹ 10,00,000 with a useful life of 6 years. It expects that ₹ 15,00,000 will be required to replace the plant after 6 years. To ensure that money is available at the time of replacement, the company has created a sinking fund.

You are required to determine the amount to be deposited annually, if the fund earns interest at 8% per annum. Given $CVFA_{0.08,6} = 7.336$.

Question No.: 2 (November 2012 exam – 5 Marks)

X is invested ₹ 2,40,000 at annual rate of interest of 10 percent. What is the amount after 3 years if the compounding is done?

- (i) Annually
(ii) Semi-annually.

Question No.3 – May 2017 RTP

Ms. A has purchased a smart phone from a shop for ₹25,000. She has paid ₹5,000 as down payment and the rest will be paid in equated monthly instalments (EMI) for 2 years. The interest rate charged by the bank is 14% p.a.

Required:

- (i) Calculate the amount of EMI
(ii) Calculate the total amount of interest payable to the bank.

Question No.4 – November 2016 RTP

Mr. X wish to get her daughter admitted into a medical college after 15 years from now. He will be required total ₹ 25,00,000 to get admission into the college. For this he has identified a fund, which pays interest @ 9% p.a. In this regard he wanted to know the amount to be invested in each of the following situations:

- (a) If he decides to make annual payment into the fund at the end of each year;
(b) If he decides to invest a lump sum in the fund at the end of the year;
(c) If he decides to make annual payment into the fund at the beginning of each year.

(FVIF/ CVF_(15, 0.09) = 3.642, FVIFA/ CVFA_(15, 0.09) = 29.361, PVIF/ PVF_(15, 0.09) = 0.275 and PVIFA/ PVFA_(15, 0.09) = 8.061).

Question No.5 – May 2016 RTP

Calculate if ₹10,000 is invested at interest rate of 12% per annum, what is the amount after 3 years if the compounding of interest is done?

- (i) Annually
(ii) Semi-annually
(iii) Quarterly

Question No.6 – November 2015 RTP, November 2017 RTP

You need a sum of ₹ 1,00,000 at the end of 10 years. You know that the best you can do is to deposit some lump sum amount today at 6% rate of interest or to make equal payments into a bank account, starting a year from now on which you can earn 6% interest. Find out

- (i) What amount to be deposited today or
- (ii) What amount must be deposited annually?

Question No.: 7 (May 2014 RTP)

The earnings of Alpha Limited were ₹ 3 per share in year 1. They increased over a 10 year period to ₹ 4.02. You are required to compute the rate of growth or compound annual rate of growth of the earnings per share.

Question No.: 8 – November 2014 RTP

Alpha Limited has ₹ 10 crores bonds outstanding. Bank deposits earn 10 per cent per annum. The bonds will be redeemed after 15 years for which purpose Alpha Limited wishes to create a sinking fund. How much amount should be deposited to the sinking fund each year so that Alpha Limited would have in the sinking fund ₹ 10 crores to retire its entire issue of bonds?

Question No.:9 – May 2015 RTP

Alpha Limited has borrowed ₹ 1,000 to be repaid in equal installments at the end of each of the next 3 years. The interest rate is 15 per cent. You are required to prepare an amortisation schedule for Alpha Limited.

CHAPTER 3: FINANCIAL ANALYSIS AND PLANNING

Question No.1 – November 2016

The following figures and ratios pertain to ABG Company Limited for the year ending 31st March, 2016:

<i>Annual Sales (credit)</i>	<i>₹ 50,00,000</i>
<i>Gross Profit Ratio</i>	<i>28%</i>
<i>Fixed assets turnover ratio (based on cost of goods sold)</i>	<i>1.5</i>
<i>Stock turnover ratio (based on cost of goods sold)</i>	<i>6</i>
<i>Quick ratio</i>	<i>1 : 1</i>
<i>Current ratio</i>	<i>1.5</i>
<i>Debtors collection period</i>	<i>45 days</i>
<i>Reserves and surplus to Share Capital</i>	<i>0.60 : 1</i>
<i>Capital gearing ratio</i>	<i>0.5</i>
<i>Fixed Assets to net worth</i>	<i>1.2 : 1</i>

You are required to prepare the Balance Sheet as at 31st March, 2016 based on the above information. Assume 360 days in a year.

(8 Marks)

Question No.2 – May 2016

With the following ratios and further information given below prepare a Trading Account, Profit and Loss Account and Balance Sheet of ABC Company.

<i>Fixed Assets</i>	<i>₹40,00,000</i>
<i>Closing Stock</i>	<i>₹4,00,000</i>
<i>Stock turnover ratio</i>	<i>10</i>
<i>Gross profit ratio</i>	<i>25 percent</i>
<i>Net profit ratio</i>	<i>20 percent</i>
<i>Net profit to capital</i>	<i>1/5</i>
<i>Capital to total liabilities</i>	<i>1/2</i>
<i>Fixed assets to capital</i>	<i>5/4</i>
<i>Fixed assets/Total current assets</i>	<i>5/7</i>

Question no.3 – May 2016

State, which of the following would result in inflow/outflow of funds, if the funds were defined as working capital.

- (i) Purchase of a fixed asset on credit of two months.*
- (ii) Sale of a fixed asset (book value ₹ 8,000) at a loss of ₹7,000.*
- (iii) Payment of final dividend already declared.*
- (iv) Writing off Bad debts against a provision for doubtful debts.*

Question no.4 – November 2015

VRA Limited has provided the following information for the year ending 31st March, 2015.

Debt Equity Ratio	2: 1
14% long term debt	₹ 50,00,000
Gross Profit Ratio	30%
Return on equity	50%
Income Tax Rate	35%
Capital Turnover Ratio	1.2 times
Opening Stock	₹ 4,50,000
Closing Stock	8% of sales

You are required to prepare Trading and Profit and Loss Account for the year ending 31st March, 2015.
(8 Marks)

Question No.5 – May 2015

Balance Sheets of KAS Limited as on 31st March, 2014 and 31st March, 2015 are furnished below:

(Amount in Rupees)

Liabilities	As at 31 st March, 2014	As at 31 st March, 2015
Equity Share Capital	75,00,000	1,02,50,000
General Reserve	42,50,000	50,00,000
Profit & Loss Account	15,00,000	18,75,000

13 % Debentures of face value ₹ 100 each	58,00,000	43,50,000
Current Liabilities	30,00,000	32,50,000
Proposed Dividend	7,50,000	9,10,000
Provision for Income tax	22,50,000	24,75,000
Total	2,50,50,000	2,81,10,000

(Amount in Rupees)

Assets	As at 31 st March, 2014	As at 31 st March, 2015
Goodwill	10,00,000	7,75,000
Land & Building	68,00,000	61,20,000
Plant & Machinery	75,12,000	1,07,95,000
Investment	25,00,000	21,25,000
Stock	33,00,000	27,50,000

Debtors	24,45,000	36,20,000
Cash and Bank	14,93,000	19,25,000
Total	2,50,50,000	2,81,10,000

Following additional information is available:

- (i) During the financial year 2014-15 the company issued equity shares at par.
- (ii) Debentures were redeemed on 1st April, 2014 at a premium of 10%.
- (iii) Some investments were sold at a profit of ₹ 75,000 and the profit was credited to General Reserve Account.
- (iv) During the year an old machine costing ₹ 23,50,000 was sold for ₹ 6,25,000. Its written down value was ₹ 8,00,000.
- (v) Depreciation is to be provided on plant and machinery at 20% on the opening balance.
- (vi) There was no purchase or sale of land and building.
- (vii) Provision for tax made during the year was ₹ 4,50,000.

You are required to prepare a Cash Flow Statement for the year ended 31st March, 2015.

(8 Marks)

Question No.: 6 (May 2012 exam – 8 Marks)

The Balance Sheet of X Ltd. as on 31-3-2011 and 31-3-2012 are as under:

Liabilities	2011	2012	Assets	2011	2012
Equity Share capital (₹ 10 each)	18,00,000	22,00,000	Fixed Assets (Including machine)	20,50,000	18,75,000
General Reserve	7,50,000	6,00,000	Stock	7,10,000	8,95,000
Security premium	50,000	45,000	Debtors	7,25,000	9,80,000
Profit & Loss A/c	4,50,000	5,30,000	Cash Balance	1,25,000	1,80,000
7% Debentures	3,00,000	2,00,000	Preliminary Expense	35,000	25,000
Creditors	1,50,000	2,15,000			
Provision for tax	1,45,000	1,65,000			
	<u>36,45,000</u>	<u>39,55,000</u>		<u>36,45,000</u>	<u>39,55,000</u>

Additional Information:

- Depreciation charged on fixed assets during the year was ₹ 2,05,000. An old machine costing ₹ 2,00,000 (WDV ₹ 80,000) was sold for ₹ 65,000 during the year.
- Provisions for tax made during the year for ₹ 1,78,000.
- On 1-4-2011 company redeemed debentures of ₹ 1,00,000 at a premium of 5%.
- Company has issued fully paid bonus shares of ₹ 2,00,000 by capitalization of profit.

Prepare Cash Flow Statement.

(8 Marks)

Question No.: 7 (May 2012 exam – 4 Marks)

Explain the important ratios that would be used in each of the following situations:

- A bank is approached by a company for a loan of ₹ 50 lakh for working capital purposes.
- A long term creditor interested in determining whether his claim is adequately secured.
- A shareholder who is examining his portfolio and who is to decide whether he should hold or sell his holding in the company.
- A finance manager interested to know the effectiveness with which a firm uses its available resources.

Question No.: 8 (November 2012 exam – 8 Marks)

The following accounting information and financial ratios of M Limited relate to the year ended 31st March, 2012 :

Inventory Turnover Ratio	6 Times
Creditors Turnover Ratio	10 Times
Debtors Turnover Ratio	8 Times
Current Ratio	2.4
Gross Profit Ratio	25%

Total sales ₹ 30,00,000; cash sales 25% of credit sales; cash purchases ₹ 2,30,000; working capital ₹ 2,80,000; closing inventory is ₹ 80,000 more than opening inventory.

You are required to calculate:

- (i) Average Inventory
- (ii) Purchases
- (iii) Average Debtors
- (iv) Average Creditors
- (v) Average Payment Period
- (vi) Average Collection Period
- (vii) Current Assets
- (viii) Current Liabilities.

(8 Marks)

Question No.: 9 (November 2012 exam – 12 Marks)

Following are the summarized Balance Sheets of JKM Limited as on 31st March, 2011 and 2012 :

(12 Marks)

(₹ in lakhs)

Liabilities	31 st March		Assets	31 st March	
	2011	2012		2011	2012
	₹	₹		₹	₹
Equity Share Capital	50.00	55.00	Goodwill	5.00	4.20
Capital Reserve	-	2.50	Land & Building	20.00	18.00
General Reserve	4.00	6.00	Plant & Machinery	22.00	31.00
Profit & Loss Account	5.30	6.70	Investment	2.00	3.50
Proposed Dividend	8.00	11.00	Stock	8.60	12.70
Bills Payable	2.00	1.80	Sundry Debtors	10.20	13.00
Sundry Creditors	3.50	4.60	Bills Receivables	1.00	0.70
Provision for Tax	4.00	5.00	Cash in hand & Bank	7.20	8.90
			Share Issue Exp.	0.80	0.60
	76.80	92.60		76.80	92.60

Additional Information:

- (i) A machine (original cost ₹ 2,80,000; Book Value ₹ 1,70,000) was sold during the year for ₹ 1,50,000.
- (ii) Depreciation for 2011-12 was amounted to ₹ 3,00,000 on plant and machinery and ₹ 50,000 on land and building.
- (iii) A piece of land had been sold out on 01-11-2011 and the profit on the sale has been credited in capital reserve.
- (iv) ₹ 40,000 is received as dividend including ₹ 15,000 pre-acquisition profit, which is credited to investment account.
- (v) An interim dividend of ₹ 2,50,000 has been paid during the year 2011-12.
- (vi) Income tax paid during the year 2011-12, amounted to ₹ 3,80,000.

Required:

- (A) Prepare a schedule of changes in the working capital.
- (B) Prepare funds flow statement as on 31st March, 2012.

Question No.: 10 (May 2013 exam – 5 Marks)

The following information relates to Beta Ltd. for the year ended 31st March 2013:

Net Working Capital	₹ 12,00,000
Fixed Assets to Proprietor's Fund Ratio	0.75
Working Capital Turnover Ratio	5 Times
Return on Equity (ROE)	15%

There is no debt capital.

You are required to calculate:

You are required to calculate:

- (i) Proprietor's Fund
- (ii) Fixed Assets
- (iii) Net Profit Ratio.

Question No.: 11 (May 2013 exam – 10 Marks)

The summarized Balances Sheets of MPS Limited as on 31-3-2012 and 31-3-2013 are as under:

Liabilities	31-3-2012	31-3-2013	Assets	31-3-2012	31-3-2013
	₹			₹	₹
Equity share capital	40.00	50.00	Land & Building	27.00	25.00
Securities Premium Account	-	1.00	Plant & Machinery	25.00	34.00
General Reserve	8.00	11.00	Investments (Long Term)	3.00	8.00
Profit & Loss Account	10.30	12.70	Stock	7.50	9.80
10% Debentures	5.00	3.00	Debtors	9.25	11.15
Sundry Creditors	4.90	6.20	Bills Receivable	1.77	1.65
Provision for Tax	5.00	7.00	Cash & Bank	4.50	7.70
Proposed Dividend	4.80	6.00	Balance Preliminary Expenses	0.80	0.62
Corporate Dividend Tax	0.82	1.02			
	78.82	97.92		78.82	97.92

Additional Information:

- On 1.4.2012, the company redeemed debentures of ₹ 2,00,000 at par.
- During 2012-13 the company has issued equity shares for cash at a premium of 10%.
- Provision for tax made during the year 2012-13 for ₹ 6,80,000.
- Dividend received on investment ₹ 50,000 in July 2012.
- A machine costing ₹ 8,00,000 (WDV ₹ 1,20,000) was sold for ₹ 50,000 during the year 2012-13.
- Depreciation for 2012-13 charged on plant & machinery ₹ 3,30,000 and ₹ 2,00,000 on land and building.
- Proposed Dividend and Corporate Dividend Tax of 2011-12 paid during the year 2012-13.

Prepare a Cash Flow Statement as per Accounting Standard (AS)-3.

(10 Marks)

Question No.: 12 (November 2013 exam – 8 Marks)

The assets of SONA Ltd. consist of fixed assets and current assets, while its current liabilities comprise bank credit in the ratio of 2 : 1. You are required to prepare the Balance Sheet of the company as on 31st March 2013 with the help of following information:

Share Capital	₹ 5,75,000	
Working Capital (CA-CL)	₹ 1,50,000	
Gross Margin	25%	
Inventory Turnover	5 times	
Average Collection Period	1.5 months	
Current Ratio	1.5:1	
Quick Ratio	0.8: 1	
Reserves & Surplus to Bank & Cash	4 times	(8 Marks)

Question No.: 13 (November 2013 exam – 8 Marks)

The following are the summarized Balance Sheet of Flexon Limited as on 31st March 2012 and 2013 :

Liabilities	31.3.12 ₹	31.3.13 ₹	Assets	31.3.12 ₹	31.3.13 ₹
Share Capital	8,00,000	8,00,000	Goodwill	15,000	15,000
General Reserve	1,40,000	1,80,000	Building	4,00,000	3,60,000
Profit & Loss A/c.	1,60,000	2,70,000	Plant	3,70,000	5,20,000
Sundry Creditors	1,71,000	1,67,000	Investment (Long-term)	1,20,000	1,50,000
Bills Payable	20,000	30,000	Stock	3,00,000	2,30,000
Provision for Tax	1,60,000	1,80,000	Debtors	1,80,000	2,00,000
			Cash & Bank	66,000	1,52,000
	14,51,000	16,27,000		14,51,000	16,27,000

Additional Information:

(1) Depreciation charged during the year 2012-13:

On Plant - ₹ 40,000

On Building - ₹ 40,000

(2) Provision for tax of ₹ 1,90,000 was made during the year 2012-13.

(3) Interim dividend paid during the year 2012-13:

Interim Dividend - ₹ 80,000

Corporate Dividend Tax - ₹ 13,596

Prepare:

(i) Statement of changes in working capital

(ii) Funds flow statement for the year ended 31st March, 2013. (8 Marks)

Question No.: 14 (May 2014 exam – 5 Marks)

NOOR Limited provides the following information for the year ending 31st March, 2014:

Equity Share Capital	₹25,00,000
Closing Stock	₹6,00,000
Stock Turnover Ratio	5 times
Gross Profit Ratio	25%
Net Profit / Sale	20%
Net Profit / Capital	$\frac{1}{4}$

You are required to prepare:

Trading and Profit & Loss Account for the year ending 31st March, 2014.

Question No.: 15 (May 2014 exam – 8 Marks)

The Balance Sheets of Z Ltd. as on 31st March, 2013 and 31st March, 2014 are as under:

Liabilities	2013	2014	Assets	2013	2014
	₹	₹		₹	₹
Equity share capital	15,00,000	20,00,000	Goodwill	5,75,000	4,50,000
12% Redeemable pref. share cap.	7,50,000	5,00,000	Land & Building	10,00,000	8,50,000
General Reserve	2,00,000	3,50,000	Plant	4,00,000	10,00,000
Profit & Loss A/c	1,50,000	2,40,000	Debtors	8,00,000	12,60,000
Creditors	2,75,000	4,15,000	Stock	4,85,000	4,35,000
Outstanding Expenses	1,00,000	80,000	Marketable Securities	75,000	50,000
Provision for Tax	2,00,000	2,50,000	Cash and Bank	50,000	40,000
Proposed Dividend	2,10,000	2,50,000			
	33,85,000	40,85,000		33,85,000	40,85,000

Additional Information:

- (i) Depreciation charged on Plant and Land & Buildings during the year was ₹ 50,000 and ₹ 1,00,000 respectively.
- (ii) Income-Tax ₹ 1,75,000 was paid during the year 2013-14.
- (iii) An Interim Dividend of ₹ 1,00,000 has been paid in 2013-14.

Prepare Cash Flow Statement.

(8 Marks)

Question No.: 16 – November 2014 exam

Balance Sheets of Star Ltd. are as under:

Balance Sheet				(in lakh ₹)	
Liabilities	31/03/13 ₹	31/03/14 ₹	Assets	31/03/13 ₹	31/03/14 ₹
Share Capital	24.00	30.00	Plant & Machinery	15.00	21.00
Reserve	4.50	6.00	Buildings	12.00	18.00
Profit & Loss A/c	1.80	3.00	Investments	-	3.00
Debentures	-	6.00	Sundry Debtors	21.00	15.00
Provision for Taxation	2.10	3.00	Stock	6.00	12.00
Proposed Dividend	3.00	6.00	Cash in hand/Bank	6.00	6.00
Sundry Creditors	24.60	21.00			
Total	60.00	75.00		60.00	75.00

With the help of following additional information, prepare Cash Flow Statement:

- (i) Depreciation on plant and machinery was charged @ 25% on its opening balance and on building @ 10% on its opening balance.
- (ii) During the year an old machine costing ₹ 1,50,000 (written down value ₹ 60,000) was sold for ₹ 1,05,000.
- (iii) ₹ 1,50,000 was paid towards Income-tax, during the year.

(8 Marks)

Question No.: 17 – November 2014 exam

From the following information, prepare Balance Sheet of a firm:

Stock Turnover Ratio (based on cost of goods sold) -	7 times
Rate of Gross Profit to Sales	- 25%
Sales to Fixed Assets	- 2 times
Average debt collection period	- 1.5 months
Current Ratio	- 2
Liquidity Ratio	- 1.25

Net Working Capital	-	₹ 8,00,000
Net Worth to Fixed Assets	-	0.9 times
Reserve and Surplus to Capital	-	0.25 times
Long Term Debts	-	Nil
All Sales are on credit basis.		

(8 Marks)

Question No.18 – May 2017 RTP

From the following information, prepare a summarised Balance Sheet as at 31st March, 2016:

Working Capital	₹2,40,000
Bank overdraft	₹40,000
Fixed Assets to Proprietary ratio	0.75
Reserves and Surplus	₹1,60,000
Current ratio	2.5
Liquid ratio	1.5

Question No.19 – May 2017 RTP

The following are the Balance Sheet of Peacock Limited as on 31st March, 20X8 and 31st March, 20X9.

	Rupees 31 st March, 20X8	Rupees 31 st March, 20X9
Liabilities		
Share capital	44,00,000	66,00,000
Reserves and Surplus	27,50,000	38,50,000
Depreciation	8,80,000	13,20,000
Bank Loan	17,60,000	8,80,000
Trade Payables	13,20,000	14,85,000
Proposed dividend	4,00,000	6,00,000
Provision for taxation	4,00,000	5,50,000

	1,19,10,000	1,52,85,000
Assets		
Land	33,00,000	44,00,000
Plant and Machinery	50,60,000	69,30,000
Inventories	19,80,000	22,00,000
Trade Receivables	11,00,000	17,05,000

Cash and Bank balances	4,70,000	50,000
	1,19,10,000	1,52,85,000

Additional Information:

- (a) The machine which was purchased earlier for ₹ 6,00,000 was sold during the financial year 20X8-20X9 for ₹ 40,000. The book value of the machine was ₹ 60,000. A new machinery was purchased during the financial year.
- (b) The company had issued new shares to the extent of ₹22,00,000.

You are required to prepare:

1. Statement showing changes in the Working Capital;
2. Statement of Sources and Application of funds.

Question No.20 – November 2016 RTP

Assuming the current ratio of a Company is 2, state in each of the following cases whether the ratio will improve or decline or will have no change:

- (i) Payment of current liability
- (ii) Purchase of fixed assets by cash
- (iii) Cash collected from Customers
- (iv) Bills receivable dishonoured
- (v) Issue of new shares.

Question No.21 – November 2016 RTP, November 2017 RTP

Balance Sheets of RST Limited as on March 31, 20X8 and March 31, 20X9 are as under:

Liabilities	31.3.20X8 (₹)	31.3.20X9 (₹)	Assets	31.3.20X8 (₹)	31.3.20X9 (₹)
Equity Share Capital (₹10 face value per share)	10,00,000	12,00,000	Land & Building	6,00,000	7,00,000
General Reserve	3,50,000	2,00,000	Plant & Machinery	9,00,000	11,00,000
9% Preference Share Capital	3,00,000	5,00,000	Investments (Long-term)	2,50,000	2,50,000
Share Premium A/c	25,000	4,000	Stock	3,60,000	3,50,000
Profit & Loss A/c	2,00,000	3,00,000	Debtors	3,00,000	3,90,000
8% Debentures	3,00,000	1,00,000	Cash & Bank	1,00,000	95,000
Creditors	2,05,000	3,00,000	Prepaid Expenses	15,000	20,000
Bills Payable	45,000	81,000	Advance Tax Payment	80,000	1,05,000
Provision for Tax	70,000	1,00,000	Preliminary Expenses	40,000	35,000
Proposed Dividend	1,50,000	2,60,000			
	26,45,000	30,45,000		26,45,000	30,45,000

Additional information:

- (i) Depreciation charged on building and plant and machinery during the year 20X8-X9 were ₹ 50,000 and ₹ 1,20,000 respectively.
- (ii) During the year an old machine costing ₹ 1,50,000 was sold for ₹ 32,000. Its written down value was ₹ 40,000 on date of sale.
- (iii) During the year, income tax for the year 20X7-X8 was assessed at ₹76,000. A cheque of ₹ 4,000 was received along with the assessment order towards refund of income tax paid in excess, by way of advance tax in earlier years.
- (iv) Proposed dividend for 20X7-X8 was paid during the year 20X8-X9.
- (v) 9% Preference shares of ₹ 3,00,000, which were due for redemption, were redeemed during the year 20X8-X9 at a premium of 5%, out of the proceeds of fresh issue of 9% Preference shares.
- (vi) Bonus shares were issued to the existing equity shareholders at the rate of one share for every five shares held on 31.3.20X8 out of general reserves.
- (vii) Debentures were redeemed at the beginning of the year at a premium of 3%.
- (viii) Interim dividend paid during the year 20X8-X9 was ₹ 50,000.

Required:

- (a) Schedule of Changes in Working Capital; and
- (b) Fund Flow Statement for the year ended March 31, 20X9.

Question No.22 – November 2015 RTP

Based on the following particulars show various assets and liabilities of Tirupati Ltd.

Fixed assets turnover ratio	8 times
Capital turnover ratio	2 times
Inventory Turnover	8 times
Receivable turnover	4 times
Payable turnover	6 times
GP Ratio	25%

Gross profit during the year amounts to ₹ 8,00,000. There is no long-term loan or overdraft. Reserve and surplus amount to ₹ 2,00,000. Ending inventory of the year is ₹ 20,000 above the beginning inventory.

Question No.: 23 (November 2012 RTP)

The total sales (all credit) of Celloplast Limited are ₹ 6,40,000. It has a gross profit margin of 15 per cent and a current ratio of 2:5. It's current liabilities are ₹ 96,000; inventories ₹ 48,000 and cash ₹ 16,000.

You are required to determine:

- The average inventory to be carried by Celloplast Limited, if an inventory turnover of 5 times is expected? (Assume a 360-day year),
- The average collection period if the opening balance of debtors is intended to be ₹ 80,000? (Assume a 360-day year).

Question No.: 24 (May 2013 RTP)

You are required to prepare Cash Flow Statement from the information given in Income Statement and Balance Sheet of Zeta Limited:

Income Statement for the year ended March 31, 2012

	₹
Net Sales (A)	<u>2,52,00,000</u>
Less:	
Cash Cost of Sales	1,98,00,000
Depreciation	6,00,000
Salaries and Wages	24,00,000
Operating Expenses	8,00,000
Provision for Taxation	<u>8,80,000</u>
(B)	<u>2,44,80,000</u>

Net Operating Profit (A – B)	7,20,000
Non-recurring Income – Profits on sale of equipment	<u>1,20,000</u>
	8,40,000
Retained earnings and profits brought forward	<u>15,18,000</u>
	23,58,000
Dividends declared and paid during the year	<u>7,20,000</u>
Profit and Loss Account balance as on March 31, 2012	<u>16,38,000</u>

Balance Sheet as on

Assets	March 31, 2011 (₹)	March 31, 2012 (₹)
Fixed Assets:		
Land	4,80,000	9,60,000
Buildings and Equipment	36,00,000	57,60,000
Current Assets:		
Cash	6,00,000	7,20,000
Debtors	16,80,000	18,60,000
Stock	26,40,000	9,60,000
Advances	<u>78,000</u>	<u>90,000</u>
	<u>90,78,000</u>	<u>1,03,50,000</u>

Balance Sheet as on

Liabilities and Equity	March 31, 2011 (₹)	March 31, 2012 (₹)
Share Capital	36,00,000	44,40,000
Surplus in Profit and Loss Account	15,18,000	16,38,000
Sundry Creditors	24,00,000	23,40,000
Outstanding Expenses	2,40,000	4,80,000
Income-tax payable	1,20,000	1,32,000
Accumulated Depreciation on Buildings and Equipment	<u>12,00,000</u>	<u>13,20,000</u>
	<u>90,78,000</u>	<u>1,03,50,000</u>

The original cost of equipment sold during the year 2005-06 was ₹ 7,20,000.

Question No.: 25 (May 2013 RTP)

Gauravi Limited has furnished the following ratios and information relating to the year ended 31st March, 2012.

Sales	₹ 60,00,000
Return on net worth	25%
Rate of income tax	50%
Share capital to reserves	7:3
Current ratio	2
Net profit to sales	6.25%
Inventory turnover (based on cost of goods sold)	12
Cost of goods sold	₹ 18,00,000
Interest on debentures	₹ 60,000
Sundry debtors	₹ 2,00,000
Sundry creditors	₹ 2,00,000

You are required to:

- Calculate the operating expenses for the year ended 31st March, 2012.
- Prepare a balance sheet as on 31st March in the following format:

Liabilities	₹	Assets	₹
Share Capital		Fixed Assets	
Reserve and Surplus		Current Assets	
15% Debentures		Stock	
Sundry Creditors		Debtors	
		Cash	

Question No.: 26 (November 2013 RTP)

Given here is the Balance Sheet as on March 31, years 1 and 2 for Zeta Limited. Sales for year 2 was ₹2,10,000. Net income after tax was ₹7,000. In arriving at net profit, items deducted from sales included, among others, Cost of goods sold – ₹1,65,000; Depreciation - ₹5,000; Wages and Salaries – ₹20,000 and a gain of ₹1,000 on the sale of a plant. The plant had a historical cost of ₹6,000, a depreciation of ₹4,000 had been accumulated for it and it was sold for ₹3,000. This was the only asset written off during the year. The company declared and paid ₹6,000 as dividends during the year.

Balance Sheet

	March 31, Year 1	March 31, Year 2
	₹	₹
Liabilities		
Accounts Payable	20,000	18,000
Accrued expenses	2,000	4,000

Income Tax payable		1,000		1,100
Capital Stock		30,000		37,000
Retained earnings		12,650		13,650
		65,650		73,750
<u>Assets</u>				
Cash		5,000		6,000
Accounts receivable		14,000		14,000
Inventory		22,000		8,000
Prepaid Insurance		200		250
Prepaid rent		150		100
Pre-paid property tax		300		400
Land		4,000		8,000
Plant & Equipment	30,000		48,000	
Less: Accumulated Dep.	<u>10,000</u>	<u>20,000</u>	<u>11,000</u>	<u>37,000</u>
		65,650		73,750

You are required to prepare funds flow statement and describe the most significant development revealed by this statement.

Question No.27 – May 2017

Following information relate to a concern:

Debtors Velocity	3 months
Credits Velocity	2 months
Stock Turnover Ratio	1.5
Gross Profit Ratio	25%
Bills Receivables	₹ 25,000
Bills Payables	₹ 10,000
Gross Profit	₹ 4,00,000
Fixed Assets to turnover Ratio	4

Closing stock of the period is ₹ 10,000 above the opening stock.

Find out:

- Sales and cost of goods sold
- Sundry Debtors
- Sundry Creditors
- Closing Stock
- Fixed Assets

(8 Marks)

Question No.28 – November 2017 RTP

From the following table of financial ratios of R. Textiles Limited, comment on various ratios given at the end:

Ratios	2016	2017	Average of Textile Industry
Liquidity Ratios			
Current ratio	2.2	2.5	2.5
Quick ratio	1.5	2	1.5
Receivable turnover ratio	6	6	6
Inventory turnover	9	10	6
Receivables collection period	87 days	86 days	85 days
Operating profitability			
Operating income -ROI	25%	22%	15%
Operating profit margin	19%	19%	10%
Financing decisions			
Debt ratio	49.00%	48.00%	57%
Return			
Return on equity	24%	25%	15%

Comment on the following aspect of R. Textiles Limited

- (i) Liquidity
- (ii) Operating profits
- (iii) Financing
- (iv) Return to the shareholders

CHAPTER 4: FINANCING DECISIONS

Question No.1 (November 2016)

ABC Company's equity share is quoted in the market at ₹ 25 per share currently. The company pays a dividend of ₹ 2 per share and the investor's market expects a growth rate of 6% per year.

You are required to:

- (i) Calculate the company's cost of equity capital.
- (ii) If the anticipated growth rate is 8% per annum, calculate the indicated market price per share.
- (iii) If the company issues 10% debentures of face value of ₹ 100 each and realises ₹ 96 per debenture while the debentures are redeemable after 12 years at a premium of 12%, what will be the cost of debenture?

Assume Tax Rate to be 50%.

Question No.2 – November 2016

The following information is related to YZ Company Ltd. for the year ended 31st March, 2016:

Equity share capital (of ₹ 10 each)	₹ 50 lakhs
12% Bonds of ₹ 1,000 each	₹ 37 lakhs
Sales	₹ 84 lakhs
Fixed cost (excluding interest)	₹ 6.96 lakhs
Financial leverage	1.49
Profit-volume Ratio	27.55%
Income Tax Applicable	40%

You are required to calculate:

- (i) Operating Leverage;
- (ii) Combined leverage; and
- (iii) Earnings per share.

Show calculations upto two decimal points.

(5 × 4 = 20 Marks)

Question No.3 – November 2016

India Limited requires ₹ 50,00,000 for a new plant. This Plant is expected to yield earnings before interest and taxes of ₹ 10,00,000. While deciding about the financial plan, the company considers the objective of maximising earnings per share. It has three alternatives to finance the project- by raising debt of ₹ 5,00,000 or ₹ 20,00,000 or ₹ 30,00,000 and the balance, in each case, by issuing equity shares. The company's share is currently selling at ₹ 150, but is expected to decline to ₹ 125 in case the funds are borrowed in excess of ₹ 20,00,000. The funds can be borrowed at the rate of 9 percent upto ₹ 5,00,000, at 14 percent over ₹ 5,00,000 and upto ₹ 20,00,000 and at 19

percent over ₹ 20,00,000. The tax rate applicable to the company is 40 percent. Which form of financing should company choose? Show EPS Amount upto two decimal points.

Question No.4 – November 2016

Following is the capital structure of RBT Limited as on 31st March 2016:

Particulars	Book Value (₹)	Market Value (₹)
Equity Shares of ₹ 10 each	50,00,000	1,05,00,000
Retained earnings	13,00,000	-
11% Preference shares of ₹ 100 each	7,00,000	9,00,000
14% debentures of ₹ 100 each.	30,00,000	36,00,000

Market price of equity shares is ₹ 40 per share and it is expected that a dividend of ₹ 4 per share would be declared. The dividend per share is expected to grow at the rate of 8% every year. Income tax rate applicable to the company is 40% and shareholder's personal income tax rate is 20%.

You are required to calculate:

- Cost of capital for each source of capital,
- Weighted average cost of capital on the basis of book value weights,
- Weighted average cost of capital on the basis of market value weights. **(8 Marks)**

Question No.5 – May 2016

A company had the following balance sheet as on 31st March, 2015

Liabilities	Amount (₹)	Assets	Amount (₹)
Equity share capital of ₹ 10 each	40,00,000	Fixed Assets (Net)	1,28,00,000
Reserve & Surplus	8,00,000	Current Assets	32,00,000
15% Debentures	80,00,000		
Current Liabilities	32,00,000		
	1,60,00,000		1,60,00,000

The additional information given is as under:

Fixed cost per annum (excluding interest)	₹ 32,00,000
Variable operating cost ratio	70%
Total assets turnover ratio	2.5
Income tax rate	30%

Calculate the following:

- Operating Leverage
- Financial Leverage
- Combined Leverage
- Earning per share

Question No.6 – May 2016

The X Company has following capital structure at 31st March, 2015 which is considered to be optimum.

	₹
14% Debentures	3,00,000
11% Preference Shares	1,00,000
Equity (1,00,000 shares)	16,00,000
	20,00,000

The company's share has a current market price of ₹23.60 per share. The expected dividend per share next year is 50% of 2015 EPS. The following are the earning per share figure for the company during proceeding ten years. The past trends are expected to continue.

Year	EPS (₹)	Year	EPS (₹)
2006	1.00	2011	1.61
2007	1.10	2012	1.82
2008	1.21	2013	1.95
2009	1.33	2014	2.15
2010	1.46	2015	2.36

The company issued new debentures carrying 16% rate of interest and the current market price of debenture is ₹96.

Preference shares ₹ 9.20 (with dividend of ₹ 1.1 per share) were also issued. The company is in 50% tax bracket.

- Calculate after tax cost of (a) New debt (b) New Preference share (c) New equity share (consuming new equity from retained earnings).
- Calculate marginal cost of capital when no new shares was issued.
- How much can be spent for capital investment before new ordinary shares must be sold? Assuming the retained earning for next year's investment are 50% of 2015.
- What will be the marginal cost of capital when the funds exceeds the amount calculated in (iii), assuming new equity is issued at ₹ 20 per share? (8 Marks)

Question no.7 – November 2015

From the following details of X Ltd., prepare the Income Statement for the year ended 31st December, 2014:

Financial Leverage	2
Interest	₹ 2,000
Operating Leverage	3
Variable cost as a percentage of sales	75%

*Income tax rate**30%***Question no.8 – November 2015**

A company issues 25,000, 14% debentures of ₹ 1,000 each. The debentures are redeemable after the expiry period of 5 years. Tax rate applicable to the company is 35% (including surcharge and education cess).

Calculate the cost of debt after tax if debentures are issued at 5% discount with 2% flotation cost.
(4 × 5 = 20 Marks)

Question No.9 – November 2015

RST Ltd. is expecting an EBIT of ₹ 4 lakhs for F.Y. 2015-16. Presently the company is financed entirely by equity share capital of ₹ 20 lakhs with equity capitalization rate of 16%. The company is contemplating to redeem part of the capital by introducing debt financing. The company has two options to raise debt to the extent of 30% or 50% of the total fund.

It is expected that for debt financing upto 30%, the rate of interest will be 10% and equity capitalization rate will increase to 17%. If the company opts for 50% debt, then the interest rate will be 12% and equity capitalization rate will be 20%.

You are required to compute value of the company; its overall cost of capital under different options and also state which is the best option.
(8 Marks)

Question No.: 10 (May 2012 exam – 5 Marks)

RES Ltd. is an all equity financed company with a market value of ₹ 25,00,000 and cost of equity $K_e = 21\%$. The company wants to buyback equity shares worth ₹ 5,00,000 by issuing and raising 15% perpetual debt of the same amount. Rate of tax may be taken as 30%. After the capital restructuring and applying MM Model (with taxes), you are required to calculate:

- (i) Market value of RES Ltd.*
- (ii) Cost of Equity K_e*
- (iii) Weighted average cost of capital and comment on it.*

Question No.: 11 (May 2012 exam – 8 Marks)

The capital structure of JCPL Ltd. is as follows:

	₹
Equity share capital of ₹ 10 each	8,00,000
8% Preferences share capital of ₹ 10 each	6,25,000
10% Debenture of ₹ 100 each	<u>4,00,000</u>
	<u>18,25,000</u>

Additional Information:

Profit after tax (tax rate 30%) ₹ 1,82,000

Operating expenses (including depreciation ₹ 90,000) being 1.50 times of EBIT

Equity share dividend paid 15%.

Market price per equity share ₹ 20.

Require to calculate:

- Operating and financial leverage.
- Cover for the preference and equity share of dividends.
- The earning yield and price earnings ratio.
- The net fund flow.

(8 Marks)

Question No.: 12 (November 2012 exam – 5 Marks)

X Limited has estimated that for a new product its break-even point is 20,000 units if the item is sold for 14 per unit and variable cost ₹ 9 per unit. Calculate the degree of operating leverage for sales volume 25,000 units and 30,000 units.

Question No.: 13 (May 2013 exam – 5 Marks)

A company issued 40,000, 12% Redeemable Preference Share of ₹ 100 each at a premium of ₹ 5 each, redeemable after 10 years at a premium of ₹ 10 each. The flotation cost of each share is ₹ 2.

You are required to calculate cost of preference share capital ignoring dividend tax.

Question No.: 14 (May 2013 exam – 6 Marks)

The following information related to XL Company Ltd. for the year ended 31st March, 2013 are available to you:

Equity share capital of ₹ 10 each ₹ 25 lakh

11% Bonds of ₹ 1000 each	₹ 18.5 lakh
Sales	₹ 42 lakh
Fixed cost (Excluding Interest)	₹ 3.48 lakh
Financial leverage	1.39
Profit-Volume Ratio	25.55%
Income Tax Rate Applicable	35%

You are required to calculate:

- (i) Operating Leverage;
- (ii) Combined Leverage; and
- (iii) Earning per Share.

(6 Marks)

Question No.: 15 (November 2013 exam – 5 Marks)

Calculate the degree of operating leverage, degree of financial leverage and the degree of combined leverage for the following firms :

	N	S	D
Production (in units)	17,500	6,700	31,800
Fixed costs	₹ 4,00,000	3,50,000	2,50,000
Interest on loan	₹ 1,25,000	75,000	Nil
Selling price per unit	₹ 85	130	37
Variable cost per unit	₹ 38.00	42.50	12.00

Question No.: 16 (November 2013 exam – 5 Marks)

X Ltd. is considering the following two alternative financing plans:

	Plan - I	Plan - II
	₹	₹
Equity shares of ₹ 10 each	4,00,000	4,00,000
12% Debentures	2,00,000	-
Preference Shares of ₹ 100 each	-	2,00,000
	₹ 6,00,000	6,00,000

The indifference point between the plans is ₹ 2,40,000. Corporate tax rate is 30%. Calculate the rate of dividend on preference shares.

Question No.: 17 (May 2014 exam – 5 Marks)

The following details are provided by the GPS Limited :

	₹
Equity Share Capital	65,00,000

12% Preference Share Capital	12,00,000
15% Redeemable Debentures	20,00,000
10% Convertible Debentures	8,00,000

The cost of equity capital for the company is 16.30% and Income Tax rate for the company is 30%.

You are required to calculate the Weighted Average Cost of Capital (WACC) of the company.

Question No.: 18 (May 2014 exam – 8 Marks)

A company had the following Balance Sheet as on 31st March, 2014:

Liabilities	₹ (In crores)	Assets	(₹ In crores)
Equity Share Capital (50 lakhs shares of ₹ 10 each)	5		
Reserves and Surplus	1	Fixed Assets (Net)	12.5
15% Debentures	10	Current Assets	7.5
Current Liabilities	4		
	20		20

The additional information given is as under:

Fixed cost per annum (excluding interest)	₹ 4 crores
Variable operating cost ratio	65%
Total assets turnover ratio	2.5
Income Tax rate	30%

Required:

Calculate the following and comment:

- Earnings Per Share
- Operating Leverage
- Financial Leverage
- Combined Leverage

(8 Marks)

Question No.:19 – November 2014 exam

Alpha Limited requires funds amounting to ₹ 80 lakhs for its new project. To raise the funds, the company has following two alternatives:

- (i) to issue Equity Shares (at par) amounting to ₹ 60 lakhs and borrow the balance amount at the interest of 12% p.a.; or
- (ii) to issue Equity Shares (at par) and 12% Debentures in equal proportion.

The Income-tax rate is 30%.

Find out the point of indifference between the available two modes of financing and state which option will be beneficial in different situations.

Question No.: 20 – November 2014 exam

'A' Ltd. and 'B' Ltd. are identical in every respect except capital structure. 'A' Ltd. does not employ debts in its capital structure whereas 'B' Ltd. employs 12% Debentures amounting to ₹ 10 lakhs. Assuming that :

- (i) All assumptions of M-M model are met;
- (ii) Income-tax rate is 30%;
- (iii) EBIT is ₹ 2,50,000 and
- (iv) The Equity capitalization rate of 'A' Ltd. is 20%.

Calculate the value of both the companies and also find out the Weighted Average Cost of Capital for both the companies.

Question No.: 21 – November 2014 exam

The Capital structure of RST Ltd. is as follows:

	₹
Equity Share of ₹ 10 each	8,00,000
10% Preference Share of ₹ 100 each	5,00,000
12% Debentures of ₹ 100 each	7,00,000
	<u>20,00,000</u>

Additional Information:

- Profit after tax (Tax Rate 30%) are ₹ 2,80,000
- Operating Expenses (including Depreciation ₹ 96,800) are 1.5 times of EBIT
- Equity Dividend paid is 15%
- Market price of Equity Share is ₹ 23

Calculate:

- (i) Operating and Financial Leverage
- (ii) Cover for preference and equity dividend
- (iii) The Earning Yield Ratio and Price Earning Ratio
- (iv) The Net Fund Flow

Note: All operating expenses (excluding depreciation) are variable.

(8 Marks)

Question No.: 22 – May 2015 exam

Following information are related to four firms of the same industry :

<i>FIRM</i>	<i>Change in Revenue</i>	<i>Change in Operating Income</i>	<i>Change in Earning per Share</i>
P	27%	25%	30%
Q	25%	32%	24%
R	23%	36%	21%
S	21%	40%	23%

Find out:

- degree of operating leverage, and*
- degree of combined leverage for all the firms.*

Question No.:23 – May 2015 exam

SSR Ltd. has furnished the following ratios and information relating to the year ended 31st March, 2015.

<i>Sales</i>	<i>₹ 60 Lacs</i>
<i>Return on Net worth</i>	<i>25%</i>
<i>Rate of Income tax</i>	<i>50%</i>
<i>Share Capital to reserves</i>	<i>7:3</i>
<i>Current Ratio</i>	<i>2</i>
<i>Net-Profit to Sales (after tax)</i>	<i>6.25%</i>
<i>Inventory Turnover</i>	<i>12</i>
<i>(Based on cost of goods sold and closing stock)</i>	
<i>Cost of goods sold</i>	<i>₹ 18 Lacs</i>
<i>Interest on Debentures (@ 15%)</i>	<i>₹ 60,000</i>
<i>Sundry Debtors</i>	<i>₹ 2 Lacs</i>
<i>Sundry Creditors</i>	<i>₹ 2 Lacs</i>

You are required to :

- Calculate the operating expenses for the year ended 31st March, 2015.*
- Prepare a Balance Sheet as on 31st March, 2015.* *(8 Marks)*

Question No.:24 – May 2015 exam

A Ltd. wishes to raise additional finance of ₹ 30 lakhs for meeting its investment plans. The company has ₹ 6,00,000 in the form of retained earnings available for investment purposes.

The following are the further details:

- Debt equity ratio - 30 : 70
- Cost of debt - at the rate of 11 % (before tax) upto ₹ 3,00,000 and 14% (before tax) beyond that.
- Earnings per share - ₹ 15.
- Dividend payout - 70% of earnings.
- Expected growth rate in dividend - 10%.
- Current market price per share - ₹ 90.
- Company's tax rate is 30% and shareholder's Personal tax rate is 20%.

You are required to :

- (i) Calculate the post tax average cost of additional debt.
- (ii) Calculate the cost of retained earnings and cost of equity.
- (iii) Calculate the overall weighted average (after tax) cost of additional finance.

Question No.25 - May 2017 RTP

XYZ Ltd. is currently earning a profit after tax of ₹25,00,000 and its shares are quoted in the market at ₹450 per share. The company has 1,00,000 shares outstanding and has not debt in its capital structure. It is expected that the same level of earnings will be maintained for future years also. The company has 100 per cent pay-out policy.

Required:

- (i) Calculated the Cost of equity
- (ii) If the company's pay-out ratio is assumed to be 70% and it earns 20% rate of return on its investment, then what would be the firm's cost of equity?

Question No.26 - May 2017 RTP

A Company needs ₹31,25,000 for the construction of a new plant. The following three plans are feasible:

- I The Company may issue 3,12,500 equity shares at ₹10 per share.
- II The Company may issue 1,56,250 equity shares at ₹10 per share and 15,625 debentures of ₹100 denomination bearing an 8% rate of interest.
- III The Company may issue 1,56,250 equity shares at ₹10 per share and 15,625 preference shares at ₹ 100 per share bearing an 8% rate of dividend.

- (i) If the Company's earnings before interest and taxes are ₹ 62,500, ₹1,25,000, ₹ 2,50,000, ₹3,75,000 and ₹ 6,25,000, what are the earnings per share under each of three financial plans? Assume a Corporate Income tax rate of 40%.
- (ii) Which alternative would you recommend and why?
- (iii) Determine the EBIT-EPS indifference points by formulae between Financing Plan I and Plan II and Plan I and Plan III.

Question No.27 – May 2017 RTP

Calculate the operating leverage, financial leverage and combined leverage from the following data under Situation I and II and Financial Plan A and B:

Installed Capacity	4,000 units
Actual Production and Sales	75% of the Capacity
Selling Price	₹30 per unit
Variable Cost	₹15 per unit

Fixed Cost:

Under Situation I	₹15,000
Under Situation-II	₹20,000

Capital Structure:

	Financial Plan	
	A (₹)	B (₹)
Equity	10,000	15,000
Debt (Rate of Interest at 20%)	10,000	5,000
	20,000	20,000

Question No.28 – November 2016 RTP

M/s. Sensation Corporation has a capital structure of 40% debt and 60% equity. The company is presently considering several alternative investment proposals costing less than ₹ 20 lakhs. The corporation always raises the required funds without disturbing its present debt equity ratio.

The cost of raising the debt and equity are as under:

Project cost	Cost of debt	Cost of equity
Upto ₹ 2 lakhs	10%	12%
Above ₹ 2 lakhs & upto to ₹ 5 lakhs	11%	13%

Above ₹ 5 lakhs & upto ₹10 lakhs	12%	14%
Above ₹10 lakhs & upto ₹ 20 lakhs	13%	14.5%

Assuming the tax rate at 50% calculate:-

- Cost of capital of two projects X and Y whose fund requirements are ₹ 6.5 lakhs and ₹ 14 lakhs respectively.
- If a project is expected to give after tax return of 10% determine under what conditions it would be acceptable?

Question No.29 – November 2016 RTP

The capital structure of the Shiva Ltd. consists of equity share capital of ₹ 10,00,000 (shares of ₹ 100 per value) and ₹ 10,00,000 of 10% Debentures, sales increased by 20% from 1,00,000 units to 1,20,000 units, the selling price is ₹ 10 per unit: variable costs amount to ₹ 6 per unit and fixed expenses amount to ₹ 2,00,000. The income-tax rate is assumed to be 50%.

- You are required to calculate the following:
 - The percentage increase in earnings per share;
 - Financial leverage at 1,00,000 units and 1,20,000 units.
 - Operating leverage at 1,00,000 units and 1,20,000 units.
- Comment on the behaviour of Operating and Financial leverages in relation to increase in production from 1,00,000 units to 1,20,000 units.

Question No.30 – May 2016 RTP

As a financial analyst of a large electronics company, you are required to determine the weighted average cost of capital of the company using (a) book value weights and (b) market value weights. The following information is available for your perusal.

The Company's present book value capital structure is:

	(₹)
Debentures (₹ 100 per debenture)	8,00,000
Preference shares (₹ 100 per share)	2,00,000
Equity shares (₹ 10 per share)	<u>10,00,000</u>
	<u>20,00,000</u>

All these securities are traded in the capital markets. Recent prices are:

Debentures, ₹110 per debenture, Preference shares, ₹120 per share, and Equity shares, ₹ 22 per share

Anticipated external financing opportunities are:

- (i) ₹ 100 per debenture redeemable at par; 10 year maturity, 11 per cent coupon rate, 4 per cent flotation costs, sale price, ₹ 100
- (ii) ₹ 100 preference share redeemable at par; 10 year maturity, 12 per cent dividend rate, 5 per cent flotation costs, sale price, ₹100.
- (iii) Equity shares: ₹ 2 per share flotation costs, sale price = ₹ 22.

In addition, the dividend expected on the equity share at the end of the year is ₹ 2 per share, the anticipated growth rate in dividends is 7 per cent and the firm has the practice of paying all its earnings in the form of dividends. The corporate tax rate is 35 per cent.

Question No.31 – May 2016 RTP

Akash Limited provides you the following information:

	(₹)
Profit (EBIT)	2,80,000
Less: Interest on Debenture @ 10%	40,000
EBT	2,40,000
Less Income Tax @ 50%	1,20,000
	1,20,000
No. of Equity Shares (₹ 10 each)	30,000
Earnings per share (EPS)	4
Price /EPS (PE) Ratio	10

The company has reserves and surplus of ₹ 7,00,000 and required ₹ 4,00,000 further for modernisation. Return on Capital Employed (ROCE) is constant. Debt (Debt/ Debt + Equity) Ratio higher than 40% will bring the P/E Ratio down to 8 and increase the interest rate on additional debts to 12%. You are required to ascertain the probable price of the share.

- (i) If the additional capital are raised as debt; and
- (ii) If the amount is raised by issuing equity shares at ruling market price.

Question No.32 – November 2015 RTP

Navya Limited wishes to raise additional capital of ₹10 lakhs for meeting its modernisation plans. It has ₹ 3,00,000 in the form of retained earnings available for investments purposes. The following are the further details:

Debt/equity mix	40%/60%
Cost of debt (before tax)	
Upto ₹ 1,80,000	10%
Beyond ₹ 1,80,000	16%
Earnings per share	₹ 4
Dividend pay out	₹ 2
Expected growth rate in dividend	10%
Current market price per share	₹ 44
Tax rate	50%

You are required:

- To ascertain the pattern for raising the additional finance.
- To calculate the post-tax average cost of additional debt.
- To calculate the cost of retained earnings and cost of equity, and
- Find out the overall weighted average cost of capital (after tax).

Question No.33 – November 2015 RTP

Company P and Q are identical in all respects including risk factors except for debt/equity, company P having issued 10% debentures of ₹ 18 lakhs while company Q is unlevered. Both the companies earn 20% before interest and taxes on their total assets of ₹ 30 lakhs.

Assuming a tax rate of 50% and capitalization rate of 15% from an all-equity company. Compute the value of companies P and Q using (i) Net Income Approach and (ii) Net Operating Income Approach.

Question No.34 – November 2015 RTP

A firm has sales of ₹ 75,00,000 variable cost is 56% and fixed cost is ₹ 6,00,000. It has a debt of ₹ 45,00,000 at 9% and equity of ₹ 55,00,000.

- (i) What is the firm's ROI?
- (ii) Does it have favourable financial leverage?
- (iii) If the firm belongs to an industry whose capital turnover is 3, does it have a high or low capital turnover?
- (iv) What are the operating, financial and combined leverages of the firm?
- (v) If the sales is increased by 10% by what percentage EBIT will increase?
- (vi) At what level of sales the EBT of the firm will be equal to zero?
- (vii) If EBIT increases by 20%, by what percentage EBT will increase?

Question No.: 35 (November 2012 RTP)

Kalyani Steels Limited requires ₹ 5,00,000 for construction of a new plant. It is considering three financial plans:

- (i) The company may issue 50,000 ordinary shares at ₹ 10 per share;
- (ii) The company may issue 25,000 ordinary shares at ₹ 10 per share and 2,500 debentures of ₹ 100 denominations bearing a 8 per cent rate of interest; and
- (iii) The company may issue 25,000 ordinary shares at ₹ 10 per share and 2,500 preference shares at ₹ 100 per share bearing a 8 per cent rate of dividend.

If Kalyani Steels Limited's earnings before interest and taxes are ₹ 10,000; ₹ 20,000; ₹ 40,000; ₹ 60,000 and ₹ 1,00,000, you are required to compute the earnings per share under each of the three financial plans? Which alternative would you recommend for Kalyani Steels and why?

Question No.:36 (May 2013 RTP & May 2014 RTP)

The following figures of Theta Limited are presented as under:

		₹
Earnings before Interest and Tax		23,00,000
Less: Debenture Interest @ 8%	80,000	
Long Term Loan Interest @ 11%	<u>2,20,000</u>	<u>3,00,000</u>
		20,00,000
Less: Income Tax		<u>10,00,000</u>
Earnings after tax		10,00,000

No. of Equity Shares of ₹ 10 each	5,00,000
EPS	₹ 2
Market Price of Share	₹ 20
P/E Ratio	10

The company has undistributed reserves and surplus of ₹ 20 lakhs. It is in need of ₹ 30 lakhs to pay off debentures and modernise its plants. It seeks your advice on the following alternative modes of raising finance.

Alternative 1 - Raising entire amount as term loan from banks @ 12%.

Alternative 2 - Raising part of the funds by issue of 1,00,000 shares of ₹ 20 each and the rest by term loan at 12 percent.

The company expects to improve its rate of return by 2 percent as a result of modernisation, but P/E ratio is likely to go down to 8 if the entire amount is raised as term loan.

- Advise the company on the financial plan to be selected.
- If it is assumed that there will be no change in the P/E ratio if either of the two alternatives is adopted, would your advice still hold good?

Question No.:37 (November 2013 RTP)

Company XYZ is unlevered and has a cost of equity of 20 percent and a total market value of ₹10,00,00,000. Company ABC is identical to XYZ in all respects except that it uses debt finance in its capital structure with a market value of ₹4,00,00,000 and a cost of 10 percent. Find the market value of equity, weighted average cost of capital and cost of equity of ABC if the tax advantage of debt is 25 percent.

Question No.: 38 (November 2013 RTP)

The following current data are available concerning Theta Limited:

Share issued	10,000
Market price per share	₹20
Interest rate	12%
Tax Rate	46%
Expected EBIT	₹15,000

The company requires an additional ₹50,000 for the coming year.

You are required to determine:

- Which financing option (debt or equity issue) will give higher EPS for the expected EBIT?
- What is indifference level of EBIT for the two alternatives?
- What is EPS for that EBIT?

Question No.: 39 (May 2014 RTP)

The following is an extract from the financial statements of Zeta Limited:

	<i>Amount (₹ lakhs)</i>
Operating Profit	105.0
<i>Less: Interest on Debentures</i>	<u>33.0</u>
Earnings before Taxes	72.0
<i>Less: Income Tax (35%)</i>	<u>25.2</u>
Earnings after Taxes	<u>46.8</u>
Equity Share Capital (shares of ₹ 10 each)	200.0
Reserves and Surplus	100.0
15% Non-Convertible Debentures (of ₹ 100 each)	<u>220.0</u>
	520.0

The market price per equity share is ₹ 12 and per debenture is ₹ 93.75.

You are required to calculate:

- The earnings per share.
- The percentage cost of capital to the company for debentures and the equity.

Question No.: 40 (November 2014 RTP)

Gamma Limited has the following capital structure which is considered to be optimum as on 31st March, 2014.

	₹
14% Debentures	30,000
11% Preference shares	10,000
Equity (10,000 shares)	1,60,000
	2,00,000

The company share has a market price of ₹ 23.60. Next year dividend per share is 50% of year 2014 EPS. The following is the trend of EPS for the preceding 10 years which is expected to continue in future.

Year	EPS (₹)	Year	EPS (₹)
2005	1.00	2010	1.61
2006	1.10	2011	1.77
2007	1.21	2012	1.95
2008	1.33	2013	2.15
2009	1.46	2014	2.36

The company issued new debentures carrying 16% rate of interest and the current market price of debenture is ₹ 96.

Preference shares ₹ 9.20 (with annual dividend of ₹ 1.1 per share) were also issued. The company is in 50% tax bracket.

- (a) Calculate after tax:
 - (i) Cost of new debt
 - (ii) Cost of new preference shares
 - (iii) New equity share (consuming new equity from retained earnings)
- (b) Calculate marginal cost of capital when no new shares are issued.
- (c) How much needs to be spent for capital investment before issuing new shares? 50% of the 2014 earnings are available as retained earnings for the purpose of capital investment.
- (d) What will the marginal cost of capital when the funds exceed the amount calculated in (c), assuming new equity is issued at ₹ 20 per share?

Question No.:41 – November 2014 RTP

Theta Limited has a total capitalization of ₹ 10 Lakhs consisting entirely of equity shares of ₹ 50 each. It wishes to raise another ₹ 5 lakhs for expansion through one of its two possible financial plans.

- (1) All equity shares of ₹ 50 each.
- (2) All debentures carrying 9% interest.

The present level of EBIT is ₹ 1,40,000 and Income tax rate is 50%.

Calculate EBIT level at which earnings per share would remain the same irrespective of raising funds through equity shares or debentures.

Question No.: 42 – May 2015 RTP, November 2017 RTP

Sohna Limited's sales, variable costs and fixed cost amount to ₹ 75,00,000, ₹ 42,00,000 and ₹ 6,00,000 respectively. It has borrowed ₹ 45,00,000 at 9 per cent and its equity capital totals ₹ 55,00,000.

- (a) What is Sohn Limited's ROI?
- (b) Does it have favourable financial leverage?
- (c) If Sohn Limited belongs to an industry whose asset turnover is 3, does it have a high or low asset leverage?
- (d) What are the operating, financial and combined leverages of Sohn Limited?
- (e) If the sales drops to ₹ 50,00,000, what will the new EBIT be?

Question No.: 43 – May 2015 RTP, November 2017 RTP

Meta Limited wishes to raise additional finance of ₹ 10 lakhs for meeting its investment plans. It has ₹ 2,10,000 in the form of retained earnings available for investment purposes. Further details are as following:

(1)	Debt / Equity mix	30%/70%
(2)	Cost of Debt	
	Upto ₹ 1,80,000	10% (before tax)
	Beyond ₹ 1,80,000	16% (before tax)
(3)	Earnings per Share	₹ 4
(4)	Dividend Pay out	50% of Earnings
(5)	Expected Growth Rate in Dividend	10%
(6)	Current Market Price per share	₹ 44
(7)	Tax Rate	50%

You are required:

- (a) To determine the pattern for raising the additional finance.
- (b) To determine the post-tax average cost of additional debt.

- (c) To determine the cost of retained earnings and cost of equity, and
 (d) Compute the overall weighted average after tax cost of additional finance.

Question No.44 – May 2017

You are given the following information of 5 firms of the same industry:

Name of the Firm	Change in Revenue	Change in Operating Income	Change in Earning per share
M	28%	26%	32%
N	27%	34%	26%
P	25%	38%	23%
Q	23%	43%	27%
R	25%	40%	28%

You are required to calculate:

- (i) Degree of operating leverage and
 (ii) Degree of combined leverage for all firms. (5 Marks)

Question No.45 – May 2017

PNR Limited and PXR Limited are identical in every respect except capital structure. PNR limited does not employ debts in its capital structure whereas PXR Limited employs 12% Debentures amounting to ₹ 20,00,000. The following additional information are given to you:

- (i) Income tax rate is 30%
 (ii) EBIT is ₹ 5,00,000
 (iii) The equity capitalization rate of PNR Limited is 20% and
 (iv) All assumptions of Modigliani - Miller Approach are met.

Calculate:

- (i) Value of both the companies,
 (ii) Weighted average cost of capital for both the companies. (8 Marks)

Question No.46 – November 2017 RTP

Akash Limited provides you the following information:

	(₹)
Profit (EBIT)	2,80,000

Less: Interest on Debenture @ 10%	40,000
EBT	2,40,000
Less Income Tax @ 50%	1,20,000
	1,20,000
No. of Equity Shares (₹ 10 each)	30,000
Earnings per share (EPS)	4
Price /EPS (PE) Ratio	10

The company has reserves and surplus of ₹ 7,00,000 and required ₹ 4,00,000 further for modernisation. Return on Capital Employed (ROCE) is constant. Debt (Debt/ Debt + Equity) Ratio higher than 40% will bring the P/E Ratio down to 8 and increase the interest rate on additional debts to 12%. You are required to ascertain the probable price of the share.

- (i) If the additional capital is raised as debt; and
- (ii) If the amount is raised by issuing equity shares at ruling market price.

CHAPTER 6: INVESTMENT DECISIONS

Question No.1 – May 2016

Given below are the data on a capital project 'C':

Cost of the project	₹ 2,28,400
Useful life	4 years
Profitability index	1.0417
Internal rate of return	15%
Salvage value	0

You are required to calculate:

- Annual cash flow
- Cost of capital
- Net present value (NPV)
- Discounted payback period

Given the following table of discount factors:

Discount Factor	15%	14%	13%	12%
1 years	0.869	0.877	0.885	0.893
2 years	0.756	0.769	0.783	0.797
3 years	0.658	0.675	0.693	0.712
4 years	0.572	0.592	0.613	0.636

Question No.: 2 (November 2012 exam – 10 Marks)

SS Limited is considering the purchase of a new automatic machine which will carry out some operations which are at present performed by manual labour. NM-A₁ and NM-A₂, two alternative models are available in the market. The following details are collected :

(10 Marks)

		Machine	
		NM-A ₁	NM-A ₂
Cost of Machine	(₹)	20,00,000	25,00,000
Estimated working life		5 Years	5 Years
Estimated saving in direct wages per annum	(₹)	7,00,000	9,00,000
Estimated saving in scrap per annum	(₹)	60,000	1,00,000

Estimated additional cost of indirect material per annum (₹)	30,000	90,000
Estimated additional cost of indirect labour per annum (₹)	40,000	50,000
Estimated additional cost of repairs and maintenance per annum (₹)	45,000	85,000

Depreciation will be charged on a straight line method. Corporate tax rate is 30 percent and expected rate of return may be 12 percent.

You are required to evaluate the alternatives by calculating the:

- Pay-back Period
- Accounting (Average) Rate of Return; and
- Profitability Index or P.V. Index (P.V. factor for ₹ 1 @ 12% 0.893; 0.797; 0.712; 0.636; 0.567; 0.507)

Question No.: 3 (May 2013 exam – 9 Marks)

PQR Company Ltd. Is considering to select a machine out of two mutually exclusive machines. The company's cost of capital is 12 per cent and corporate tax rate is 30 per cent. Other information relating to both machines is as follows:

	Machine – I	Machine – II
Cost of Machine	₹ 15,00,000	₹ 20,00,000
Expected Life	5 Yrs.	5 Yrs.
Annual Income (Before Tax and Depreciation)	₹ 6,25,000	₹ 8,75,000

Depreciation is to be charged on straight line basis:

You are required to calculate:

- Discounted Pay Back Period
- Net Present Value
- Profitability Index

The present value factors of ₹ 1 @ 12% are as follows:

Year	01	02	03	04	05	
PV factor @ 12%	0.893	0.797	0.712	0.636	0.567	(9 Marks)

Question No.: 4 (November 2013 exam – 8 Marks)

APZ Limited is considering to select a machine between two machines 'A' and 'B'. The two machines have identical capacity, do exactly the same job, but designed differently.

Machine 'A' costs ₹ 8,00,000, having useful life of three years. It costs ₹ 1,30,000 per year to run.

Machine 'B' is an economy model costing ₹ 6,00,000, having useful life of two years. It costs ₹ 2,50,000 per year to run.

The cash flows of machine 'A' and 'B' are real cash flows. The costs are forecasted in rupees of constant purchasing power. Ignore taxes.

The opportunity cost of capital is 10%.

The present value factors at 10% are :

Year	t_1	t_2	t_3
$PVIF_{0.10,1}$	0.9091	0.8264	0.7513
$PVIFA_{0.10,2} = 1.7355$			
$PVIFA_{0.10,3} = 2.4868$			

Which machine would you recommend the company to buy?

(8 Marks)

Question No.: 5 (May 2014 exam – 8 Marks)

FH Hospital is considering to purchase a CT-Scan machine. Presently the hospital is outsourcing the CT -Scan Machine and is earning commission of ₹15,000 per month (net of tax). The following details are given regarding the machine:

	₹
Cost of CT -Scan machine	15,00,000
Operating cost per annum (excluding Depreciation)	2,25,000
Expected revenue per annum	7,90,000
Salvage value of the machine (after 5 years)	3,00,000
Expected life of the machine	5 years

Assuming tax rate @ 30%, whether it would be profitable for the hospital to purchase the machine?

Give your recommendation under:

- (i) Net Present Value Method, and
- (ii) Profitability Index Method.

PV factors at 12% are given below:

Year	1	2	3	4	5
PV factor	0.893	0.797	0.712	0.636	0.567

Question no.6 – May 2017 RTP

A company has to make a choice between two projects namely A and B. The initial capital outlay of two Projects is ₹1,35,000 and ₹2,40,000 respectively for A and B. There will be no scrap value at the end of the life of both the projects. The opportunity cost of capital of the company is 16%. The annual incomes are as under:

Year	Project A	Project B	Discounting factor @ 16%
1	–	60,000	0.862
2	30,000	84,000	0.743
3	1,32,000	96,000	0.641

4	84,000	1,02,000	0.552
5	84,000	90,000	0.476

You are required to calculate for each project:

- Discounted payback period
- Profitability index
- Net present value

Question No.7 – November 2016 RTP

A Ltd. an existing profit-making company, is planning to introduce a new product with a projected life of 8 years. Initial equipment cost will be ₹ 150 lakhs and additional equipment costing ₹ 10 lakhs will be needed at the beginning of third year. At the end of the 8 years, the original equipment will have resale value equivalent to the cost of removal, but the additional equipment would be sold for ₹ 1 lakh. Working capital of ₹ 25 lakhs will be needed. The 100% capacity of the plant is of 4,00,000 units per annum, but the production and sales-volume expected are as under:

Year	Capacity in percentage
1	20
2	30
3 - 5	75
6 - 8	50

A sale price of ₹100 per unit with a profit volume ratio of 60% is likely to be obtained. Fixed Operating Cash Costs are likely to be ₹16 lakhs per annum. In addition to this the advertisement expenditure will have to be incurred as under:

Year	1	2	3 - 5	6 - 8
Expenditure each year (₹ in lakhs)	30	15	10	4

The company is subjected to 50% tax, straight-line method of depreciation, (permissible for tax purposes also) and taking 12% as appropriate after tax cost of Capital, should the project be accepted?

Question No.8 – May 2016 RTP

Navya Limited is thinking of replacing its existing machine by a new machine which would cost ₹ 60 lakhs. The company's current production is 80,000 units, and is expected to increase to 1,00,000 units, if the new machine is bought. The selling price of the product would remain unchanged at ₹ 200 per unit. The following is the cost of producing one unit of product using both the existing and new machine:

(Unit Cost in ₹)

	Existing Machine (80,000 units)	New Machine (1,00,000 units)	Difference
Materials	75.00	63.75	(11.25)
Wages & Salaries	51.25	37.50	(13.75)
Supervision	20.00	25.00	5.00
Repairs and Maintenance	11.25	7.50	(3.75)
Power and Fuel	15.50	14.25	(1.25)
Depreciation	0.25	5.00	4.75
Allocated Corporate Overheads	10.00	12.50	2.50
	183.25	165.50	(17.75)

The existing machine has an accounting book value of ₹ 1,00,000, and it has been fully depreciated for tax purpose. It is estimated that machine will be useful for 5 years. The supplier of the new machine has offered to accept the old machine for ₹ 2,50,000. However, the market price of old machine today is ₹ 1,50,000 and it is expected to be ₹ 35,000 after 5 years. The new machine has a life of 5 years and a salvage value of ₹ 2,50,000 at the end of its economic life. Assume corporate Income tax rate at 40%, and depreciation is charged on straight line basis for Income-tax purposes. Further assume that book profit is treated as ordinary income for tax purpose. The opportunity cost of capital of the Company is 15%.

Required:

- Estimate net present value of the replacement decision.
- Estimate the internal rate of return of the replacement decision.
- Should Company go ahead with the replacement decision? Suggest.

Year (t)	1	2	3	4	5
$PVIF_{0.15,t}$	0.8696	0.7561	0.6575	0.5718	0.4972
$PVIF_{0.20,t}$	0.8333	0.6944	0.5787	0.4823	0.4019
$PVIF_{0.25,t}$	0.8000	0.6400	0.5120	0.4096	0.3277
$PVIF_{0.30,t}$	0.7692	0.5917	0.4552	0.3501	0.2693
$PVIF_{0.35,t}$	0.7407	0.5487	0.4064	0.3011	0.2230

Question No.9 – November 2015 RTP

BT Pathology Lab Ltd. is using a X-ray machines which reached at the end of their useful lives. Following new X-ray machines of two different brands with same features are available for the purchase.

Brand	Cost of Machine	Life of Machine	Maintenance Cost			Rate of Depreciation
			Year 1-5	Year 6-10	Year 11-15	
XYZ	₹6,00,000	15 years	₹ 20,000	₹ 28,000	₹ 39,000	4%
ABC	₹4,50,000	10 years	₹ 31,000	₹ 53,000	—	6%

Residual Value of both of above machines shall be dropped by 1/3 of Purchase price in the first year and thereafter shall be depreciated at the rate mentioned above.

Alternatively, the machine of Brand ABC can also be taken on rent to be returned back to the owner after use on the following terms and conditions:

- Annual Rent shall be paid in the beginning of each year and for first year it shall be ₹ 1,02,000.
- Annual Rent for the subsequent 4 years shall be ₹ 1,02,500.
- Annual Rent for the final 5 years shall be ₹ 1,09,950.
- The Rent Agreement can be terminated by BT Labs by making a payment of ₹ 1,00,000 as penalty. This penalty would be reduced by ₹ 10,000 each year of the period of rental agreement.

You are required to:

- Advise which brand of X-ray machine should be acquired assuming that the use of machine shall be continued for a period of 20 years.
- Which of the option is most economical if machine is likely to be used for a period of 5 years?

The cost of capital of BT Labs is 12%.

Question No.: 10 (November 2012 RTP)

Ganpati Limited is considering the following investment projects:

Cash Flows (₹)				
Projects	C_0	C_1	C_2	C_3
A	-10,000	+10,000		
B	-10,000	+17,500	+7,500	
C	-10,000	+12,000	+4,000	+12,000
D	-10,000	+10,000	+3,000	+13,000

Rank the projects according to each of the following methods: (i) Payback, (ii) ARR, (iii) IRR and (iv) NPV; assuming discount rates of 10 and 30 per cent.

Assuming the projects are independent, which one should be accepted?

Question No.:11 (November 2012 RTP)

Carlson Limited wants to replace its old machine with a new automatic machine. Two models A and B are available at the same cost of ₹ 5 lakhs each. Salvage value of the old machine is ₹ 1 lakh. The utilities of the existing machine can be used if Carlson purchases machine A. Additional cost of utilities to be purchased in that case are ₹ 1 lakh. If it purchases machine B then all the existing utilities will have to be replaced with new utilities costing ₹ 2 lakhs. The salvage value of the old utilities will be ₹ 0.20 lakhs. The earnings after taxation are expected to be:

Year	(Cash inflows)		
	A ₹	B ₹	P.V. Factor @ 15%
1.	1,00,000	2,00,000	0.87
2.	1,50,000	2,10,000	0.76
3.	1,80,000	1,80,000	0.66
4.	2,00,000	1,70,000	0.57
5.	1,70,000	40,000	0.50
Salvage Value at the end of Year 5	50,000	60,000	

The targeted return on capital is 15%. You are required to:

- Compute the net present value, discounted payback period and desirability factor for the two machines; and
- Advice which of the machines is to be selected?

Question No.: 12 (May 2013 RTP)

Viceroy Limited has to choose between two machines A and B. The two machines are designed differently, but have identical capacity and do exactly the same job. Machine A costs ₹ 1,50,000 and will last for 3 years. It costs ₹ 40,000 per year to run. Machine B is an economy model costing only ₹ 1,00,000, but will last only for 2 years, and costs ₹ 60,000 per year to run. These are real cash flows. The costs are forecasted in rupees of constant purchasing power. Ignore tax. Opportunity cost of capital is 10 per cent. Which machine Viceroy Limited should buy?

Question No.:13 (November 2013 RTP)

Beta Limited receives ₹ 15,00,000 a year after taxes from an investment in an automatic plant that has 12 more years of service life. The company's required rate is 12%. Beta Limited can make improvements to the plant to raise its service life to 20 years and its annual after tax cash flow to ₹ 48,00,000 per year. These investments would cost ₹ 2,10,00,000. With the improvements, the plant's value at the end of 12 years would rise from ₹7,50,000 to ₹75,00,000. Would the improvements produce a return satisfactory to Beta Limited?

Question No.:14 (November 2013 RTP)

A machine purchased six years back for ₹1,50,000 has been depreciated to a book value of ₹90,000. It originally had a projected life of fifteen years and zero salvage value. A new machine will cost ₹2,50,000 and result in a reduced operating cost of ₹30,000 per year for the next nine years. The older machine could be sold for ₹50,000. The new machine shall also be depreciated on a straight-line method on nine-year life with salvage value of ₹25,000. The company's tax rate is 50% and cost of capital is 10%.

Determine whether the old machine should be replaced.

Given: Present Value of Re. 1 at 10% on 9th year = 0.424; and Present Value of an annuity of Re. 1 at 10% for 8 years = 5.335.

Question No.: 15 (May 2014 RTP)

Gamma Limited is considering building an assembly plant and the company has two options, out of which it wishes to choose the best plant. The projected output is 10,000 units per month. The following data is available:

		₹
	<i>Plant A</i>	<i>Plant B</i>
Initial Cost	60,00,000	44,00,000
Direct Labour Cost p.a. (1st Shift)	30,00,000	15,00,000
(Second Shift)	-	19,00,000
Overhead (per year)	5,00,000	4,20,000

Both the plants have an expected life of 10 years after which there will be no salvage value. The cost of capital is 10 percent. The present value of an ordinary annuity of Re. 1 for 10 years @ 10 percent is 6.1446. Ignore effect of taxation.

You are required to determine:

- What would be the desirable choice?
- What other important elements are to be considered before the final decision is taken?

Question No.:16 (May 2014 RTP)

Fibroplast Limited, a toy manufacturing company, is considering replacing an older machine which was fully depreciated for tax purposes with a new machine costing ₹ 40,000. The new machine will be depreciated over its eight-year life. It is estimated that the new machine will reduce labour costs by ₹ 8,000 per year. The management believes that there will be no change in other expenses and revenues of the firm due to the machine. The company requires an after-tax return on investment of 10 per cent. Its rate of tax is 35 per cent. The company's income statement for the current year is given for other information.

Income statement for the current year:

		₹
Sales		5,00,000
Costs:		
Materials	1,50,000	
Labour	2,00,000	
Factory and Administrative	40,000	
Depreciation	<u>40,000</u>	<u>4,30,000</u>

Net Income before Taxes		70,000
Taxes (0.35)		<u>24,500</u>
Earnings after Taxes		45,500

Should the Fibroplast Limited buy the new machine? You may assume the company follows straight-line method of depreciation and the same is allowed for tax purposes.

Question No.17 – May 2017

X Limited is considering to purchase of new plant worth ₹ 80,00,000. The expected net cash flows after taxes and before depreciation are as follows:

Year	Net Cash Flows (₹)
1	14,00,000
2	14,00,000
3	14,00,000
4	14,00,000
5	14,00,000
6	16,00,000
7	20,00,000
8	30,00,000
9	20,00,000
10	8,00,000

The rate of cost of capital is 10%.

You are required to calculate:

- Pay-back period*
- Net present value at 10 discount factor*
- Profitability index at 10 discount factor*
- Internal rate of return with the help of 10% and 15% discount factor*

Question No.18 – November 2017 RTP

Rounak Ltd. is thinking to purchase a Lathe machine costing ₹ 220 crore. It has estimated that after a life of 10 years the salvage value of the machine will be ₹ 20 Crore. Rounak Ltd. expects a profit before tax (PBT) of ₹ 30 crore every year for the entire life of the machine. It pays a tax of 35% and charges depreciation on straight line basis. Find out whether Rounak Ltd. should buy the lathe machine if the hurdle rate is 10%.

CHAPTER 7: MANAGEMENT OF WORKING CAPITAL

Question No.1 – November 2016

Following information relates to ABC company for the year 2016:

(i) Projected sales: (₹ in lakhs)

Month	August	September	October	November	December
Sale	35	40	40	45	46

- (ii) Gross profit margin will be 20% on sale.
- (iii) 10% of projected sale will be cash sale. Out of credit sale of each month, 50% will be collected in the next month and the balance will be collected during the second month following the month of sale.
- (iv) Creditors will be paid in the first month following credit purchase. There will be credit purchase only.
- (v) Wages and salaries will be paid on the first day of the next month. The amount will be ₹ 3 lakhs each month.
- (vi) Interim dividend of ₹ 2 lakhs will be paid in December 2016.
- (vii) Machinery costing ₹ 10 lakhs will be purchased in September 2016. Repayment by instalment of ₹ 50,000 p.m. will start from October 2016.
- (viii) Administrative expenses of ₹ 1,00,000 per month will be paid in the month of their incurrence.
- (ix) Assume no minimum cash balance is required. Opening cash balance as on 01-10-2016 is estimated at ₹ 10 lakhs.

You are required to prepare the monthly cash budget for the 3 month period (October 2016 to December 2016). (8 Marks)

Question No.2 – May 2016

A trader whose current sales are ₹ 4,20,000 per annum and an average collection period of 30 days, wants to pursue a more liberal policy to improve sales. A study made by a management consultant reveals the following information:

Credit Policy	Increase in Collection Period	Increase in Sales	Present default anticipated
I	10 days	₹ 21,000	1.5%
II	30 days	₹ 52,500	3%
III	45 days	₹ 63,000	4%

The selling price per unit is ₹ 3. Average cost per unit is ₹ 2.25 and variable cost per unit is ₹ 2. The current bad-debts loss is 1%. Required return on additional investment is 20%. Assume a 360 days year.

Which of the above policies would you recommend for adoption? (8 Marks)

Question No.3 – November 2015

A firm has a total sales of ₹ 200 lakhs of which 80% is on credit. It is offering credit terms of 2/40, net 120. Of the total, 50% of customers avail of discount and the balance pay in 120 days. Past experience indicates that bad debt losses are around 1% of credit sales. The firm spends about ₹ 2,40,000 per annum to administer its credit sales. These are avoidable as a factor is prepared to buy the firm's receivables. He will charge 2% commission. He will pay advance against receivables to the firm at an interest rate of 18% after withholding 10% as reserve.

- (i) What is the effective cost of factoring? Consider year as 360 days.
- (ii) If bank finance for working capital is available at 14% interest, should the firm avail of factoring service? (8 Marks)

Question No.: 4 (May 2012 exam – 8 Marks)

A company is presently having credit sales of ₹ 12 lakh. The existing credit terms are 1/10, net 45 days and average collection period is 30 days. The current bad debts loss is 1.5%. In order to accelerate the collection process further as also to increase sales, the company is contemplating liberalization of its existing credit terms to 2/10, net 45 days. It is expected that sales are likely to increase by 1/3 of existing sales, bad debts increase to 2% of sales and average collection period to decline to 20 days. The contribution to sales ratio of the company is 22% and opportunity cost of investment in receivables is 15 percent (pre-tax). 50 per cent and 80 percent of customers in terms of sales revenue are expected to avail cash discount under existing and liberalization scheme respectively. The tax rate is 30%.

Should the company change its credit terms? (Assume 360 days in a year).

Question No.: 5 (May 2012 exam – 8 Marks)

STN Ltd. is a readymade garment manufacturing company. Its production cycle indicates that materials are introduced in the beginning of the production phase; wages and overhead accrue evenly throughout the period of cycle. The following figures for the 12 months ending 31st December 2011 are given.

Production of shirts	54,000 units
Selling price per unit	₹ 200
Duration of the production cycle	1 month
Raw material inventory held	2 month's consumption
Finished goods stock held for	1 month

Credit allowed to debtors is 1.5 months and credit allowed by creditors is 1 month.

Wages are paid in the next month following the month of accrual.

In the work-in-progress 50% of wages and overheads are supposed to be conversion costs.

The ratios of cost to sales price are-raw materials 60% direct wages 10% and overheads 20%. Cash is to be held to the extent of 40% of current liabilities and safety margin of 15% will be maintained.

Calculate amount of working capital required for the company on a cash cost basis.

Question No.: 6 (May 2013 exam – 8 Marks)

The following information is provided by the DPS Limited for the year ending 31st March, 2013.

Raw material storage period	55 days
Work-in-progress conversion period	18 days
Finished Goods storage period	22 days
Debt collection period	45 days
Creditors' payment period	60 days
Annual Operating cost	₹ 21,00,000

(Including depreciation of ₹ 2,10,000)

[1 year = 360 days]

You are required to calculate:

- Operating Cycle period.
- Number of Operating Cycle in a year.
- Amount of working capital required for the company on a cash cost basis.
- The company is a market leader in its product, there is virtually no competitor in the market. Based on a market research it is planning to discontinue sales on credit and deliver products based on pre-payments. Thereby, it can reduce its working capital requirement substantially.

What would be the reduction in working capital requirement due to such decision?

Question No.: 7 (November 2013 exam – 8 Marks)

PTX Limited is considering a change in its present credit policy. Currently it is evaluating two policies. The company is required to give a return of 20% on the investment in new accounts receivables. The company's variable costs are 70% of the selling price. Information regarding present and proposed policies is as follows:

	Present Policy	Policy Option 1	Policy Option 2
Annual Credit Sales (₹)	30,00,000	42,00,000	45,00,000
Debtors turnover ratio	4 times	3 times	2.4 times
Loss due to bad debts	3% of sales	5% of sales	6% of sales

Note: Return on investment in new accounts receivable is based on cost of investment in debtors.

Which option would you recommend?

(8 Marks)

Question No.: 8 (May 2014 exam – 8 Marks)

Black Limited has furnished the following cost sheet:

	₹ / Per Unit
Raw Material	98
Direct Labour	53
Factory Overhead (Includes depreciation of ₹ 15 per unit at budgeted level of activity)	88
Total Cost	239
Profit	43
Selling Price	282

Additional Information:

(i)	Average raw material in stock	3 weeks
(ii)	Average work-in-progress (% of completion with respect to Material- 75% Labour & Overhead - 70%)	2 weeks
(iii)	Finished goods in stock	4 weeks
(iv)	Credit allowed to debtors	2½ weeks
(v)	Credit allowed by creditors	3½ weeks
(vi)	Time lag in payments of labour	2 weeks
(vii)	Time lag in payments of factory overheads	1½ weeks
(viii)	Company sells, 25% of the output against cash	
(ix)	Cash in hand and bank is desired to be maintained	₹ 2,25,000
(x)	Provision for contingencies is required @ 4% of working capital requirement including that provision.	

You may assume that production is carried on evenly throughout the year and labour and factory overheads accrue similarly.

You are required to prepare a statement showing estimate of working capital needed to finance a budgeted activity level of 1,04,000 units of production. Finished stock, debtors and overhead are taken at cash cost.
(8 Marks)

Question No.:9 – November 2014 exam

PQR Ltd. having an annual sales of ₹ 30 lakhs, is re-considering its present collection policy. At present, the average collection period is 50 days and the bad debt losses are 5% of sales. The company is incurring an expenditure of ₹ 30,000 on account of collection of receivables.

The alternative policies are as under:

	Alternative I	Alternative II
Average Collection Period	40 days	30 days
Bad Debt Losses	4% of sales	3% of sales
Collection Expenses	₹ 60,000	₹ 95,000

Evaluate the alternatives on the basis of incremental approach and state which alternative is more beneficial.
(8 Marks)

Question No.: 10 – May 2015 exam

A new customer has approached a firm to establish new business connection. The customer require 1.5 month of credit. If the proposal is accepted, the sales of the firm will go up by ₹ 2,40,000 per annum. The new customer is being considered as a member of 10% risk of non-payment group.

The cost of sales amounts to 80% of sales. The tax rate is 30% and the desired rate of return is 40% (after tax).

Should the firm accept the offer? Give your opinion on the basis of calculations.

Question No.:11 – May 2015 exam

The following information is provided by the DVP Ltd. for the year ending 31st March, 2015.

Raw Material storage period	50 days
Work in progress conversion period	18 days
Finished Goods storage period	22 days
Debt Collection period	45 days
Creditors' payment period	55 days
Annual Operating Cost	₹ 21 Lacs

(Including depreciation of ₹ 2,10,000)

(1 year = 360 days)

You are required to calculate:

- (i) Operating Cycle period.
- (ii) Number of Operating Cycles in a year.
- (iii) Amount of working capital required for the company on a cash cost basis.
- (iv) The company is a market leader in its product, there is virtually no competitor in the market. Based on a market research, it is planning to discontinue sales on credit and deliver products based on pre-payments. Thereby, it can reduce its working capital requirement substantially. What would be the reduction in working capital requirement due to such decision? (8 Marks)

Question No.12 (May 2017 RTP, November 2017 RTP)

The following information has been extracted from the records of a company:

Product cost sheet	₹ per unit
Raw materials	45
Direct labour	20
Overheads	<u>40</u>
Total	105
Profit	<u>15</u>
Selling price	120

- Raw materials are in stock on an average of two months.
- The materials are in process on an average for 4 weeks. The degree of completion is 50%.
- Finished goods stock on an average is for one month.
- Time lag in payment of wages and overheads is 1½ weeks.
- Time lag in receipt of proceeds from debtors is 2 months.
- Credit allowed by suppliers is one month.
- 20% of the output is sold against cash.
- The company expects to keep a cash balance of ₹1,00,000.
- Take 52 weeks per annum.

The company is poised to manufacture and sell 1,44,000 units in the year.

You are required to prepare a statement showing the Working Capital requirements of the company.

Question No.13 – May 2017 RTP

A Ltd. has a total sale of ₹ 3.2 crores and its average collection period is 90 days. The past experience indicates that bad-debt losses are 1.5% on sales. The expenditure incurred by the firm in administering its receivable collection efforts are ₹5,00,000. A factor is prepared to buy the firm's receivables by charging 2% commission. The factor will pay advance on receivables to the firm at an interest rate of 18% p.a. after withholding 10% as reserve.

Calculate the effective cost of factoring to the Firm.

Question No.14 – November 2016 RTP, November 2017 RTP

Tony Limited manufacturers of Colour TV sets are considering the liberalization of existing credit terms to three of their large customers A, B and C. The credit period and likely quantity of TV sets that will be sold to the customers in addition to the other sales are as follows:

Quantity sold (No. of TV Sets)

Credit Period (Days)	A	B	C
0	1,000	1,000	-
30	1,000	1,500	-
60	1,000	2,000	1,000
90	1,000	2,500	1,500

The selling price per TV set is ₹ 9,000. The expected contribution is 20% of the selling price. The cost of carrying receivable averages 20% per annum.

You are required:-

- Determine the credit period to be allowed to each customer.
(Assume 360 days in a year for calculation purposes).
- What other problems the company might face in allowing the credit period as determined in (a) above?

Question No.14 – November 2015 RTP

Following information is forecasted by the Puja Limited for the year ending 31st March, 2015:

	Balance as at 1 st April, 2014 (₹)	Balance as at 31 st March, 2015 (₹)
Raw Material	45,000	65,356
Work-in-progress	35,000	51,300
Finished goods	60,181	70,175
Debtors	1,12,123	1,35,000
Creditors	50,079	70,469
Annual purchases of raw material (all credit)		4,00,000

Annual cost of production		7,50,000
Annual cost of goods sold		9,15,000
Annual operating cost		9,50,000
Annual sales (all credit)		11,00,000

You may take one year as equal to 365 days.

You are required to calculate:

- (i) Net operating cycle period.
- (ii) Number of operating cycles in the year.
- (iii) Amount of working capital requirement using operating cycles.

Question No.: 15 (May 2013 RTP)

Alpha Limited has forecasted the following information for the year ending 31st March, 2012:

	Balance as at 1 st April, 2011	Balance as at 31 st March, 2012
	₹	₹
Raw Material	45,000	65,356
Work-in-progress	35,000	51,300
Finished goods	60,181	70,175
Debtors	1,12,123	1,35,000
Creditors	50,079	70,469
Annual purchases of raw material (all credit)		4,00,000
Annual cost of production		7,50,000
Annual cost of goods sold		9,15,000
Annual operating cost		9,50,000
Annual sales (all credit)		11,00,000

You may take one year as equal to 365 days.

You are required to calculate:

- Net operating cycle period.
- Number of operating cycles in the year.
- Amount of working capital requirement.

Question No.: 16 (May 2013 RTP)

Sonachandi Limited has present annual sales of 10,000 units at ₹ 300 per unit. The variable cost is ₹ 200 per unit and the fixed costs amount to ₹ 3,00,000 per annum. The present credit period allowed by the company is 1 month. The company is considering a proposal to increase the credit period to 2 months and 3 months and has made the following estimates:

	Existing	Proposed	
Credit Policy	1 month	2 months	3 months
Increase in sales	-	15%	30%
% of Bad Debts	1%	3%	5%

There will be increase in fixed cost by ₹ 50,000 on account of increase of sales beyond 25% of present level. The company plans on a pre-tax return of 20% on investment in receivables. You are required to calculate the most paying credit policy for the company.

Question No.: 17 (November 2013 RTP)

Alpha Limited sells its products on a gross profit of 20 percent on sales. The following information is extracted from its annual accounts for the current year ended March 31.

Sales at 3 months' credit	40,00,000
Raw Material	12,00,000
Wages paid-average time lag 15 days	9,60,000
Manufacturing expenses paid-one month in arrears	12,00,000
Administrative expenses paid-one month in arrears	4,80,000
Sales promotion expenses-payable half-yearly in advance	2,00,000

The company enjoys one month's credit from the suppliers of raw materials and maintains 2 months' stock of raw materials and one and a half month's stock of finished goods. The cash balance is maintained at ₹1,00,000 as a precautionary measure. Assuming a 10 percent margin, you are required to estimate the working capital requirements of Alpha Limited.

Question No.: 18 (November 2013 RTP)

Delta Limited currently makes all sales on credit and offers no cash discounts. It is considering a 2 percent discount for payments within 10 days (terms offered '2/10 net 30'). The firm's current average collection period is 30 days, sales are 10,000 units, selling price is ₹ 100 per unit and variable cost per unit is ₹ 50; its existing total fixed costs are ₹ 2,00,000 which are likely to remain unchanged with production/ sales volume of 12,000 units.

It is expected that the offer of cash discount will result in an increase in sales to 11,000 units and the average collection period will be 20 days as a result. However, due to increased sales, increased working capital required will be for ₹ 20,000 (without taking into account the effect of debtors).

Assuming that 50 percent of the total sales will be on cash discount and 20 percent is the required return on investment, should the proposed discount be offered?

Question No.:19 (May 2014 RTP)

The trade terms "2/15, net 30" indicate that a 2 percent discount is offered if payment is made within 30 days. Comment.

Question No.:20 (May 2014 RTP)

The present credit terms of Beta Limited are 1/10 net 30. Its annual sales are ₹ 80 lakhs, its average collection period is 20 days. Its variable costs and average total costs to sales are 0.85 and 0.95 respectively and its cost of capital is 10 per cent. The proportion of sales on which customers currently take discount is 0.5. Beta Limited is considering relaxing its discount terms to 2/10 net 30. Such relaxation is expected to increase sales by ₹ 5 lakhs, reduce the average collection period to 14 days and increase the proportion of discount sales to 0.8. What will be the effect of relaxing the discount policy on Beta Limited's profit? Take year as 360 days.

Question No.: 21 (May 2014 RTP)

The following are the ratios relating to the activities of Technopak Limited:

Debtors Velocity	3 months
Stock Velocity	8 months
Creditors Velocity	2 months

Gross Profit Ratio	25 per cent
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Gross profit for the current year ended December 31 amounts to ₹ 4,00,000. Closing stock of the year is ₹ 10,000 above the opening stock. Bills receivables amount to ₹ 25,000 and bills payable to ₹ 10,000. Calculate: (a) Sales, (b) Sundry Debtors, (c) Sundry Creditors.

Question No.: 22 (November 2014 RTP)

Beta Limited faces an interest rate of 0.5 per cent per day and its broker charges ₹ 75 for each transaction in short-term securities. The managing director has stated that the minimum cash balance that is acceptable is ₹ 2,000 and that the variance of cash flows on a daily basis is ₹ 16,000. You are required to determine the maximum level of cash Beta Limited should hold and at what point should it start to purchase or sell securities?

Question No.: 23 (November 2014 RTP)

Lola Limited has a present annual sales turnover of ₹ 40,00,000. The unit sale price is ₹ 20. The variable cost are ₹ 12 per unit and fixed costs amount to ₹ 5,00,000 per annum. The present credit period of one month is proposed to be extended to either 2 or 3 months whichever will be more profitable. The following additional information is available:

	On the basis of Credit Period of		
	1 month	2 months	3 months
Increase in sales by	—	10%	30%

The company requires a pre-tax return on investment at 20%.

Evaluate the profitability of the proposals and recommended best credit period for Lola Limited.

Question No.24 – May 2017

VK Co. Ltd. has total cash disbursement amounting ₹ 22,50,000 in the year 2017 and maintains a separate account for cash disbursements. Company has an administrative and transaction cost on transferring cash to disbursement account ₹ 15 per transfer. The yield rate on marketable securities is 12% per annum.

You are required to determine optimum cash balance according to William J Baumol Model. (5 Marks)

Question No.25 – May 2017

PQ Limited wants to expand its business and has applied for a loan from a commercial bank for its growing financial requirements.

The records of the company reveals that the company sells goods in the domestic market at a gross profit of 25% not counting depreciation as part of the cost of goods sold.

The following additional information is also available for you:

	₹
<i>Sales-Home at one month's credit</i>	1,20,00,000
<i>Sales-Export at three months' credit (sales price 10% below home price)</i>	54,00,000
<i>Material used (supplied extends two months' credit)</i>	45,00,000
<i>Wages paid ½ month in arrear</i>	36,00,000
<i>Manufacturing Expenses (Cash) paid (one month in arrear)</i>	54,00,000
<i>Adm. Expenses paid one month in arrear</i>	12,00,000
<i>Income tax payable in four installments of which one falls in the next financial year</i>	15,00,000

The company keeps one month's stock of each of raw materials and finished goods and believes in keeping ₹ 10,00,000 available to it including the overdraft limit of ₹ 5,00,000 not yet utilized by the company. Assumes a 15% margin for contingencies. Ignore the work-in-progress.

You are required to ascertain the requirement of the working capital of the company.

PAST THEORY QUESTIONS**Question No.1**

What is an Integrated Accounting System? State its advantages.

Integrated Accounts is the name given to a system of accounting, whereby cost and financial accounts are kept in the same set of books. There will be no separate sets of books for Costing and Financial records. Integrated accounts provide or meet out fully the information requirement for Costing as well as for Financial Accounts.

Advantages: The main advantages of Integrated Accounts are as follows:

- (a) *No need for Reconciliation*- The question of reconciling costing profit and financial profit does not arise, as there is one figure of profit only.
- (b) *Less efforts*- Due to use of one set of books, there is a significant extent of saving in efforts made.
- (c) *Less Time consuming*- No delay is caused in obtaining information as it is provided from books of original entry.
- (d) *Economical process*- It is economical also as it is based on the concept of "Centralisation of Accounting function".

Question No.2

Discuss factors that a venture capitalist should consider before financing any risky project.

Factors to be considered by a Venture Capitalist before Financing any Risky Project

- (i) Quality of the management team is a very important factor to be considered. They are required to show a high level of commitment to the project.
- (ii) The technical ability of the team is also vital. They should be able to develop and produce a new product / service.
- (iii) Technical feasibility of the new product / service should be considered.
- (iv) Since the risk involved in investing in the company is quite high, venture capitalists should ensure that the prospects for future profits compensate for the risk.
- (v) A research must be carried out to ensure that there is a market for the new product.
- (vi) The venture capitalist himself should have the capacity to bear risk or loss, if the project fails.
- (vii) The venture capitalist should try to establish a number of exit routes.
- (viii) In case of companies, venture capitalist can seek for a place on the Board of Directors to have a say on all significant matters affecting the business.

(Note: Students may answer any four of the above factors)

Question No.3

What is Net Operating income theory of capital structure? Explain the assumptions on which the NOI theory is based.

(4 × 4 = 16 Marks)

Net Operating Income (NOI) Theory of Capital Structure

According to this approach, there is no relationship between the cost of capital and value of the firm. The value of the firm is independent of the capital structure of the firm.

Assumptions of NOI Approach

- (a) There are no taxes.
- (b) The market capitalizes the value of the firm as a whole. Thus the split between debt and equity is not important.
- (c) The increase in proportion of debt in capital structure leads to change in risk perception of the shareholders i.e. increase in cost of equity (K_e). The increase in cost of equity is such as completely offset the benefits of using cheaper debt.
- (d) The overall cost of capital remains same for all degrees of debt equity mix.

Question No.4

"The profit maximization is not an operationally feasible criterion." Comment on it.

"The profit maximisation is not an operationally feasible criterion."

The above statement is true because Profit maximisation can be a short-term objective for any organisation and cannot be its sole objective. Profit maximization fails to serve as an operational criterion for maximizing the owner's economic welfare. It fails to provide an operationally feasible measure for ranking alternative courses of action in terms of their economic efficiency. It suffers from the following limitations:

- (i) **Vague term:** The definition of the term profit is ambiguous. Does it mean short term or long term profit? Does it refer to profit before or after tax? Total profit or profit per share?
- (ii) **Timing of Return:** The profit maximization objective does not make distinction between returns received in different time periods. It gives no consideration to the time value of money, and values benefits received today and benefits received after a period as the same.
- (iii) It ignores the risk factor.
- (iv) The term maximization is also vague.

Question No.5

Write short notes on the following:

- (i) *Deep Discount Bonds*
- (ii) *Angle of Incidence*

Deep Discount Bonds is a form of zero-interest bonds. These bonds are sold at a discounted value and on maturity face value is paid to the investors. In such bonds, there is no interest payout during lock in period. IDBI was the first to issue a deep discount bond in India in January, 1992. The investor could hold the bond for 26 years or seek redemption at the end of every five years with a specified maturity value.

Angle of incidence

This angle is formed by the intersection of sales line and total cost line at the break-even point. This angle shows the rate at which profits are being earned once the break-even point has been reached. The wider the angle the greater is the rate of earning profits. A large angle of incidence with a high margin of safety indicates extremely favourable position.

Question No.6

Discuss basic assumptions of Cost Volume Profit analysis.

Distinguish between bill of material and material requisition note.

CVP Analysis:-Assumptions

- (i) Changes in the levels of revenues and costs arise only because of changes in the number of products (or service) units produced and sold.
- (ii) Total cost can be separated into two components: Fixed and variable
- (iii) Graphically, the behaviour of total revenues and total cost are linear in relation to output level within a relevant range.
- (iv) Selling price, variable cost per unit and total fixed costs are known and constant.
- (v) All revenues and costs can be added, sub traded and compared without taking into account the time value of money.

Bills of material	Material Requisition Note
1. It is document by the drawing office	1. It is prepared by the foreman of the consuming department.
2. It is a complete schedule of component parts and raw materials required for a particular job or work order.	2. It is a document authorizing Store-Keeper to issue Material to the consuming department.
3. It often serves the purpose of a Store Requisition as it shown the complete schedule of materials required for a particular job i.e. it can replace stores requisition.	3. It cannot replace a bill of material.
4. It can be used for the purpose of quotation	4. It is useful in arriving historical cost only.
5. It helps in keeping a quantitative control on materials draw through stores Requisition.	5. It shows the material actually drawn from stores.

Question No.7

- (a) *Briefly explain the essential features of a good cost accounting system. (4 x 4 = 16 Marks)*
- (b) *What is inter-process profit? State its advantages and disadvantages.*

(c) *What do you understand by operating costing? How are composite units computed?*

(d) *List the fundamental principles governing capital structure.*

(a) **Essentials of a good Cost Accounting System:** The essential features, which a good Cost Accounting System should possess, are as follows:

- (a) **Informative and Simple:** Cost Accounting System should be tailor-made, practical, simple and capable of meeting the requirements of a business concern.
- (b) **Accuracy:** The data to be used by the Cost Accounting System should be accurate; otherwise it may distort the output of the system.
- (c) **Support from Management:** Necessary cooperation and participation of executives from various departments of the concern is essential for developing a good system of Cost Accounting.
- (d) **Cost- Benefit:** The Cost of installing and operating the system should justify the results.
- (e) **Precise Information:** The system of costing should not sacrifice the utility by introducing meticulous and unnecessary details.
- (f) **Procedure:** A carefully phased programme should be prepared by using network analysis for the introduction of the system.
- (g) **Trust:** Management should have faith in the Costing System and should also provide a helping hand for its development and success.

(b) **Definition of Inter-Process Profit and Its advantages and disadvantages**

In some process industries the output of one process is transferred to the next process not at cost but at market value or cost plus a percentage of profit. *The difference between cost and the transfer price is known as inter-process profits.*

The advantages and disadvantages of using inter-process profit, in the case of process type industries are as follows:

Advantages:

1. Comparison between the cost of output and its market price at the stage of completion is facilitated.
2. Each process is made to stand by itself as to the profitability.

Disadvantages:

1. The use of inter-process profits involves complication.
2. The system shows profits which are not realised because of stock not sold out

Meaning of Operating Costing:

Operating Costing is a method of ascertaining costs of providing or operating a service. This method of costing is applied by those undertakings which provide services rather than production of commodities. This costing method is usually made use of by transport companies, gas and water works departments, electricity supply companies, canteens, hospitals, theatres, schools etc.

Computation of composite units: When two units are merged into one it is called Composite units. It is explained with example as follows.

Composite units i.e. tonnes kms., quintal kms. etc. may be computed in two ways.

- (i) Absolute (weighted average) tonnes-kms.

Absolute tonnes-kms., are the sum total of tonnes-kms., arrived at by multiplying various distances by respective load quantities carried.

- (ii) Commercial (simple average) tonnes-kms.

Commercial tonnes-kms., are arrived at by multiplying total distance kms., by average load quantity.

(d) Fundamental Principles Governing Capital Structure

The fundamental principles are:

- (i) **Cost Principle:** According to this principle, an ideal pattern or capital structure is one that minimises cost of capital structure and maximises earnings per share (EPS).
- (ii) **Risk Principle:** According to this principle, reliance is placed more on common equity for financing capital requirements than excessive use of debt. Use of more and more debt means higher commitment in form of interest payout. This would lead to erosion of shareholders value in unfavourable business situation.
- (iii) **Control Principle:** While designing a capital structure, the finance manager may also keep in mind that existing management control and ownership remains undisturbed.
- (iv) **Flexibility Principle:** It means that the management chooses such a combination of sources of financing which it finds easier to adjust according to changes in need of funds in future too.
- (v) **Other Considerations:** Besides above principles, other factors such as nature of industry, timing of issue and competition in the industry should also be considered.

(Note: Students may answer any four of the above principles.)

Question No.8

- (a) *Discuss the conflicts in profit versus wealth maximization principle of the firm.*
- (b) *State the considerations on which capital expenditure budget is prepared.*
- (c) *Distinguish between business risk and financial risk.*
- (d) *What are the forms of bank credit?*
- (e) *"Financing a business through borrowing is cheaper than using equity." Briefly explain.*

Conflict in Profit versus Wealth Maximization Principle of the Firm

Profit maximisation is a short-term objective and cannot be the sole objective of a company. It is at best a limited objective. If profit is given undue importance, a number of problems can arise like the term profit is vague, profit maximisation has to be attempted with a realisation of risks involved, it does not take into account the time pattern of returns and as an objective it is too narrow.

Whereas, on the other hand, wealth maximisation, as an objective, means that the company is using its resources in a good manner. If the share value is to stay high, the company has to reduce its costs and use the resources properly. If the company follows the goal of wealth maximisation, it means that the company will promote only those policies that will lead to an efficient allocation of resources.

(b) The preparation of Capital Expenditure Budget is based on the following considerations:

1. Overhead on production facilities of certain departments as indicated by the plant utilisation budget.
2. Future development plans to increase output by expansion of plant facilities.
3. Replacement requests from the concerned departments
4. Factors like sales potential to absorb the increased output, possibility of price reductions, increased costs of advertising and sales promotion to absorb increased output, etc.

(c) Business Risk and Financial Risk

Business risk refers to the risk associated with the firm's operations. It is an unavoidable risk because of the environment in which the firm has to operate and the business risk is represented by the variability of earnings before interest and tax (EBIT). The variability in turn is influenced by revenues and expenses. Revenues and expenses are affected by demand of firm's products, variations in prices and proportion of fixed cost in total cost.

Whereas, Financial risk refers to the additional risk placed on firm's shareholders as a result of debt use in financing. Companies that issue more debt instruments would have higher financial risk than companies financed mostly by equity. Financial risk can be measured by ratios such as firm's financial leverage multiplier, total debt to assets ratio etc.

(d) Forms of Bank Credit

Some of the forms of bank credit are:

- (i) **Short Term Loans:** In a loan account, the entire advance is disbursed at one time either in cash or by transfer to the current account of the borrower. It is a single advance and given against securities like shares, government securities, life insurance policies and fixed deposit receipts, etc.
- (ii) **Overdraft:** Under this facility, customers are allowed to withdraw in excess of credit balance standing in their Current Account. A fixed limit is therefore granted to the borrower within which the borrower is allowed to overdraw his account.
- (iii) **Clean Overdrafts:** Request for clean advances are entertained only from parties which are financially sound and reputed for their integrity. The bank has to rely upon the personal security of the borrowers.
- (iv) **Cash Credits:** Cash Credit is an arrangement under which a customer is allowed an advance up to certain limit against credit granted by bank. Interest is not charged on the full amount of the advance but on the amount actually availed of by him.

- (v) **Advances against goods:** Goods are charged to the bank either by way of pledge or by way of hypothecation. Goods include all forms of movables which are offered to the bank as security.
 - (vi) **Bills Purchased/Discounted:** These advances are allowed against the security of bills which may be clean or documentary.

Usance bills maturing at a future date or sight are discounted by the banks for approved parties. The borrower is paid the present worth and the bank collects the full amount on maturity.
 - (vii) **Advance against documents of title to goods:** A document becomes a document of title to goods when its possession is recognised by law or business custom as possession of the goods like bill of lading, dock warehouse keeper's certificate, railway receipt, etc. An advance against the pledge of such documents is an advance against the pledge of goods themselves.
 - (viii) **Advance against supply of bills:** Advances against bills for supply of goods to government or semi-government departments against firm orders after acceptance of tender fall under this category. It is this debt that is assigned to the bank by endorsement of supply bills and executing irrevocable power of attorney in favour of the banks for receiving the amount of supply bills from the Government departments.
- (Note: Students may answer any four of the above forms of bank credit.)
- (e) "Financing a business through borrowing is cheaper than using equity"
- (i) Debt capital is cheaper than equity capital from the point of its cost and interest being deductible for income tax purpose, whereas no such deduction is allowed for dividends.
 - (ii) Issue of new equity dilutes existing control pattern while borrowing does not result in dilution of control.
 - (iii) In a period of rising prices, borrowing is advantageous. The fixed monetary outgo decreases in real terms as the price level increases.

Question No.9

- (b) *Distinguish between cost allocation and cost absorption.*
- (c) *What is debt securitization? And also state its advantages.*
- (d) *Distinguish between factoring and bill-discounting.*
- (b) **Distinguish between Cost allocation and Cost absorption:**

Cost allocation is the allotment of whole item of cost to a cost centre or a cost unit. In other words, it is the process of identifying, assigning or allowing cost to a cost centre or a cost unit.

Cost absorption is the process of absorbing all indirect costs or overhead costs allocated or apportioned over particular cost centre or production department by the units produced.

(c) Debt Securitisation and its Advantages

Debt securitisation is a method of recycling of funds and is especially beneficial to financial intermediaries to support lending volumes. Under debt securitisation a group of illiquid assets say a mortgage or any asset that yields stable and regular cash flows like bank loans, consumer finance, and credit card payment are pooled together and sold to intermediary. The intermediary then issues debt securities.

The advantages of debt securitisation to the originator are the following:

- (i) The asset is shifted off the Balance Sheet, thus giving the originator recourse to off balance sheet funding.
- (ii) It converts illiquid assets to liquid portfolio.
- (iii) It facilitates better balance sheet management; assets are transferred off balance sheet facilitating satisfaction of capital adequacy norms.
- (iv) The originator's credit rating enhances.

(Note: Students may answer any two of the above advantages)

(d) Differentiation between Factoring and Bills Discounting

The differences between Factoring and Bills discounting are:

- (i) Factoring is called as "Invoice Factoring" whereas Bills discounting is known as "Invoice discounting."
- (ii) In Factoring, the parties are known as the client, factor and debtor whereas in Bills discounting, they are known as drawer, drawee and payee.
- (iii) Factoring is a sort of management of book debts whereas bills discounting is a sort of borrowing from commercial banks.
- (iv) For factoring there is no specific Act, whereas in the case of bills discounting, the Negotiable Instruments Act is applicable.

Question No.10

- (a) "Perpetual inventory system comprises Bin Card and Stores Ledger, but the efficacy of the system depends on continuous stock taking." Comment.
- (b) "Is reconciliation of cost accounts and financial accounts necessary in case of integrated accounting system?"
- (c) "Operating risk is associated with cost structure, whereas financial risk is associated with capital structure of a business concern." Critically examine this statement.
- (d) What is venture capital financing? State the factors which are to be considered in financing any risky project.
- (e) State the advantage of Electronic Cash Management System.

- (a) Perpetual Inventory system represents a system of records maintained by the stores department. Records comprise of (i) Bin Cards and (ii) Stores Ledger. Bin Card maintains a quantitative record of receipts, issues and closing balances of each item of stores. Like a bin card, the Stores Ledger is maintained to record all receipt and issue transactions in respect of materials. It is filled up with the help of goods received note

and material requisitions. But a perpetual inventory system's efficacy depends on the system of continuous stock taking. Continuous stock taking means the physical checking of the records i.e. Bin cards and store ledger with actual physical stock. Perpetual inventory is essentially necessary for material control. It incidentally helps continuous stock taking.

The main advantages of continuous stock taking are as follows:

- (1) Physical stocks can be counted and book balances adjusted as and when desired without waiting for the entire stock-taking to be done.
 - (2) Quick compilation of Profit and Loss Accounts (for interim period) due to prompt availability of stock figures.
 - (3) Discrepancies are easily located and thus corrective action can be promptly taken to avoid their recurrence.
 - (4) A systematic review of the perpetual inventory reveals the existence of surplus, dormant, obsolete and slow-moving materials, so that remedial measures may be taken in time.
 - (5) Fixation of the various levels and check of actual balances in hand with these levels assist the Storekeeper in maintaining stocks within limits and in initiating purchase requisitions for correct quantity at the proper time.
- (b) In integrated accounting system cost and financial accounts are kept in the same set of books. Such a system will have to afford full information required for Costing as well as for Financial Accounts. In other words, information and data should be recorded in such a way so as to enable the firm to ascertain the cost (together with the necessary analysis) of each product, job, process, operation or any other identifiable activity. It also ensures the ascertainment of marginal cost, variances, abnormal losses and gains. In fact all information that management requires from a system of Costing for doing its work properly is made available. The integrated accounts give full information in such a manner so that the profit and loss account and the balance sheet can be prepared according to the requirements of law and the management maintains full control over the liabilities and assets of its business.

Since, only one set of books are kept for both cost accounting and financial accounting purpose so there is no necessity of reconciliation of cost and financial accounts.

- (c) "Operating risk is associated with cost structure whereas financial risk is associated with capital structure of a business concern".

Operating risk refers to the risk associated with the firm's operations. It is represented by the variability of earnings before interest and tax (EBIT). The variability in turn is influenced by revenues and expenses, which are affected by demand of firm's products, variations in prices and proportion of fixed cost in total cost. If there is no fixed cost, there would be no operating risk. Whereas financial risk refers to the additional risk placed on firm's shareholders as a result of debt and preference shares used in the capital structure of the concern. Companies that issue more debt instruments would have higher financial risk than companies financed mostly by equity.

(d) Venture Capital Financing and Factors to be considered in financing any Risky Project

Under venture capital financing, venture capitalist makes investment to purchase debt or equity from inexperienced entrepreneurs who undertake highly risky ventures with potential of success. The factors to be considered in financing any risky project are:

- (i) Quality of the management team is a very important factor to be considered. They are required to show a high level of commitment to the project.
- (ii) The technical ability of the team is also vital. They should be able to develop and produce a new product / service.
- (iii) Technical feasibility of the new product / service should be considered.
- (iv) Since the risk involved in investing in the company is quite high, venture capitalists should ensure that the prospects for future profits compensate for the risk.
- (v) A research must be carried out to ensure that there is a market for the new product.
- (vi) The venture capitalist himself should have the capacity to bear risk or loss, if the project fails.
- (vii) The venture capitalist should try to establish a number of exit routes.
- (viii) In case of companies, venture capitalist can seek for a place on the Board of Directors to have a say on all significant matters affecting the business.

(Note: Students may answer any two of the above factors)

(e) Advantages of Electronic Cash Management System

- (i) Significant saving in time.
- (ii) Decrease in interest costs.
- (iii) Less paper work.
- (iv) Greater accounting accuracy.
- (v) More control over time and funds.
- (vi) Supports electronic payments.
- (vii) Faster transfer of funds from one location to another, where required.
- (viii) Speedy conversion of various instruments into cash.
- (ix) Making available funds wherever required, whenever required.
- (x) Reduction in the amount of 'idle float' to the maximum possible extent.

Question No.11

(a) Explain the following terms in relation to process costing:

- (i) Equivalent Production*
- (ii) Inter-process profit*

(b) Elaborate the practical application of Marginal Costing.

- (c) *What is Virtual Banking? State its advantages.*
- (d) *What is Over capitalisation? State its causes and consequences.*
- (a) (i) **Equivalent Production:** When opening and closing stocks of work-in-process exist, unit costs cannot be computed by simply dividing the total cost by total number of units still in process. We can convert the work-in-process units into finished units called equivalent production units so that the unit cost of these uncompleted (W-I-P) units can be obtained. $\text{Equivalent Production units} = \text{Actual number of units in production} \times \text{Percentage of work completed}$. It consists of balance of work done on opening work-in-process, current production done fully and part of work done on closing WIP with regard to different elements of costs viz., material, labour and overhead.
- (ii) **Inter-Process Profit:** In some process industries the output of one process is transferred to the next process not at cost but at market value or cost plus a percentage of profit. The difference between cost and the transfer price is known as inter-process profits.
- (b) **Practical applications of Marginal costing:**
- (i) **Pricing Policy:** Since marginal cost per unit is constant from period to period, firm decisions on pricing policy can be taken particularly in short term.
- (ii) **Decision Making:** Marginal costing helps the management in taking a number of business decisions like make or buy, discontinuance of a particular product, replacement of machines, etc
- (iii) **Ascertaining Realistic Profit:** Under the marginal costing technique, the stock of finished goods and work-in-progress are carried on marginal cost basis and the fixed expenses are written off to profit and loss account as period cost. This shows the true profit of the period.
- (iv) **Determination of production level:** Marginal costing helps in the preparation of break-even analysis which shows the effect of increasing or decreasing production activity on the profitability of the company.
- (c) **Virtual Banking and its Advantages**

Virtual banking refers to the provision of banking and related services through the use of information technology without direct recourse to the bank by the customer.

The advantages of virtual banking services are as follows:

- Lower cost of handling a transaction.
- The increased speed of response to customer requirements.
- The lower cost of operating branch network along with reduced staff costs leads to cost efficiency.
- Virtual banking allows the possibility of improved and a range of services being made available to the customer rapidly, accurately and at his convenience.

(d) Overcapitalization and its Causes and Consequences

It is a situation where a firm has more capital than it needs or in other words assets are worth less than its issued share capital, and earnings are insufficient to pay dividend and interest.

Causes of Over Capitalization

Over-capitalisation arises due to following reasons:

- (i) Raising more money through issue of shares or debentures than company can employ profitably.
- (ii) Borrowing huge amount at higher rate than rate at which company can earn.
- (iii) Excessive payment for the acquisition of fictitious assets such as goodwill etc.
- (iv) Improper provision for depreciation, replacement of assets and distribution of dividends at a higher rate.
- (v) Wrong estimation of earnings and capitalization.

(Note: Students may answer any two of the above reasons)

Consequences of Over-Capitalisation

Over-capitalisation results in the following consequences:

- (i) Considerable reduction in the rate of dividend and interest payments.
- (ii) Reduction in the market price of shares.
- (iii) Resorting to "window dressing".
- (iv) Some companies may opt for reorganization. However, sometimes the matter gets worse and the company may go into liquidation.

(Note: Students may answer any two of the above consequences)

Question No.12

- (a) *What is the meaning of Margin of Safety (MOS)? State the relationship between Operating Leverage and Margin of Safety Ratio.*
- (b) *Describe the steps involved in the budgetary control technique.*
- (c) *'Management of marketable securities is an integral part of investment of cash.'*
Comment.
- (d) *What do you mean by capital structure? State its significance in financing decision.*
- (e) (i) *State the main elements of leveraged lease.*
(ii) *State the escalation clause in contract costing.* (4 x 4 = 16 Marks)

- (a) Margin of Safety (MoS) is the excess of total sales over the Break even sales. MoS defines the amount upto which level sales can decline before occurring loss. Therefore $\text{MoS} = \text{Total Sales} - \text{Break even sales}$ and $\text{MoS ratio} = \frac{\text{Sales} - \text{Break even sales}}{\text{Sales}}$ Break even sales (BE sales) will depend on contribution margin ($\text{BE sales} = \text{Fixed Cost} \div \text{Contribution margin}$).

Contribution margin is related to operating leverage also. Operating leverage is calculated as $\text{Contribution} \div \text{Operating profit}$ and contribution margin plays an important role in it. If sales are expected to increase, higher operating leverage will result in higher profit. When sales are expected to decrease, lower operating leverage will result in higher profit. Higher variable cost and lower fixed cost will result into higher MoS and risk will be lower and vice versa.

So like Operating leverage, MoS is a measure of risk as to what extent an organisation is exposed to change in sales volume.

- (b) There are certain steps involved in the budgetary control technique. They are as follows:
- (i) **Definition of objectives:** A budget being a plan for the achievement of certain operational objectives, it is desirable that the same are defined precisely. The objectives should be written out; the areas of control demarcated; and items of revenue and expenditure to be covered by the budget stated.
 - (ii) **Location of the key (or budget) factor:** There is usually one factor (sometimes there may be more than one) which sets a limit to the total activity. Such a factor is known as key factor. For proper budgeting, it must be located and estimated properly.
 - (iii) **Appointment of controller:** Formulation of a budget usually required whole time services of a senior executive known as budget controller; he must be assisted in this work by a Budget Committee, consisting of all the heads of department along with the Managing Director as the Chairman.
 - (iv) **Budget Manual:** Effective budgetary planning relies on the provision of adequate information which are contained in the budget manual. A budget manual is a collection of documents that contains key information for those involved in the planning process.
 - (v) **Budget period:** The period covered by a budget is known as budget period. The Budget Committee determines the length of the budget period suitable for the business. It may be months or quarters or such periods as coincide with period of trading activity.
 - (vi) **Standard of activity or output:** For preparing budgets for the future, past statistics cannot be completely relied upon, for the past usually represents a combination of good and bad factors. Therefore, though results of the past should be studied but these should only be applied when there is a likelihood of similar conditions repeating in the future.

(c) **"Management of Marketable Securities is an Integral Part of Investment of Cash"**

Management of marketable securities is an integral part of investment of cash as it serves both the purposes of liquidity and cash, provided choice of investment is made correctly. As the working capital needs are fluctuating, it is possible to invest excess funds in some short term securities, which can be liquidated when need for cash is felt. The selection of securities should be guided by three principles namely safety, maturity and marketability.

(d) Concept of Capital Structure and its Significance in Financing Decision

Capital structure refers to the mix of a firm's capitalisation i.e. mix of long-term sources of funds such as debentures, preference share capital, equity share capital and retained earnings for meeting its total capital requirement.

Significance in Financing Decision

The capital structure decisions are very important in financial management as they influence debt – equity mix which ultimately affects shareholders return and risk. These decisions help in deciding the forms of financing (which sources to be tapped), their actual requirements (amount to be funded) and their relative proportions (mix) in total capitalisation. Therefore, such a pattern of capital structure must be chosen which minimises cost of capital and maximises the owners' return.

(e) (i) Main Elements of Leveraged Lease

Under this lease, a third party is involved beside lessor and lessee. The lessor borrows a part of the purchase cost (say 80%) of the asset from the third party i.e., lender. The asset so purchased is held as security against the loan. The lender is paid off from the lease rentals directly by the lessee and the surplus after meeting the claims of the lender goes to the lessor. The lessor is entitled to claim depreciation allowance.

(ii) Escalation Clause - If during the period of execution of a contract, the prices of materials, or labour etc., rise beyond a certain limit, the contract price will be increased by an agreed amount. Inclusion of such a clause in a contract deed is called an "Escalation Clause"

Question No.13

- (a) *Distinguish between cost control and cost reduction.*
- (b) *Explain the following:*
- Explicit costs*
 - Engineered costs*
- (c) *Discuss emerging issues affecting the future role of Chief Financial Officer (CFO).*
- (d) *State the main features of Global Depository Receipts (GDRs) and American Depository Receipts (ADRs).* (4 × 4 = 16 Marks)

(a) Difference between Cost Control and Cost Reduction

Cost Control	Cost Reduction
1. Cost control aims at maintaining the costs in accordance with the established standards.	1. Cost reduction is concerned with reducing costs. It challenges all standards and endeavours to better them continuously
2. Cost control seeks to attain lowest possible cost under existing conditions.	2. Cost reduction recognises no condition as permanent, since a change will result in lower cost.
3. In case of Cost Control, emphasis is on past and present	3. In case of cost reduction it is on present and future.

4. Cost Control is a preventive function	4. Cost reduction is a corrective function. It operates even when an efficient cost control system exists.
5. Cost control ends when targets are achieved	5. Cost reduction has no visible end.

- (b) (i) **Explicit Costs** - These costs are also known as out of pocket costs and refer to costs involving immediate payment of cash. Salaries, wages, postage and telegram, printing and stationery, interest on loan etc. are some examples of explicit costs involving immediate cash payment.
- (ii) **Engineered Costs** - These are costs that result specifically from a clear cause and effect relationship between inputs and outputs. The relationship is usually personally observable. Examples of inputs are direct material costs, direct labour costs etc.
- (c) **Emerging Issues/Priorities Affecting the Future Role of Chief Financial Officer (CFO)**
- (i) **Regulation:** Regulation requirements are increasing and CFOs have an increasingly personal stake in regulatory adherence.
- (ii) **Globalisation:** The challenges of globalisation are creating a need for finance leaders to develop a finance function that works effectively on the global stage and that embraces diversity.
- (iii) **Technology:** Technology is evolving very quickly, providing the potential for CFOs to reconfigure finance processes and drive business insight through 'big data' and analytics.
- (iv) **Risk:** The nature of the risks that organisations face is changing, requiring more effective risk management approaches and increasingly CFOs have a role to play in ensuring an appropriate corporate ethos.
- (v) **Transformation:** There will be more pressure on CFOs to transform their finance functions to drive a better service to the business at zero cost impact.
- (vi) **Stakeholder Management:** Stakeholder management and relationships will become important as increasingly CFOs become the face of the corporate brand.
- (vii) **Strategy:** There will be a greater role to play in strategy validation and execution, because the environment is more complex and quick changing, calling on the analytical skills CFOs can bring.
- (viii) **Reporting:** Reporting requirements will broaden and continue to be burdensome for CFOs.
- (ix) **Talent and Capability:** A brighter spotlight will shine on talent, capability and behaviours in the top finance role.
- (Note: Students may answer any four of the above issues)

(d) Global Depository Receipts and American Depository Receipts

Global Depository Receipts (GDRs) are basically negotiable certificates denominated in US dollars that represent a non-US company's publicly traded local currency equity shares. These are created when the local currency shares of Indian company are delivered to the depository's local custodian bank, against which the depository bank issues Depository Receipts in US dollars.

American Depository Receipts (ADRs) are securities offered by non-US companies who want to list on any of the US exchange. Each ADR represents a certain number of a company's regular shares. ADRs allow US investors to buy shares of these companies without the costs of investing directly in a foreign stock exchange. ADRs are issued by an approved New York bank or trust company against the deposit of the original shares. These are deposited in a custodial account in the US. Such receipts have to be issued in accordance with the provisions stipulated by the SEC USA which are very stringent.

Question No.14

(b) Describe the salient features of budget manual.

(c) Explain the following:

(i) Concentration Banking

(ii) Lock Box System

(d) Comment on the Debt Service Coverage Ratio.

(e) (i) Name any four financial instruments, which are related to international financial market.

(b) Salient features of Budget Manual

- Budget manual contains many information which are required for effective budgetary planning.
- A budget manual is a collection of documents that contains key information for those involved in the planning process.
- An introductory explanation of the budgetary planning and control process, including a statement of the budgetary objective and desired results is included in Budget Manual
- Budget Manual contains a form of organisation chart to show who is responsible for the preparation of each functional budget and the way in which the budgets are interrelated.
- It contains a timetable for the preparation of each budget.
- Copies of all forms to be completed by those responsible for preparing budgets, with explanations concerning their completion is included in Budget Manual.

- (c) (i) **Concentration Banking:** In concentration banking the company establishes a number of strategic collection centres in different regions instead of a single collection centre at the head office. This system reduces the period between the time a customer mails in his remittances and the time when they become spendable funds with the company. Payments received by the different collection centers are deposited with their respective local banks which in turn transfer all surplus funds to the concentration bank of head office.
- (ii) **Lock Box System:** Another means to accelerate the flow of funds is a lock box system. The purpose of lock box system is to eliminate the time between the receipts of remittances by the company and deposited in the bank. A lock box arrangement usually is on regional basis which a company chooses according to its billing patterns.
- (d) **Comment on Debt Service Coverage Ratio (DSCR)**

Debt service coverage ratio indicates the capacity of a firm to service a particular level of debt i.e. repayment of principal and interest. High credit rating firms target DSCR to be greater than 2 in its entire loan life. High DSCR facilitates the firm to borrow at the most competitive rates. Lenders are interested in this ratio to judge the firm's ability to pay off current interest and installments.

The debt service coverage ratio can be calculated as under:

$$\text{Debt Service Coverage Ratio} = \frac{\text{Earnings available for debt service}}{\text{Interest} + \text{Installments}}$$

$$\text{Or, Debt Service Coverage Ratio} = \frac{\text{EBITDA}}{\text{Interest} + \frac{\text{Principal Repayment Due}}{1 - T_c}}$$

- (e) (i) **Financial Instruments in the International Market**

Some of the various financial instruments dealt with in the international market are:

- (a) Euro Bonds
- (b) Foreign Bonds
- (c) Fully Hedged Bonds
- (d) Medium Term Notes
- (e) Floating Rate Notes
- (f) External Commercial Borrowings
- (g) Foreign Currency Futures

Question No.15

- (a) *Identify the methods of costing for the following:*
- (i) *Where all costs are directly charged to a specific job.*
 - (ii) *Where all costs are directly charged to a group of products.*

- (iii) Where cost is ascertained for a single product.
- (iv) Where the nature of the product is complex and method can not be ascertained.
- (b) Explain the treatment of over and under absorption of overheads in cost accounts.
- (c) Explain four kinds of float with reference to management of cash.
- (d) Distinguish between 'Operating Lease' and 'Financial Lease'. (4 x 4 = 16 Marks)

(a)

Sl. No.	Method of Costing
(i)	Job Costing
(ii)	Batch Costing
(iii)	Unit Costing or Single or Output Costing
(iv)	Multiple Costing

(b) Treatment of over and under absorption of overheads are:-

- Writing off to costing P&L A/c:- Small difference between the actual and absorbed amount should simply be transferred to costing P&L A/c, if difference is large then investigate the causes and after that abnormal loss/ gain shall be transferred to costing P&L A/c.
- Use of supplementary Rate: Under this method the balance of under and over absorbed overheads may be charged to cost of W.I.P., finished stock and cost of sales proportionately with the help of supplementary rate of overhead.
- Carry Forward to Subsequent Year: Difference should be carried forward in the expectation that next year the position will be automatically corrected.

(c) Four Kinds of Float with reference to Management of Cash

The four kinds of float are:

- Billing Float:** The time between the sale and the mailing of the invoice is the billing float.
- Mail Float:** This is the time when a cheque is being processed by post office, messenger service or other means of delivery.
- Cheque processing float:** This is the time required for the seller to sort, record and deposit the cheque after it has been received by the company.
- Bank processing float:** This is the time from the deposit of the cheque to the crediting of funds in the seller's account.

(d) Difference between Financial Lease and Operating Lease

S.No.	Finance Lease	Operating Lease
1.	The risk and reward incident to ownership are passed on the lessee. The lessor only remains the legal owner of the asset.	The lessee is only provided the use of the asset for a certain time. Risk incident to ownership belongs only to the lessor.
2.	The lessee bears the risk of obsolescence.	The lessor bears the risk of obsolescence.

3.	The lease is non-cancellable by either party under it.	The lease is kept cancellable by the lessor.
4.	The lessor does not bear the cost of repairs, maintenance or operations.	Usually, the lessor bears the cost of repairs, maintenance or operations.
5.	The lease is usually full payout.	The lease is usually non-payout.

(Note: Students may answer any four of the above differences)

Question No.16

Answer any **four** of the following:

- Why money in the future is worth less than similar money today? Give the reasons and explain.
- Distinguish between 'Business Risk' and 'Financial Risk'.
- What is 'Internal Rate of Return'? Explain.
- State the different types of Packing Credit.
- Define 'Labour Turnover'. How is it measured? Explain. (4 x 4 = 16 Marks)

- Money in the Future is worth less than the Similar Money Today due to several reasons:

- Risk – There is uncertainty about the receipt of money in future.
- Preference For Present Consumption – Most of the persons and companies in general, prefer current consumption over future consumption.
- Inflation – In an inflationary period a rupee today represents a greater real purchasing power than a rupee a year hence.
- Investment Opportunities – Most of the persons and companies have a preference for present money because of availabilities of opportunities of investment for earning additional cash flow.

- Business Risk and Financial Risk:** Business risk refers to the risk associated with the firm's operations. It is an unavoidable risk because of the environment in which the firm has to operate and the business risk is represented by the variability of earnings before interest and tax (EBIT). The variability in turn is influenced by revenues and expenses. Revenues and expenses are affected by demand of firm's products, variations in prices and proportion of fixed cost in total cost.

Whereas, Financial risk refers to the additional risk placed on firm's shareholders as a result of debt use in financing. Companies that issue more debt instruments would have

higher financial risk than companies financed mostly by equity. Financial risk can be measured by ratios such as firm's financial leverage multiplier, total debt to assets ratio etc.

- Internal Rate of Return:** It is that rate at which discounted cash inflows are equal to the discounted cash outflows. It can be stated in the form of a ratio as follows:

$$\frac{\text{Cash inflows}}{\text{Cash Outflows}} = 1$$

This rate is to be found by trial and error method. This rate is used in the evaluation of investment proposals. In this method, the discount rate is not known but the cash outflows and cash inflows are known.

In evaluating investment proposals, internal rate of return is compared with a required rate of return, known as cut-off rate. If it is more than cut-off rate the project is treated as acceptable; otherwise project is rejected.

(d) **Different Types of Packing Credit**

Packing credit may be of the following types:

- (i) **Clean Packing credit:** This is an advance made available to an exporter only on production of a firm export order or a letter of credit without exercising any charge or control over raw material or finished goods. It is a clean type of export advance. Each proposal is weighted according to particular requirements of the trade and credit worthiness of the exporter. A suitable margin has to be maintained. Also, Export Credit Guarantee Corporation (ECGC) cover should be obtained by the bank.
- (ii) **Packing credit against hypothecation of goods:** Export finance is made available on certain terms and conditions where the exporter has pledgeable interest and the goods are hypothecated to the bank as security with stipulated margin. At the time of utilising the advance, the exporter is required to submit alongwith the firm export order or letter of credit, relative stock statements and thereafter continue submitting them every fortnight and whenever there is any movement in stocks.
- (iii) **Packing credit against pledge of goods:** Export finance is made available on certain terms and conditions where the exportable finished goods are pledged to the banks with approved clearing agents who will ship the same from time to time as required by the exporter. The possession of the goods so pledged lies with the bank and is kept under its lock and key.
- (iv) **E.C.G.C. guarantee:** Any loan given to an exporter for the manufacture, processing, purchasing, or packing of goods meant for export against a firm order qualifies for the packing credit guarantee issued by Export Credit Guarantee Corporation.
- (v) **Forward exchange contract:** Another requirement of packing credit facility is that if the export bill is to be drawn in a foreign currency, the exporter should enter into a forward exchange contract with the bank, thereby avoiding risk involved in a possible change in the rate of exchange.

(Note: Students may answer any four of the above packing credits).

- (e) Labour turnover in an organisation is the rate of change in the composition of labour force during a specified period measured against a suitable index. The standard of usual labour turnover in the industry or labour turnover rate for a past period may be taken as the index or norm against which actual turnover rate should be compared.

The methods for measuring labour turnover are:

Replacement method: This method takes into consideration actual replacement of labour irrespective of no. of workers leaving.

$$\text{Replacement method} = \frac{\text{Number of employees replaced during the year}}{\text{Average number of employees on roll during the year}} \times 100$$

Separation method: In this method labour turnover is measured by dividing the total no. of separations during the period by average no. of workers on payroll during the same period.

$$\text{Separation method} = \frac{\text{Number of employees separated during the year}}{\text{Average number of employees on roll during the year}} \times 100$$

Flux method: This method takes into account both the replacements as well as no. of separations during the period.

$$\text{Flux method} = \left[\frac{\text{No. of employees replaced during the year} + \text{No. of employees separated during the year}}{\text{Average number of employees on roll during the year}} \right] \times 100$$

Question No.17

- Explain 'Sunk Cost' and 'Opportunity Cost'.
- Write notes on 'Escalation Clause'.
- Explain 'Sales and Lease Back'.
- Explain 'Miller-Orr Cash Management model'. (4 x 4 = 16 Marks)

Answer

- (a) **Sunk cost:** Historical costs or the costs incurred in the past are known as sunk cost. They play no role in the current decision making process and are termed as irrelevant costs. For example, in the case of a decision relating to the replacement of a machine, the written down value of the existing machine is a sunk cost, and therefore, not considered.

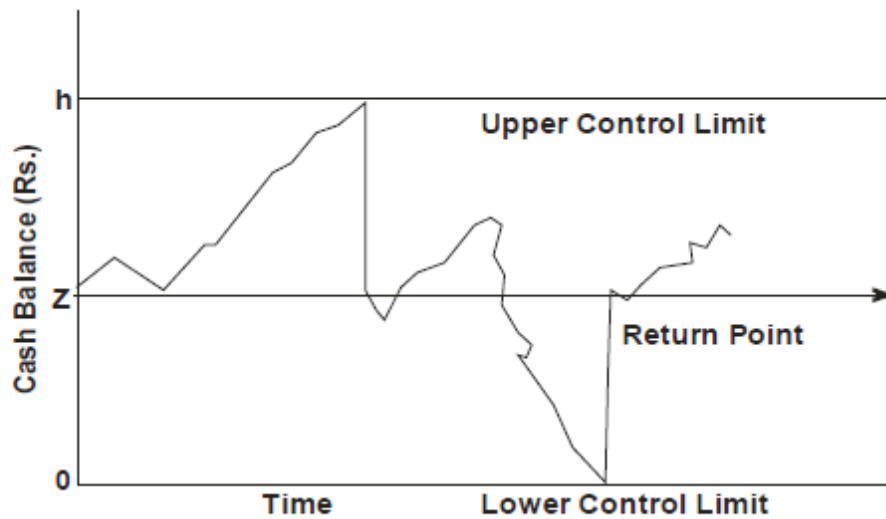
Opportunity cost: It refers to the value of sacrifice made or benefit of opportunity foregone in accepting an alternative course of action. For example, a firm financing its expansion plan by withdrawing money from its bank deposits. In such a case the loss of interest on the bank deposit is the opportunity cost for carrying out the expansion plan.

- (b) **Escalation Clause:** This clause is usually provided in the contracts as a safeguard against any likely changes in the price or utilization of material and labour. If during the period of execution of a contract, the prices of materials or labour rise beyond a certain limit, the contract price will be increased by an agreed amount. Inclusion of such a term in a contract deed is known as an 'escalation clause'.

An escalation clause usually relates to change in price of inputs, it may also be extended to increased consumption or utilization of quantities of materials, labour etc (where it is beyond the control of the contractor). In such a situation the contractor has to satisfy the contractee that the increased utilization is not due to his inefficiency.

- (c) **Sales and Lease Back:** Under this type of lease, the owner of an asset sells the asset to a party (the buyer), who in turn leases back the same asset to the owner in consideration of a lease rentals. Under this arrangement, the asset is not physically exchanged but it all happen in records only. The main advantage of this method is that the lessee can satisfy himself completely regarding the quality of an asset and after possession of the asset convert the sale into a lease agreement.

- (d) **Miller – Orr Cash Management Model:** According to this model the net cash flow is completely stochastic. When changes in cash balance occur randomly, the application of control theory serves a useful purpose. The Miller – Orr model is one of such control limit models. This model is designed to determine the time and size of transfers between an investment account and cash account. In this model control limits are set for cash balances. These limits may consist of 'h' as upper limit, 'z' as the return point and zero as the lower limit.



MILLER-ORR CASH MANAGEMENT MODEL

When the cash balance reaches the upper limit, the transfer of cash equal to ' $h - z$ ' is invested in marketable securities account. When it touches the lower limit, a transfer from marketable securities account to cash account is made. During the period when cash balance stays between (h, z) and $(z, 0)$ i.e. high and low limits, no transactions between cash and marketable securities account is made. The high and low limits of cash balance are set up on the basis of fixed cost associated with the securities transaction, the opportunities cost of holding cash and degree of likely fluctuations in cash balances. These limits satisfy the demands for cash at the lowest possible total costs.

Question No.18

Answer any four of the following:

- Define 'Cost Centre' and state its types.
 - State benefits of Integrated Accounting.
 - Differentiate between 'Factoring' and 'Bill discounting'.
 - Discuss the conflicts in Profit versus Wealth maximization principle of the firm.
 - Define 'Present Value' and 'Perpetuity'. (4 x 4 = 16 Marks)
- (a) It is defined as a location, person or an item of equipment (or group of these) for which cost may be ascertained and used for the purpose of Cost Control.

Cost Centres are of two types,

- **Personal Cost Centre:** It consists of a person or group of persons e.g. Mr. X, supervisor, foreman, accountant, engineer, process staffs, mining staffs, doctors etc.

- **Impersonal Cost Centre:** It consists of a location or an item of equipment (or group of these) e.g. Ludhiana branch, boiler house, cooling tower, weighing machine, canteen, and generator set etc.

In a manufacturing concern there are two types of cost centres viz., Production and Service cost centres.

(b) The main advantages of Integrated Accounting are as follows:

- **No need for Reconciliation:** The question of reconciling costing profit and financial profit does not arise, as there is only one figure of profit.
- **Less efforts:** Due to use of one set of books, there is significant saving in efforts made.
- **Less time consuming:** No delay is caused in obtaining information provided in books of original entry.
- **Economical Process:** It is economical also as it is based on the concept of 'Centralization of Accounting Function'

(c) **Differentiation between Factoring and Bills Discounting**

The differences between Factoring and Bills discounting are:

- (a) Factoring is called as "Invoice Factoring" whereas Bills discounting is known as 'Invoice discounting.'
- (b) In Factoring, the parties are known as the client, factor and debtor whereas in Bills discounting, they are known as drawer, drawee and payee.
- (c) Factoring is a sort of management of book debts whereas bills discounting is a sort of borrowing from commercial banks.
- (d) For factoring there is no specific Act, whereas in the case of bills discounting, the Negotiable Instruments Act is applicable.

(d) **Conflict in Profit versus Wealth Maximization Principle of the Firm:** Profit maximisation is a short-term objective and cannot be the sole objective of a company. It is at best a limited objective. If profit is given undue importance, a number of problems can arise like the term profit is vague, profit maximisation has to be attempted with a realisation of risks involved, it does not take into account the time pattern of returns and as an objective it is too narrow.

Whereas, on the other hand, wealth maximisation, as an objective, means that the company is using its resources in a good manner. If the share value is to stay high, the company has to reduce its costs and use the resources properly. If the company follows the goal of wealth maximisation, it means that the company will promote only those policies that will lead to an efficient allocation of resources.

(e) **Present Value:** Present Value" is the current value of a "Future Amount". It can also be defined as the amount to be invested today (Present Value) at a given rate over specified period to equal the "Future Amount".

Perpetuity: Perpetuity is an annuity in which the periodic payments or receipts begin on a fixed date and continue indefinitely or perpetually. Fixed coupon payments on permanently invested (irredeemable) sums of money are prime examples of perpetuities.

Question No.19

- (b) *How would you account for idle capacity cost in Cost Accounting?*
- (c) *Distinguish between Net Present Value (NPV) and Internal Rate of Return (IRR) methods for evaluating projects.*
- (d) *What is meant by venture capital financing? State its various methods.*

(b) Idle capacity costs are treated in the following ways in Cost Accounts:

- (i) **If the idle capacity cost is due to unavoidable reasons:** A supplementary overhead rate may be used to recover the idle capacity cost. In this case, the costs are charged to the production capacity utilised.
- (ii) **If the idle capacity cost is due to avoidable reasons:** Such as faulty planning, etc. the cost should be charged to Costing Profit and Loss Account.
- (iii) **If the idle capacity cost is due to trade depression, etc.,:** Being abnormal in nature the cost should also be charged to the Costing Profit and Loss Account.
- (iv) **If the idle capacity cost is due to seasonal factors,** then the cost should be charged to cost of production by inflating overhead rate.

(c) Distinguish between Net Present Value (NPV) and Internal Rate of Return (IRR)

NPV and IRR methods differ in the sense that the results regarding the choice of an asset under certain circumstances are mutually contradictory under two methods. In case of mutually exclusive investment projects, in certain situations, they may give contradictory results such that if the NPV method finds one proposal acceptable, IRR favours another. The different rankings given by the NPV and IRR methods could be due to size disparity problem, time disparity problem and unequal expected lives.

The net present value is expressed in financial values whereas internal rate of return (IRR) is expressed in percentage terms.

In the net present value cash flows are assumed to be re-invested at cost of capital rate. In IRR reinvestment is assumed to be made at IRR rates.

- (d) **Meaning of Venture Capital:** The venture capital financing refers to financing and funding of the small scale enterprises, high technology and risky ventures.

Methods of Venture Capital financing: Some common methods of venture capital financing are as follows:

- (i) **Equity financing:** The venture capital undertakings generally requires funds for a longer period but may not be able to provide returns to the investors during the initial stages. Therefore, the venture capital finance is generally provided by way of equity share capital..
- (ii) **Conditional Loan:** A conditional loan is repayable in the form of a royalty after the venture is able to generate sales. No interest is paid on such loans. In India Venture Capital Financers charge royalty ranging between 2 to 15 per cent; actual rate depends on other factors of the venture such as gestation period, cash flow patterns, riskiness and other factors of the enterprise.

- (iii) *Income Note*: It is a hybrid security which combines the features of both conventional loan and conditional loan. The entrepreneur has to pay both interest and royalty on sales but at substantially low rates
- (iv) *Participating Debenture*: Such security carries charges in three phases- in the start-up phase, no interest is charged, next stage a low rate of interest is charged upto a particular level of operations, after that, a high rate of interest is required to be paid.

Question No.20

- (b) *Describe the various steps involved in adopting standard costing system in an organization.*
- (c) *Evaluate the role of cash budget in effective cash management system.*
- (d) *Discuss the risk-return considerations in financing current assets.*
- (e) *Distinguish between the following:*

- (i) *'Scraps' and 'Defectives' in costing*
- (ii) *Preference Shares and Debentures.*

(4 × 4 = 16 Marks)

- (b) The Steps of standard costing is as below:

- (i) **Setting of Standards**: The first step is to set standards which are to be achieved.
- (ii) **Ascertainment of actual costs**: Actual cost for each component of cost is ascertained. Actual costs are ascertained from books of account, material invoices, wage sheet, charge slip etc.
- (iii) **Comparison of actual cost and standard cost**: Actual costs are compared with the standards costs and variances are determined.
- (iv) **Investigation of variances**: Variances arises are investigated for further action. Based on this performance is evaluated and appropriate actions are taken.
- (v) **Disposition of variances**: Variances arise are disposed off by transferring it the relevant accounts (costing profit and loss account) as per the accounting method (plan) adopted.

- (c) Cash Budget is the most significant device to plan for and control cash receipts and payments. It plays a very significant role in effective Cash Management System. This represents cash requirements of business during the budget period.

The various role of cash budgets in Cash Management System are:-

- (i) Coordinate the timings of cash needs. It identifies the period(s) when there might either be a shortage of cash or an abnormally large cash requirement;
- (ii) It also helps to pinpoint period(s) when there is likely to be excess cash;
- (iii) It enables firm which has sufficient cash to take advantage like cash discounts on its accounts payable; and
- (iv) Lastly it helps to plan/arrange adequately needed funds (avoiding excess/shortage of cash) on favorable terms.

- (d) The financing of current assets involves a trade off between risk and return. A firm can choose from short or long term sources of finance. Short term financing is less expensive than long term financing but at the same time, short term financing involves greater risk than long term financing.

Depending on the mix of short term and long term financing, the approach followed by a company may be referred as matching approach, conservative approach and aggressive approach.

In matching approach, long-term finance is used to finance fixed assets and permanent current assets and short term financing to finance temporary or variable current assets. Under the conservative plan, the firm finances its permanent assets and also a part of temporary current assets with long term financing and hence less risk of facing the problem of shortage of funds.

An aggressive policy is said to be followed by the firm when it uses more short term financing than warranted by the matching plan and finances a part of its permanent current assets with short term financing.

- (e) (i) Difference between Scrap and Defectives

Scrap	Defectives
1. It is loss connected with output	1. This type of loss connected with the output but it can be in the input as well.
2. Scraps are not intended but cannot be eliminated due to nature of material or process itself.	2. Defectives also are not intended but can be eliminated through proper control.
3. Generally scraps are not used or rectified.	3. Defectives can be used after rectification.
4. Scraps have insignificant recoverable value.	4. Defectives are sold at lower value from that of good one.

- (ii) Difference between Preference Shares and Debentures

Basis of difference	Preference shares	Debentures
Ownership	Preference Share Capital is a special kind of share	Debenture is a type of loan which can be raised from the public
Payment of Dividend/ Interest	its holders enjoy priority both as regard to the payment of a fixed amount of dividend and also towards repayment of capital in case of winding up of a company	It carries fixed percentage of interest.
Nature	Preference shares are a hybrid form of financing with some characteristic of equity shares and some attributes of Debt Capital.	Debentures are instrument for raising long term capital with a period of maturity.

Question No.21

(b) Write treatment of items associated with purchase of material:

- (i) Cash discount
- (ii) Subsidy/Grant/Incentives
- (iii) VAT or State Sales Tax
- (iv) Commission/ brokerage paid

(c) Distinguish between operating lease and finance lease.

(d) Describe the three principles relating to selection of marketable securities. (4 × 4 = 16 Marks)

(b) Treatment of items associated with purchase of material

Sl. No.	Items	Treatment
(i)	Cash discount	Cash discount is not deducted from the purchase price.
(ii)	Subsidy/Grant/Incentives	Any subsidy/ grant/ incentive received from the Government or from other sources deducted from the cost of purchase.
(iii)	VAT or State Sales Tax	State Sales Tax/VAT is paid on intra-state sale and collected from the buyers. It is excluded from the cost of purchase if credit for the same is available. Unless mentioned specifically it should not form part of cost of purchase.
(iv)	Commission or brokerage paid	Commission or brokerage paid is added with the cost of purchase.

(c) Distinguish between Operating Lease and Financial Lease

Point	Operating Lease	Finance Lease
Ownership	The lessee is only provided the use of the asset for a certain time. Risk incident to ownership belongs only to the lessor.	The risk and reward incidental to ownership are passed on to the lessee. The lessor only remains the legal owner of the asset.
Bearing risk	The lessor bears the risk of obsolescence.	The lessee bears the risk of obsolescence.
Purchase option	The lessee does not have any option to buy the asset during the lease period.	It allows the lessee to have a purchase option during the lease period.
Expenses borne	Usually, the lessor bears the cost of repairs, maintenance or operations.	The lessor does not bear the cost of repairs, maintenance or operations.
Treatment	Lease payment is treated like operating expenses like rent.	Finance lease is generally treated like a loan.

- (d) Three principles relating to selection of marketable securities are as follows

Safety: Return and risks go hand in hand. As the objective in this investment is ensuring liquidity, minimum risk is the criterion of selection.

Maturity: Matching of maturity and forecasted cash needs is essential. Prices of long term securities fluctuate more with changes in interest rates and are therefore, more risky.

Marketability: It refers to the convenience, speed and cost at which a security can be converted into cash. If the security can be sold quickly without loss of time and price it is highly liquid or marketable.

Question No.22

- (b) *Narrate the objectives of cost accounting.*

- (d) *State the principles that should be followed while designing the capital structure of a company.*

- (e) *Explain what do you mean by:*

(i) *Leveraged Lease*

(ii) *Profit Centres*

(4×4 = 16 Marks)

- (b) The main objectives of introduction of a Cost Accounting System in a manufacturing organization are as follows:

(i) **Ascertainment of cost:** The main objective of a Cost Accounting system is to ascertain cost for cost objects. Costing may be post completion or continuous but the aim is to arrive at a complete and accurate cost figure to assist the users to compare, control and make various decisions.

(ii) **Determination of selling price:** Cost Accounting System in a manufacturing organisation enables to determine desired selling price after adding expected profit margin with the cost of the goods manufactured.

(iii) **Cost control and Cost reduction:** Cost Accounting System equips the cost controller to adhere and control the cost estimate or cost budget and assist them to identify the areas of cost reduction.

(iv) **Ascertainment of profit of each activity:** Cost Accounting System helps to classify cost on the basis of activity to ascertain activity wise profitability.

(v) **Assisting in managerial decision making:** Cost Accounting System provides relevant cost information and assists managers to make various decisions.

- (d) The fundamental principles are:

(i) **Cost Principle:** According to this principle, an ideal pattern or capital structure is one that minimises cost of capital structure and maximises earnings per share (EPS).

(ii) **Risk Principle:** According to this principle, reliance is placed more on common equity for financing capital requirements than excessive use of debt. Use of more and more debt means higher commitment in form of interest payout. This would lead to erosion of shareholders value in unfavourable business situation.

- (iii) **Control Principle:** While designing a capital structure, the finance manager may also keep in mind that existing management control and ownership remains undisturbed.
- (iv) **Flexibility Principle:** It means that the management chooses such a combination of sources of financing which it finds easier to adjust according to changes in need of funds in future too.
- (v) **Other Considerations:** Besides above principles, other factors such as nature of industry, timing of issue and competition in the industry should also be considered.
- (e) (i) **Leveraged Lease:** Under this lease, a third party is involved beside lessor and lessee. The lessor borrows a part of the purchase cost (say 80%) of the asset from the third party i.e., lender and asset so purchased is held as security against the loan. The lender is paid off from the lease rentals directly by the lessee and the surplus after meeting the claims of the lender goes to the lessor. The lessor is entitled to claim depreciation allowance.
- (ii) **Profit Centres** are the part of a business which is accountable for both cost and revenue. These are responsible for generating and maximizing profits. Performance of these centres is measured with the volume of profit it earns.

Question No.23

(a) *Write short notes on:*

- (i) *Sunk Cost*
- (ii) *Opportunity Cost*
- (c) *List the emerging issues (any four) affecting the future role of CFO.*
- (d) *State advantages of Debt. Securitisation.*

(4 × 4 = 16 Marks)

Answer

- (a) (i) **Sunk Cost:** Historical costs incurred in the past are known as sunk costs. They play no role in decision making in the current period. For example, in the case of a decision relating to the replacement of a machine, the written down value of the existing machine is a sunk cost and therefore, not considered.
- (ii) **Opportunity Cost:** This cost refers to the value of sacrifice made or benefit of opportunity foregone in accepting an alternative course of action. For example, a firm financing its expansion plan by withdrawing money from its bank deposits. In such a case the loss of interest on the bank deposit is the opportunity cost for carrying out the expansion plan.
- (c) **Emerging Issues/Priorities Affecting the Future Role of Chief Financial Officer (CFO)**
 - (i) **Regulation:** Regulation requirements are increasing and CFOs have an increasingly personal stake in regulatory adherence.

- (ii) **Globalisation:** The challenges of globalisation are creating a need for finance leaders to develop a finance function that works effectively on the global stage and that embraces diversity.
 - (iii) **Technology:** Technology is evolving very quickly, providing the potential for CFOs to reconfigure finance processes and drive business insight through 'big data' and analytics.
 - (iv) **Risk:** The nature of the risks that organisations face are changing, requiring more effective risk management approaches and increasingly CFOs have a role to play in ensuring an appropriate corporate ethos.
 - (v) **Transformation:** There will be more pressure on CFOs to transform their finance functions to drive a better service to the business at zero cost impact.
 - (vi) **Stakeholder Management:** Stakeholder management and relationships will become important as increasingly CFOs become the face of the corporate brand.
 - (vii) **Strategy:** There will be a greater role to play in strategy validation and execution, because the environment is more complex and quick changing, calling on the analytical skills CFOs can bring.
 - (viii) **Reporting:** Reporting requirements will broaden and continue to be burdensome for CFOs.
 - (ix) **Talent and Capability:** A brighter spotlight will shine on talent, capability and behaviours in the top finance role.
- (d) **Advantages of Debt Securitisation:** Debt securitisation is a method of recycling of funds and is especially beneficial to financial intermediaries to support lending volumes.

The advantages of debt securitisation are as follows:

(a) **To the originator:**

- (i) The asset is shifted off the Balance Sheet, thus giving the originator recourse to off balance sheet funding.
- (ii) It converts illiquid assets to liquid portfolio.
- (iii) It facilitates better balance sheet management; assets are transferred off balance sheet facilitating satisfaction of capital adequacy norms.
- (iv) The originator's credit rating enhances.

(b) **For the investors:** Securitisation opens up new investment avenues. Though the investor bears the credit risk, the securities are tied up to definite assets.

Question No.24

- (a) *What is meant by Job Costing? Give examples of (any four) industries where it is used.*
- (c) *Explain briefly the functions of Treasury Department.*
- (d) *Explain the following:*
 - (i) *Bridge finance*
 - (ii) *Conversion cost*
- (e) *Explain the relevance of time value of money.*

(a) Job Costing:

Meaning: It is a method of costing which is used when the work is undertaken as per the customer's special requirement. When an inquiry is received from the customer, costs expected to be incurred on the job are estimated and on the basis of this estimate, a price is quoted to the customer. Actual cost of materials, labour and overheads are accumulated and on the completion of job, these actual costs are compared with the quoted price and thus the profit or loss on it is determined.

Example: Job costing is applicable in printing press, ship-building, heavy machinery, foundry, general engineering works, machine tools, interior decoration, repairs and other similar work.

- (c) The functions of treasury department management are to ensure proper usage, storage and risk management of liquid funds so as to ensure that the organisation is able to meet its obligations, collect its receivables and also maximize the return on its investments. Towards this end the treasury function may be divided into the following:

- (i) **Cash Management:** The efficient collection and payment of cash both inside the organisation and to third parties is the function of treasury department. Treasury normally manages surplus funds in an investment portfolio.
 - (ii) **Currency Management:** The treasury department manages the foreign currency risk exposure of the company. It advises on the currency to be used when invoicing overseas sales. It also manages any net exchange exposures in accordance with the company policy.
 - (iii) **Fund Management:** Treasury department is responsible for planning and sourcing the company's short, medium and long-term cash needs. It also participates in the decision on capital structure and forecasts future interest and foreign currency rates.
 - (iv) **Banking:** Since short-term finance can come in the form of bank loans or through the sale of commercial paper in the money market, therefore, treasury department carries out negotiations with bankers and acts as the initial point of contact with them.
 - (v) **Corporate Finance:** Treasury department is involved with both acquisition and disinvestment activities within the group. In addition, it is often responsible for investor relations.
- (d) (i) **Bridge Finance:** Bridge finance refers, normally, to loans taken by the business, usually from commercial banks for a short period, pending disbursement of term loans by financial institutions, normally it takes time for the financial institution to finalise procedures for creation of security, tie-up participation with other institutions etc. even though a positive appraisal of the project has been made. However, once the loans are approved in principle, firms in order not to lose further time in starting their projects arrange for bridge finance. Generally, rate of interest on bridge finance is higher as compared with that on term loans.
- (ii) **Conversion cost:** It is the cost of transforming basic material into finished goods. Conversion Cost consists of direct wages, direct expenses and manufacturing

overheads. So,

Conversion Cost= Direct labour Cost + Direct Expenses + Manufacturing Overhead

Or

Conversion Cost = Factory Cost – Direct Materials Cost

- (e) Time value of money means that worth of a rupee received today is different from the worth of a rupee to be received in future. The preference of money now as compared to future money is known as time preference for money.

A rupee today is more valuable than rupee after a year due to several reasons:

- ◆ Risk – There is uncertainty about the receipt of money in future.
- ◆ Preference for present consumption – Most of the persons and companies in general, prefer current consumption over future consumption.
- ◆ Inflation – In an inflationary period a rupee today represents a greater real purchasing power than a rupee a year hence.
- ◆ Investment opportunities – Most of the persons and companies have a preference for present money because of availabilities of opportunities of investment for earning additional cash flow.
- ◆ Many financial problems involve cash flow accruing at different points of time for evaluating such cash flow an explicit consideration of time value of money is required.

Question No.25

- (a) Explain 'Cost Unit' and 'Cost Centre'.
- (b) What are the essential factors for installing a cost accounting system? Explain.
- (c) Distinguish between 'Funds Flow' and 'Cash Flow'.

- (a) (i) **Cost Units:** It is a unit of product, service or time (or combination of these) in relation to which costs may be ascertained or expressed.

We may for instance determine the cost per tonne of steel, per tonne kilometre of a transport service or cost per machine hour. Sometime, a single order or a contract constitutes a cost unit. A batch which consists of a group of identical items and maintains its identity through one or more stages of production may also be considered as a cost unit.

Cost units are usually the units of physical measurement like number, weight, area, volume, length, time and value.

- (ii) **Cost Centre:** It is defined as a location, person or an item of equipment (or group of these) for which cost may be ascertained and used for the purpose of Cost Control.

Cost Centres are of two types:

Personal Cost Centre: It consists of a person or group of persons e.g. Mr. X, supervisor, foreman, accountant, engineer, process staffs, mining staffs, doctors etc.

Impersonal Cost Centre: It consists of a location or an item of equipment (or group of these) e.g. boiler house, cooling tower, weighing machine, canteen, and generator set etc.

- (b) Before installation of a system of cost accounting in a manufacturing organisation the under mentioned factors should be studied:
- (i) **Objective:** The objective of costing system, for example whether it is being introduced for fixing prices or for insisting a system of cost control.
 - (ii) **Nature of Business or Industry:** The Industry in which business is operating. Every business industry has its own peculiar feature and costing objectives. According to its cost information requirement cost accounting methods are followed. For example, Indian Oil Corporation Ltd. has to maintain process wise cost accounts to find out cost incurred on a particular process say in crude refinement process etc.
 - (iii) **Organisational Hierarchy:** Costing system should fulfill the requirement of different level of management. Top management is concerned with the corporate strategy, strategic level management is concerned with marketing strategy, product diversification, product pricing etc. Operational level management needs the information on standard quantity to be consumed, report on idle time etc.
 - (iv) **Knowing the product:** Nature of product determines the type of costing system to be implemented. The product which has by-products requires costing system which account for by-products as well. In case of perishable or short self- life, marginal costing method is required to know the contribution and minimum price at which it can be sold.
 - (v) **Knowing the production process:** A good costing system can never be established without the complete knowledge of the production process. Cost apportionment can be done on the most appropriate and scientific basis if a cost accountant can identify degree of effort or resources consumed in a particular process. This also includes some basic technical know-how and process peculiarity.
 - (vi) **Information synchronisation:** Establishment of a department or a system requires substantial amount of organisational resources. While drafting a costing system, information needs of various other departments should be taken into account. For example, in a typical business organisation accounts department needs to submit monthly stock statement to its lender bank, quantity wise stock details at the time filing returns to tax authorities etc.
 - (vii) **Method of maintenance of cost records:** The manner in which Cost and Financial accounts could be inter-locked into a single integral accounting system and in which results of separate sets of accounts, cost and financial, could be reconciled by means of control accounts.
 - (viii) **Statutory compliances and audit:** Records are to be maintained to comply with statutory requirements, standards to be followed (Cost Accounting Standards and Accounting Standards).

- (ix) **Information Attributes:** Information generated from the Costing system should be possess all the attributes of an information i.e. complete, accurate, timeliness, confidentiality etc. This also meets the requirements of management information system.

(c) **The points of distinction between Funds flow and Cash flow are as below:**

Funds flow	Cash flow
(i) It ascertains the changes in financial position between two accounting periods.	(i) It ascertains the changes in balance of cash in hand and bank.
(ii) It analyses the reasons for change in financial position between two balance sheets	(ii) It analyses the reasons for changes in balance of cash in hand and bank
(iii) It reveals the sources and application of funds.	(iii) It shows the inflows and outflows of cash.
(iv) It helps to test whether working capital has been effectively used or not.	(iv) It is an important tool for short term analysis.
	(v) The two significant areas of analysis are cash generating efficiency and free cash flow.

Question No.26

- (a) *Discuss briefly the principles to be followed while taking credit for profit on incomplete contract.*
- (b) *State the difference between Cost Accounting and Management Accounting.*
- (c) *Explain the meaning and advantages of Factoring.*
- (d) *Explain:*
- (i) *Time Value of Money*
- (ii) *A.B.C. Analysis*
- (e) *Explain GDR and ADR.* (4 × 4 = 16 Marks)

(a) Principles to be followed while taking credit for profit on incomplete contracts:

The portion of profit to be credited to costing profit and loss account depends on the stage of completion of a contract. The stage of completion of the contract refers to certified work only and uncertified work is not considered.

The transfer of profit to the costing profit and loss account is done as under:

- (i) *Contract less than 25% complete:* If the contract has just started or it is less than 25% complete, no profit is taken into account.

- (ii) *Contract is 25% or more but less than 50% complete:* In this case one third of the notional profit reduced in the ratio of cash received to work certified, may be transferred to the profit and loss account. The amount of profit to be transferred to the profit and loss account may be determined by using the following formula:

$$\frac{1}{3} \times \text{Notional profit} \times \frac{\text{Cash received}}{\text{Work certified}}$$

- (iii) *Contract is 50% or more but less than 90% complete:* In this case, two third of the notional profit, reduced by the portion of cash received to work certified may be transferred to the profit and loss account. In this case the formula to be used is as under:

$$\frac{2}{3} \times \text{Notional profit} \times \frac{\text{Cash received}}{\text{Work certified}}$$

- (iv) *Contracts nearing completion, say between 90% and 100% complete:* When a contract is nearing completion or 90% or more work has been done on a contract. The amount of profit to be credited to costing profit and loss account may be determined by **using any one of the following formula.**

(a) $\text{Estimated profit} \times \frac{\text{Work certified}}{\text{Contract price}}$

(b) $\text{Estimated profit} \times \frac{\text{Work certified}}{\text{Contract price}} \times \frac{\text{Cash received}}{\text{Work certified}}$

or $\text{Estimated profit} \times \frac{\text{Cash Received}}{\text{Contract price}}$

(c) $\text{Estimated Profit} \times \frac{\text{Cost of work to date}}{\text{Estimated total cost}}$

(d) $\text{Estimated profit} \times \frac{\text{Cost of work to date}}{\text{Estimated total cost}} \times \frac{\text{Cash received}}{\text{Work certified}}$

(e) $\text{Notional profit} \times \frac{\text{Work certified}}{\text{Contract price}}$

(b) Difference between Cost Accounting and Management Accounting

	Basis	Cost Accounting	Management Accounting
(i)	Nature	It records the quantitative aspect only	It records both qualitative and quantitative aspect.
(ii)	Objective	It records the cost of producing a product and providing a service	It Provides information to management for planning and co-ordination
(iii)	Area	It only deals with cost Ascertainment.	It is wider in scope as it includes F.A., budgeting, Tax, Planning.

(iv)	Recording of data	It uses both past and present figures.	It is focused with the projection of figures for future.
(v)	Development	It's development is related to industrial revolution.	It develops in accordance to the need of modern business world.
(vi)	Rules and Regulation	It follows certain principles and procedures for recording costs of different products	It does not follow any specific rules and regulations.

- (c) **Meaning of Factoring:** Factoring is a specialised service related with receivable management which involves credit investigation, sales ledger management, purchase and collection of debts, credit protection as well as provision of finance against receivables. In factoring, accounts receivables are generally sold to a financial institution, known as factor, who charges commission and bears the credit risks associated with the accounts receivables purchased by it.

The factor takes the responsibility of monitoring, follow-up, collection and risk management related with receivables (debts).

Advantages of Factoring:

- (1) The firm can convert accounts receivables into cash without bothering about repayment.
 - (2) Factoring ensures a definite pattern of cash inflows.
 - (3) Continuous factoring virtually eliminates the need for the credit department. That is why receivables financing through factoring is gaining popularity as useful source of financing short-term funds requirements of business enterprises because of the inherent advantage of flexibility it affords to the borrowing firm. The seller firm may continue to finance its receivables on a more or less automatic basis. If sales expand or contract it can vary the financing proportionally.
 - (4) Unlike an unsecured loan, compensating balances are not required in this case. Another advantage consists of relieving the borrowing firm of substantially credit and collection costs and to a degree from a considerable part of cash management.
- (d) (i) **Time Value of Money:** It means money has time value. A rupee today is more valuable than a rupee after a year. Similarly, a rupee received in future is less valuable than it is today. Time value of money can be of two types, present value of money and future value of money. Concept of discounting is applicable to present value of money and compounding is applicable to future value of money. In a nutshell, time value of money represents monetary value arising out of difference of time.
- (ii) **ABC Analysis:** It is a system of selective inventory control whereby the measure of control over an item of inventory varies with its usage value. It exercises discriminatory control over different items of stores grouped on the basis of the investment involved. Usually the items of material are grouped into three categories viz; A, B and C according to their use value during a period. In other words, the high use value items are controlled more closely than the items of low use value.

- (i) 'A' Category of items consists of only a small percentage i.e., about 10 % of the total items of material handled by the stores but require heavy investment i.e., about 70% of inventory value, because of their high prices and heavy requirement.
 - (ii) 'B' Category of items comprises of about 20% of the total items of material handled by stores. The percentage of investment required is about 20% of the total investment in inventories.
 - (iii) 'C' category of items does not require much investment. It may be about 10% of total inventory value but they are nearly 70% of the total items handled by stores
- (e) **Global Depository Receipts (GDRs):** It is a negotiable certificate denominated in US dollars which represents a Non-US company's publically traded local currency equity shares. GDRs are created when the local currency shares of an Indian company are delivered to Depository's local custodian Bank against which the Depository bank issues depository receipts in US dollars. The GDRs may be traded freely in the overseas market like any other dollar-expressed security either on a foreign stock exchange or in the over-the-counter market or among qualified institutional buyers.

American Depository Receipts (ADRs): American Depository Receipts (ADRs) are securities offered by non- US companies who want to list on any of the US exchanges. It is a derivative instrument. It represents a certain number of company's shares. These are used by depository bank against a fee income. ADRs allow US investors to buy shares of these companies without the cost of investing directly in a foreign stock exchange. ADRs are listed on either NYSE or NASDAQ. It facilitates integration of global capital markets. The company can use the ADR route either to get international listing or to raise money in international capital market.