

PAPER – 3 : COST ACCOUNTING AND FINANCIAL MANAGEMENT

PART I : COST ACCOUNTING

Answer all questions.

Question 1

- (i) *What is Cost accounting? Enumerate its important objectives.*
- (ii) *Distinguish between Fixed overheads and Variable overheads.*
- (iii) *Re-order quantity of material 'X' is 5,000 kg.; Maximum level 8,000 kg.; Minimum usage 50 kg. per hour; minimum re-order period 4 days; daily working hours in the factory is 8 hours. You are required to calculate the re-order level of material 'X'.*
- (iv) *What do you understand by Key factor? Give two examples of it.*
- (v) *What are the main advantages of integrated accounts? (5 x 2 =10 Marks)*

Answer

- (i) Cost Accounting is defined as "the process of accounting for cost which begins with the recording of income and expenditure or the bases on which they are calculated and ends with the preparation of periodical statements and reports for ascertaining and controlling costs."

The main objectives of the cost accounting are as follows:

- (a) *Ascertainment of cost:* There are two methods of ascertaining costs, viz., Post Costing and Continuous Costing. Post Costing means, analysis of actual information as recorded in financial books. Continuous Costing, aims at collecting information about cost as and when the activity takes place so that as soon as a job is completed the cost of completion would be known.
- (b) *Determination of selling price:* Business enterprises run on a profit making basis. It is thus necessary that the revenue should be greater than the costs incurred. Cost accounting provides the information regarding the cost to make and sell the product or services produced.
- (c) *Cost control and cost reduction:* To exercise cost control, the following steps should be observed:
 - (i) Determine clearly the objective.
 - (ii) Measure the actual performance.
 - (iii) Investigate into the causes of failure to perform according to plan;
 - (iv) Institute corrective action.
- (d) *Cost Reduction* may be defined "as the achievement of real and permanent reduction in the unit cost of goods manufactured or services rendered without impairing their suitability for the use intended or diminution in the quality of the product."

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- (e) *Ascertaining the profit of each activity*: The profit of any activity can be ascertained by matching cost with the revenue of that activity. The purpose under this step is to determine costing profit or loss of any activity on an objective basis.
- (f) *Assisting management in decision making*: Decision making is defined as a process of selecting a course of action out of two or more alternative courses. For making a choice between different courses of action, it is necessary to make a comparison of the outcomes, which may be arrived under different alternatives.

(ii) Fixed Overheads v/s Variable Overheads

Fixed overheads are not affected by any variation in the volume of activity, e.g., managerial remuneration, rent etc. These remain the same from one period to another except when they are deliberately changed. Fixed overheads are generally variable per unit of output or activity.

On other hand the variable overheads that change in proportion to the change in the volume of activity or output, e.g., power consumed, consumable stores etc. The variable overheads are generally constant per unit of output or activity.

- (iii)** Re-order Level = Maximum Level – [Re-order quantity – (Minimum usage per day × Minimum Re-order Period)]

$$= 8000 \text{ kg.} - [5000 \text{ kg.} - (400 \text{ kg}^* \times 4)]$$

$$= 8000 \text{ kg.} - 3400 \text{ kg.} = 4600 \text{ kg.}$$

Hence, Re-order level is 4600 kg.

$$*\text{Minimum usage per day} = 50 \text{ kg.} \times 8 = 400 \text{ kg.}$$

- (iv)** Key factor is a factor which at a particular time or over a period limits the activities of an undertaking. It may be the level of demand for the products or service or it may be the shortage of one or more of the productive resources.

Examples of key factors are:

- (a) Shortage of raw material.
- (b) Shortage of Labour.
- (c) Plant capacity available.
- (d) Sales capacity available.
- (e) Cash availability.

- (v)** Main advantages of integrated accounts are as follows:

- (a) The question of reconciling costing profit and financial profit does not arise, as there is one figure of profit only.
- (b) Due to use of one set of books, there is a significant extent of saving in efforts made.

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- (c) No delay is caused in obtaining information as it is provided from books of original entry.
- (d) It is economical also as it is based on the concept of "Centralisation of Accounting Functions."

Question 2

SB Constructions Limited has entered into a big contract at an agreed price of Rs. 1,50,00,000 subject to an escalation clause for material and labour as spent out on the contract and corresponding actuals are as follows:

	Standard		Actual	
Material:	Quantity (Tonnes)	Rate per Tonne (Rs.)	Quantity (Tonnes)	Rate per Tonne (Rs.)
A	3,000	1,000	3,400	1,100
B	2,400	800	2,300	700
C	500	4,000	600	3,900
D	100	30,000	90	31,500
Labour:	Hours	Hourly Rate (Rs.)	Hours	Hourly Rate (Rs.)
L ₁	60,000	15	56,000	18
L ₂	40,000	30	38,000	35

You are required to:

- (i) Give your analysis of admissible escalation claim and determine the final contract price payable. (4 Marks)
- (ii) Prepare the contract account, if the all expenses other than material and labour related to the contract are Rs. 13,45,000. (3 Marks)
- (iii) Calculate the following variances and verify them : (8 Marks)
 - (a) Material cost variance
 - (b) Material price variance
 - (c) Material usage variance
 - (d) Labour cost variance
 - (e) Labour rate variance
 - (f) Labour efficiency variance.

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Answer

(i) Statement showing additional claim due to escalation clause.

Material	Std. Qty/Hours	Std. Rate	Actual Rate	Variation in Rate (Rs.)	Escalation claim (Rs.)
	(a)	(b)	(c)	(d)= (c-b)	(e)= (a×d)
A	3000	1000	1100	+100	+3,00,000
B	2400	800	700	-100	-2,40,000
C	500	4000	3900	-100	-50,000
D	100	30000	31500	+1500	+1,50,000
Material escalation claim					<u>1,60,000</u>
Labour:					
L ₁	60,000	15	18	+3	+1,80,000
L ₂	40,000	30	35	+5	+2,00,000
Labour escalation claim					<u>3,80,000</u>

Statement showing Final Contract Price

	Rs.
Agreed contract price	1,50,00,000
Add: Agreed escalation claim:	Rs.
Material Cost	1,60,000
Labour Cost	<u>3,80,000</u>
Final Contract Price	<u>1,55,40,000</u>

(ii) Contract Account

<i>Dr.</i>	<i>Cr.</i>
	Rs.
To Material:	By Contractee's A/c 1,55,40,000
A – 3,400 × Rs.1,100	
B – 2,300 × Rs. 700	
C – 600 × Rs. 3,900	
D- 90 × <u>Rs.31,500</u>	1,05,25,000
To Labour:	

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	L1 – 56,000 × Rs.18	
	L2 – 38,000 × <u>Rs.35</u>	23,38,000
To	Other expenses	13,45,000
To	Profit and Loss A/c	13,32,000
		<u>1,55,40,000</u>
		<u>1,55,40,000</u>

(iii)

Material Variances

SQ × SP	Rs.	AQ × AP	Rs.	AQ × SP	Rs.
A-3000×1000 =	30,00,000	3,400×1,100 =	37,40,000	3400×1000 =	34,00,000
B-- 2400×800 =	19,20,000	2,300×700 =	16,10,000	2,300×800 =	18,40,000
C- 500 ×4000 =	20,00,000	600×3,900 =	23,40,000	600×4,000 =	24,00,000
D-100×30000 =	30,00,000	90×31,500 =	28,35,000	90×30,000 =	27,00,000
Total	<u>99,20,000</u>		<u>1,05,25,000</u>		<u>1,03,40,000</u>

Material Cost Variance (MCV) = (SQ × SP) – (AQ × AP)

= Rs.99, 20,000 – Rs.1, 05, 25,000 = Rs.6, 05,000(A)

Material Price Variance (MPV) = AQ (SP – AP) or (AQ × SP) – (AQ × AP)

= Rs.1, 03, 40,000 – Rs.1, 05, 25,000 = Rs.1, 85,000 (A)

Material usage variance (MUV)= (SQ × SP) – (AQ × SP)

= Rs.99, 20,000 – Rs.1, 03, 40,000 = Rs.4, 20,000(A)

Verification = MCV = MPV + MUV

Or Rs.6, 05,000(A) = Rs.1, 85,000(A) + Rs.4, 20,000(A)

Or Rs.6, 05,000(A) = Rs.6, 05,000(A)

Labour Variances

SH × SR	Rs.	AH × AR	Rs.	AH × SR	Rs.
L ₁ –60,000 × 15 =	9,00,000	56,000 × 18 =	10,08,000	56,000×15 =	8,40,000
L ₂ – 40,000 × 30 =	12,00,000	38,000 × 35 =	13,30,000	38,000×30 =	11,40,000
Total	<u>21,00,000</u>		<u>23,38,000</u>		<u>19,80,000</u>

Labour Cost Variance (LCV) = (SH × SR) – (AH × AR)

= Rs.21,00,000 – Rs.23,38,000 = Rs.2,38,000 (A)

Labour Rate Variance (LRV) = (AH × SR) – (AH × AR)

= Rs.19,80,000 – Rs.23,38,000 = Rs.3,58,000(A)

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$$\begin{aligned}
 \text{Labour Efficiency Variance (LEV)} &= (\text{SH} \times \text{SP}) - (\text{AH} \times \text{SP}) \\
 &= \text{Rs.}21,00,000 - \text{Rs.}19,80,000 = \text{Rs.}1,20,000(\text{F}) \\
 \text{Verification - LCV} &= \text{LRV} + \text{LEV} \\
 \text{Rs.}2,38,000(\text{A}) &= \text{Rs.}3,58,000(\text{A}) + \text{Rs.}1,20,000(\text{F}) \\
 \text{Or Rs.}2,38,000(\text{A}) &= \text{Rs.}2,38,000(\text{A})
 \end{aligned}$$

Question 3

- (a) *Pharma Limited produces product 'Glucodin' which passes through two processes before it is completed and transferred to finished stock. The following data relates to March, 2010:* (8 Marks)

	Process-I	Process-II	Finished Stock
	Rs.	Rs.	Rs.
Opening Stock	1,50,000	1,80,000	4,50,000
Direct materials	3,00,000	3,15,000	-
Direct Wages	2,24,000	2,25,000	-
Factory Overheads	2,10,000	90,000	-
Closing Stock	74,000	90,000	2,25,000
Inter process profit included in Opening stock	NIL	30,000	1,65,000

Output of process I is transferred to process II at 25 percent profit on the transfer price, whereas output of process II is transferred to finished stock at 20 percent on transfer price. Stock in processes are valued at prime cost. Finished stock is valued at the price at which it is received from process II. Sales for the month is Rs. 28,00,000.

You are required to prepare Process-I a/c, Process-II a/c, and Finished Stock a/c showing the profit element at each stage.

- (b) *A transport company has been given a 40 kilometre long route to run 5 buses. The cost of each bus is Rs. 6,50,000. The buses will make 3 round trips per day carrying on an average 80 percent passengers of their seating capacity. The seating capacity of each bus is 40 passengers. The buses will run on an average 25 days in a month. The other information for the year 2010-11 are given below:*

Garage rent	Rs. 4,000 per month
Annual repairs and maintenance	Rs. 22,500 each bus
Salaries of 5 drivers	Rs. 3,000 each per month
Wages of 5 conductors	Rs. 1,200 each per month

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Manager's salary	Rs. 7,500 per month
Road tax, permit fee, etc.	Rs. 5,000 for a quarter
Office expenses	Rs. 2,000 per month
Cost of diesel per litre	Rs. 33
Kilometre run per litre for each bus	6 kilometres
Annual depreciation	15% of cost
Annual Insurance	3% of cost

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

(8 Marks)

Answer

(a)		Process I A/c							
	Particulars	Total (Rs.)	Cost (Rs.)	Profit (Rs.)		Particulars	Total (Rs.)	Cost (Rs.)	Profit (Rs.)
To	Opening Balance	1,50,000	1,50,000	-	By	Transfer to Process II A/c	10,80,000	8,10,000	2,70,000
To	Direct Material	3,00,000	3,00,000	-					
To	Direct Wages	2,24,000	2,24,000	-					
		6,74,000	6,74,000	-					
Less:	Closing Stock	74,000	74,000	-					
	Prime Cost	6,00,000	6,00,000	-					
To	Factory Overhead	2,10,000	2,10,000	-					
	Total Cost:	8,10,000	8,10,000	-					
	Profit 25% on transfer price i.e. $33\frac{1}{3}$ on total cost	2,70,000	-	2,70,000					
		10,80,000	8,10,000	2,70,000			10,80,000	8,10,000	2,70,000

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Process II A/c

	Particulars	Total (Rs.)	Cost (Rs.)	Profit (Rs.)		Particulars	Total (Rs.)	Cost (Rs.)	Profit (Rs.)
To	Opening Stock	1,80,000	1,50,000	30,000	By	Transfer to Process II A/c	22,50,000	15,15,000	7,35,000
To	Direct Material	3,15,000	3,15,000	-					
To	Direct Wages	2,25,000	2,25,000	-					
To	Transfer from Process I A/c	10,80,000	8,10,000	2,70,000					
		<u>18,00,000</u>	<u>15,00,000</u>	<u>3,00,000</u>					
	Less: Closing Stock	90,000	75,000	15,000					
	Prime Cost	<u>17,10,000</u>	<u>14,25,000</u>	<u>2,85,000</u>					
To	Factory Overhead	90,000	90,000	-					
	Total Cost:	<u>18,00,000</u>	<u>15,15,000</u>	<u>2,85,000</u>					
	Profit 20% on transfer price i.e. 25% on cost	<u>4,50,000</u>	<u>-</u>	<u>4,50,000</u>					
		<u>22,50,000</u>	<u>15,15,000</u>	<u>7,35,000</u>			<u>22,50,000</u>	<u>15,15,000</u>	<u>7,35,000</u>

$$\text{Working Note – Profit element in closing stock} = \frac{3,00,000}{18,00,000} \times 90,000 = 15,000$$

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Finished Stock A/c

	Particulars	Total (Rs.)	Cost (Rs.)	Profit (Rs.)	Particulars	Total (Rs.)	Cost (Rs.)	Profit (Rs.)
To	Opening Stock	4,50,000	2,85,000	1,65,000	By Sales	28,00,000	16,50,000	11,50,000
To	Transfer from Process-II	22,50,000	15,15,000	7,35,000				
		27,00,000	18,00,000	9,00,000				
Less:	Closing Stock	2,25,000	1,50,000	75,000				
	Total Cost	24,75,000	16,50,000	8,25,000				
	Profit	3,25,000	-	3,25,000				
	(Balancing Figure)							
		28,00,000	16,50,000	11,50,000		28,00,000	16,50,000	11,50,000

Working Note : profit element in closing finished Stock = $\frac{9,00,000}{27,00,000} \times 2,25,000 = 75,000$

Calculation of Profit on Sale

Process	Apparent Profit	Add-unrealised Profit in Opening Stock	Less Unrealised Profit in Closing Stock	Actual Profit
	Rs.	Rs.	Rs.	Rs.
Process – I	2,70,000			2,70,000
Process – II	4,50,000	30,000	15,000	4,65,000
Finished Stock	3,25,000	1,65,000	75,000	4,15,000
				11,50,000

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(b)

**Operating Cost Sheet
for the year 2010- 11**

(Total Passenger Km = 115,20,000)

Particulars	Total Cost (Rs.)	Cost per Passenger- Km (Rs.)
A. Fixed Charges:		
Garage rent (4,000 × 12)	48,000	
Salary of drivers (3,000 × 5 × 12)	1,80,000	
Wages of Conductors (1200 × 5 × 12)	72,000	
Manager's salary (7,500 × 12)	90,000	
Road Tax, Permit fee, etc. (5,000 × 4)	20,000	
Office expenses (2,000 × 12)	24,000	
Insurance $(6,50,000 \times \frac{3}{100} \times 5)$	97,500	
Total A	5,31,500	0.046
B. Variable Charges:		
Repairs and Maintenance (22,500 × 5)	1,12,500	0.010
Depreciation $(6,50,000 \times \frac{15}{100} \times 5)$	4,87,500	0.042
Diesel: $\frac{3,60,000}{6} \times \text{Rs.} 33$	19,80,000	0.172
Total B	25,80,000	0.224
Total Cost (A+B)	31,11,500	0.270
Add: $33 \frac{1}{3}$ per cent Profit on takings or 50% on cost	<u>15,55,750</u>	<u>0.135</u>
Bus fare to be charged from each passenger per km	<u>46,67,250</u>	<u>0.405</u>

Working Notes:

- (i) Total Kilometres to be run during the year 2010-11
= $40 \times 2 \times 3 \times 25 \times 12 \times 5 = 3,60,000$ Kilometres
- (ii) Total passenger Kilometres
= $3,60,000 \times 40 \times \frac{80}{100} = 1,15,20,000$ Passenger km.

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Question 4

Answer of the following:

- (i) *Following informations are available for the year 2008 and 2009 of PIX Limited: (3 Marks)*

Year	2008	2009
Sales	Rs. 32, 00,000	Rs. 57, 00,000
Profit/(Loss)	(Rs. 3,00,000)	Rs. 7, 00,000

Calculate –(a) P/V ratio, (b) Total fixed cost, and (c) Sales required to earn a Profit of Rs. 12,00,000

- (ii) *Explain the treatment of over and under absorption of Overheads in Cost accounting*

(3 Marks)

- (iii) *Which is better plan out of Halsey 50 percent bonus scheme and Rowan bonus scheme for an efficient worker? In which situation the worker get same bonus in both schemes?*

(3 Marks)

Answer

$$\begin{aligned} \text{(i) (a) P/V Ratio} &= \frac{\text{Change in profit}}{\text{Change in sales}} \times 100 \\ &= \frac{7,00,000 + 3,00,000}{(57,00,000 - 32,00,000)} \times 100 \\ &= \frac{10,00,000}{25,00,000} \times 100 \\ &= 40\% \end{aligned}$$

- (b) Total fixed cost = Total contribution - Profit

$$= (\text{Sales} \times \text{P/V ratio}) - \text{Profit}$$

$$= (\text{Rs. } 57,00,000 \times \frac{40}{100}) - \text{Rs. } 7,00,000$$

$$= \text{Rs. } 22,80,000 - \text{Rs. } 7,00,000$$

$$= \text{Rs. } 15,80,000$$

- (c) Contribution required to earn a profit of Rs. 12, 00,000 = Total fixed cost + Profit required

$$= \text{Rs. } 15,80,000 + 12,00,000 = \text{Rs. } 27,80,000$$

$$\text{Required Sales} = \frac{27,80,000}{\text{P/V Ratio}} = \frac{27,80,000}{40\%} = \text{Rs. } 69,50,000$$

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- (ii) Treatment of over and under absorption of overheads are:-
- (i) **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 shall be transferred to costing P&L A/c.
 - (ii) **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.
 - (iii) **Carry Forward to Subsequent Year:** Difference should be carried forward in the expectation that next year the position will be automatically corrected. This would really mean that costing data of two years would be wrong.
- (iii) Rowan Bonus Scheme pays more bonus if the time saved is below the 50 per cent of time allowed and if the time saved is more than 50 percent of time allowed then Halsey bonus scheme pays more bonus. Generally, time saved by a worker is not more than 50 per cent of time allowed. So, the Rowan bonus scheme is better for an efficient worker. When the time saved is equal to 50 per cent of time allowed then both plans pays same bonus to a worker.

Bonus under Halsey Plan

$$= \text{Standard wage rate} \times 50/100 \times \text{Time saved} \quad \dots(i)$$

Bonus under Rowan Plan

$$= \text{Standard wage rate} \times \frac{\text{Time taken}}{\text{Time allowed}} \times \text{Time taken} \quad \dots(ii)$$

Bonus under Halsey Plan will be equal to the

Bonus under Rowan Plan when the following condition holds good

$$= \text{Standard wage rate} \times 50/100 \times \text{Time saved}$$

$$= \text{Standard wage rate} \times \frac{\text{Time taken}}{\text{Time allowed}} \times \text{Time saved}$$

$$\text{or} \quad \frac{1}{2} = \frac{\text{Time taken}}{\text{Time allowed}}$$

$$\text{or} \quad \text{Time taken} = \frac{1}{2} \text{ of time allowed.}$$

Hence, when the time taken is 50% of the time allowed, the bonus under Halsey and Rowan Plans is equal.

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PART II : FINANCIAL MANAGEMENT

Question 5

Answer the following:

- (i) *What do you understand by Capital structure? How does it differ from Financial structure?*
- (ii) *Explain briefly the accounts receivable systems.*
- (iii) *Briefly discuss the concept of seed capital assistance.*
- (iv) *Enumerate the various forms of bank credit in financing working capital of a business organization.*
- (v) *Ascertain the compound value and compound interest of an amount of Rs. 75,000 at 8 percent compounded semiannually for 5 years.* (5 x 2 = 10 Marks)

Answer

(i) **Meaning of Capital Structure and its Differentiation from Financial Structure**

Capital Structure refers to the combination of debt and equity which a company uses to finance its long-term operations. It is the permanent financing of the company representing long-term sources of capital i.e. owner's equity and long-term debts but excludes current liabilities. On the other hand, Financial Structure is the entire left-hand side of the balance sheet which represents all the long-term and short-term sources of capital. Thus, capital structure is only a part of financial structure.

(ii) **Accounts Receivable Systems**

Manual systems of recording the transactions and managing receivables are cumbersome and costly. The automated receivable management systems automatically update all the accounting records affected by a transaction. This system allows the application and tracking of receivables and collections to store important information for an unlimited number of customers and transactions, and accommodate efficient processing of customer payments and adjustments.

(iii) **Concept of Seed Capital Assistance**

It is a scheme designed by IDBI for professionally or technically qualified entrepreneurs and/or persons possessing relevant experience, skills and entrepreneurial traits. All the projects eligible for financial assistance from IDBI, directly or indirectly through refinance, are eligible under the scheme. The assistance is interest-free but carries a service charge of one percent per annum for the first five years and at an increasing rate thereafter. The project cost should not exceed Rs. 2 crores and the maximum assistance under the project will be restricted to 50 percent of the required promoter's contribution or Rs.15 lacs whichever is lower.

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(iv) Forms of Bank Credit

The various forms of bank credit in financing the working capital of a business organisation are:

- (a) Cash credit;
- (b) Bank overdraft;
- (c) Bills discounting;
- (d) Bill acceptance;
- (e) Line of credit;
- (f) Letter of credit; and
- (g) Bank guarantees.

(v) Computation of Compound Value and Compound Interest

Semiannual Rate of Interest (i) = $8/2 = 4\%$

$n = 5 \times 2 = 10$, P = Rs. 75,000

$$\begin{aligned}\text{Compound Value} &= P (1+i)^n \\ &= 75,000 (1+4\%)^{10} \\ &= 75,000 \times 1.4802 \\ &= \text{Rs. 1,11,015}\end{aligned}$$

Compound Interest = Rs. 1,11,015 – Rs. 75,000 = **Rs. 36,015**

Question 6

The following figures and ratios are related to a company:

(i) Sales for the year (all credit)	Rs. 30,00,000
(ii) Gross Profit ratio	25 percent
(iii) Fixed assets turnover (based on cost of goods sold)	1.5
(iv) Stock turnover (based on cost of goods sold)	6
(v) Liquid ratio	1 : 1
(vi) Current ratio	1.5 : 1
(vii) Debtors collection period	2 months
(viii) Reserves and surplus to Share capital	0.6 : 1
(ix) Capital gearing ratio	0.5
(x) Fixed assets to net worth	1.20 : 1

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You are required to prepare:

- (a) Balance Sheet of the company on the basis of above details.
- (b) The statement showing working capital requirement, if the company wants to make a provision for contingencies @ 10 percent of net working capital including such provision.

(11 + 4 = 15 Marks)

Answer

(a) Preparation of Balance Sheet of a Company

Working Notes:

- (i) Cost of Goods Sold = Sales – Gross Profit (= 25% of Sales)
= Rs. 30,00,000 – Rs. 7,50,000
= Rs. 22,50,000
- (ii) Closing Stock = Cost of Goods Sold / Stock Turnover
= Rs. 22,50,000/6
= Rs. 3,75,000
- (iii) Fixed Assets = Cost of Goods Sold / Fixed Assets Turnover
= Rs. 22,50,000/1.5
= Rs. 15,00,000
- (iv) Current Assets : Current Ratio = 1.5 and Liquid Ratio = 1
Stock = 1.5 – 1 = 0.5
Current Assets = Amount of Stock x 1.5/0.5
= Rs. 3,75,000 x 1.5/0.5 = Rs. 11,25,000
- (v) Liquid Assets (Debtors and Cash)
= Current Assets – Stock
= Rs. 11,25,000 – Rs. 3,75,000
= Rs. 7,50,000
- (vi) Debtors = Sales x Debtors Collection period / 12
= Rs. 30,00,000 x 2 / 12
= Rs. 5,00,000
- (vii) Cash = Liquid Assets – Debtors
= Rs. 7,50,000 – Rs. 5,00,000 = Rs. 2,50,000

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- (viii) Net worth = Fixed Assets / 1.2
 = Rs. 15,00,000 / 1.2 = Rs. 12,50,000
- (ix) Reserves and Surplus
 Reserves and Share Capital = 0.6 + 1 = 1.6
 Reserves and Surplus = Rs. 12,50,000 x 0.6 / 1.6
 = Rs. 4,68,750
- (x) Share Capital = Net worth – Reserves and Surplus
 = Rs. 12,50,000 – Rs. 4,68,750
 = Rs. 7,81,250
- (xi) Current Liabilities = Current Assets / Current Ratio
 = Rs. 11,25,000 / 1.5 = Rs. 7,50,000
- (xii) Long-term Debts
 Capital Gearing Ratio = Long-term Debts / Equity Shareholders' Fund
 Long-term Debts = Rs. 12,50,000 x 0.5
 = Rs. 6,25,000

Balance Sheet of a Company

Liabilities	<i>Amount (Rs.)</i>	Assets	<i>Amount (Rs.)</i>
Equity Share Capital	7,81,250	Fixed Assets	15,00,000
Reserves and Surplus	4,68,750	Current Assets	
Long-term Debts	6,25,000	Stock	3,75,000
Current Liabilities	7,50,000	Debtors	5,00,000
		Cash	<u>2,50,000</u>
	<u>26,25,000</u>		<u>26,25,000</u>

(b) Statement Showing Working Capital Requirement

A.	Current Assets		
	Stock	3,75,000	
	Debtors	5,00,000	
	Cash	<u>2,50,000</u>	11,25,000
B.	Current Liabilities		7,50,000
	Working Capital before Provision (A – B)		3,75,000

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Add:	Provision for Contingencies @ 10% of Working Capital including Provision i.e. $\frac{1}{9}$ th of Working Capital before Provision : 3,75,000 x $\frac{1}{9}$		<u>41,667</u>
	Working Capital Requirement including Provision		<u>4,16,667</u>

Question 7

- (a) The management of P Limited is considering selecting a machine out of two mutually exclusive machines. The company's cost of capital is 12 percent and corporate tax rate for the company is 30 percent. Details of the machines are as follows:

	Machine – I	Machine – II
Cost of machine	Rs. 10,00,000	Rs. 15,00,000
Expected life	5 years	6 years
Annual income before tax and depreciation	Rs. 3,45,000	Rs. 4,55,000

Depreciation is to be charged on straight line basis.

You are required to:

- (i) Calculate the discounted pay-back period, net present value and internal rate of return for each machine.
- (ii) Advise the management of P Limited as to which machine they should take up.

The present value factors of Re. 1 are as follows:

Year	1	2	3	4	5	6
At 12%	.893	.797	.712	.636	.567	.507
At 13%	.885	.783	.693	.613	.543	.480
At 14%	.877	.769	.675	.592	.519	.456
At 15%	.870	.756	.658	.572	.497	.432
At 16%	.862	.743	.641	.552	.476	.410

- (b) The following details are forecasted by a company for the purpose of effective utilization and management of cash:
- (i) Estimated sales and manufacturing costs:

Year and month	Sales	Materials	Wages	Overheads
2010	Rs.	Rs.	Rs.	Rs.
April	4,20,000	2,00,000	1,60,000	45,000
May	4,50,000	2,10,000	1,60,000	40,000

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June	5,00,000	2,60,000	1,65,000	38,000
July	4,90,000	2,82,000	1,65,000	37,500
August	5,40,000	2,80,000	1,65,000	60,800
September	6,10,000	3,10,000	1,70,000	52,000

(ii) Credit terms:

- Sales – 20 percent sales are on cash, 50 percent of the credit sales are collected next month and the balance in the following month.
- Credit allowed by suppliers is 2 months.
- Delay in payment of wages is $\frac{1}{2}$ (one-half) month and of overheads is 1 (one) month.

(iii) Interest on 12 percent debentures of Rs. 5,00,000 is to be paid half-yearly in June and December.

(iv) Dividends on investments amounting to Rs. 25,000 are expected to be received in June, 2010.

(v) A new machinery will be installed in June, 2010 at a cost of Rs. 4,00,000 which is payable in 20 monthly instalments from July, 2010 onwards.

(vi) Advance income-tax, to be paid in August, 2010, is Rs. 15,000.

(vii) Cash balance on 1st June, 2010 is expected to be Rs. 45,000 and the company wants to keep it at the end of every month around this figure. The excess cash (in multiple of thousand rupees) is being put in fixed deposit.

You are required to prepare monthly Cash budget on the basis of above information for four months beginning from June, 2010. (9 + 7 = 16 Marks)

Answer

(a) (i) **Computation of Discounted Payback Period, Net Present Value (NPV) and Internal Rate of Return (IRR) for Two Machines**

Calculation of Cash Inflows

	Machine – I (Rs.)	Machine – II (Rs.)
Annual Income before Tax and Depreciation	3,45,000	4,55,000
Less : Depreciation		
Machine – I: 10,00,000 / 5	2,00,000	-
Machine – II: 15,00,000 / 6	-	<u>2,50,000</u>
Income before Tax	1,45,000	2,05,000

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Less: Tax @ 30 %	<u>43,500</u>	<u>61,500</u>
Income after Tax	1,01,500	1,43,500
Add: Depreciation	<u>2,00,000</u>	<u>2,50,000</u>
Annual Cash Inflows	<u>3,01,500</u>	<u>3,93,500</u>

Machine - I					Machine - II		
Year	P.V. of Re.1 @12%	Cash flow	P.V.	Cumulative P.V	Cash flow	P.V.	Cumulative P.V.
1	0.893	3,01,500	2,69,240	2,69,240	3,93,500	3,51,396	3,51,396
2	0.797	3,01,500	2,40,296	5,09,536	3,93,500	3,13,620	6,65,016
3	0.712	3,01,500	2,14,668	7,24,204	3,93,500	2,80,172	9,45,188
4	0.636	3,01,500	1,91,754	9,15,958	3,93,500	2,50,266	11,95,454
5	0.567	3,01,500	1,70,951	10,86,909	3,93,500	2,23,115	14,18,569
6	0.507	-	-	-	3,93,500	1,99,505	16,18,074

Discounted Payback Period for:

Machine - I

$$\begin{aligned}
 \text{Discounted Payback Period} &= 4 + \frac{(10,00,000 - 9,15,958)}{1,70,951} \\
 &= 4 + \frac{84,042}{1,70,951} \\
 &= 4 + 0.4916 \\
 &= \mathbf{4.49 \text{ years or 4 years and 5.9 months}}
 \end{aligned}$$

Machine - II

$$\begin{aligned}
 \text{Discounted Payback Period} &= 5 + \frac{(15,00,000 - 14,18,569)}{1,99,505} \\
 &= 5 + \frac{81,431}{1,99,505} \\
 &= 5 + 0.4082 \\
 &= \mathbf{5.41 \text{ years or 5 years and 4.9 months}}
 \end{aligned}$$

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Net Present Value for:

Machine - I

$$\begin{aligned}\text{NPV} &= \text{Rs. } 10,86,909 - 10,00,000 \\ &= \text{Rs. } 86,909\end{aligned}$$

Machine - II

$$\begin{aligned}\text{NPV} &= \text{Rs. } 16,18,074 - 15,00,000 \\ &= \text{Rs. } 1,18,074\end{aligned}$$

Internal Rate of Return (IRR) for:

Machine – I

$$\text{P.V. Factor} = \frac{\text{Initial Investment}}{\text{Annual Cash Inflow}} = \frac{10,00,000}{3,01,500} = 3.3167$$

PV factor falls between 15% and 16%

Present Value of Cash inflow at 15% and 16% will be:

$$\text{Present Value at 15\%} = 3.353 \times 3,01,500 = 10,10,930$$

$$\text{Present Value at 16\%} = 3.274 \times 3,01,500 = 9,87,111$$

$$\text{IRR} = 15 + \frac{10,10,930 - 10,00,000}{10,10,930 - 9,87,111} \times (16 - 15)$$

$$= 15 + \frac{10,930}{23,819} \times 1$$

$$= 15.4588\% = \mathbf{15.46\%}$$

Machine - II

$$\text{P.V. Factor} = \frac{15,00,000}{3,93,500} = 3.8119$$

Present Value of Cash inflow at 14% and 15% will be:

$$\text{Present Value at 14\%} = 3.888 \times 3,93,500 = 15,29,928$$

$$\text{Present Value at 15\%} = 3.785 \times 3,93,500 = 14,89,398$$

$$\text{IRR} = 14 + \frac{15,29,928 - 15,00,000}{15,29,928 - 14,89,398} \times (15 - 14)$$

$$= 14 + \frac{29,928}{40,530} \times 1$$

$$= 14.7384 \% = \mathbf{14.74\%}$$

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(ii) Advise to the Management

Ranking of Machines in terms of the Three Methods

	Machine - I	Machine - II
Discounted Payback Period	I	II
Net Present Value	II	I
Internal Rate of Return	I	II

Advise: Since Machine – I has better ranking than Machine – II, therefore, Machine – I should be selected.

(b) Preparation of Monthly Cash Budget

Cash Budget for four months from June, 2010 to September, 2010

<i>Particulars</i>	<i>June (Rs.)</i>	<i>July (Rs.)</i>	<i>August (Rs.)</i>	<i>September (Rs.)</i>
Opening Balance	45,000	45,500	45,500	45,000
Receipts:				
Cash Sales	1,00,000	98,000	1,08,000	1,22,000
Collection from debtors	3,48,000	3,80,000	3,96,000	4,12,000
Dividends	<u>25,000</u>	<u>-</u>	<u>-</u>	<u>-</u>
Total (A)	<u>5,18,000</u>	<u>5,23,500</u>	<u>5,49,500</u>	<u>5,79,000</u>
Payments:				
Creditors for Materials	2,00,000	2,10,000	2,60,000	2,82,000
Wages	1,62,500	1,65,000	1,65,000	1,67,500
Overheads	40,000	38,000	37,500	60,800
Installment for Machine	-	20,000	20,000	20,000
Interest on Debentures	30,000	-	-	-
Advance Tax	<u>-</u>	<u>-</u>	<u>15,000</u>	<u>-</u>
Total (B)	<u>4,32,500</u>	<u>4,33,000</u>	<u>4,97,500</u>	<u>5,30,300</u>
Surplus (A – B)	85,500	90,500	52,000	48,700
Fixed Deposits	<u>40,000</u>	<u>45,000</u>	<u>7,000</u>	<u>3,000</u>
Closing Balance	<u>45,500</u>	<u>45,500</u>	<u>45,000</u>	<u>45,700</u>

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Working Notes:

(1) Cash Sales and Collection from Debtors:

Month	Total Sales (Rs.)	Cash Sales (Rs.)	Credit Sales (Rs.)	Collection from Debtors			
				June (Rs.)	July (Rs.)	Aug. (Rs.)	Sept. (Rs.)
April, 2010	4,20,000	84,000	3,36,000	1,68,000	-	-	-
May, 2010	4,50,000	90,000	3,60,000	1,80,000	1,80,000	-	-
June, 2010	5,00,000	1,00,000	4,00,000	-	2,00,000	2,00,000	-
July, 2010	4,90,000	98,000	3,92,000	-	-	1,96,000	1,96,000
Aug., 2010	5,40,000	1,08,000	4,32,000	-	-	-	2,16,000
Sept., 2010	6,10,000	1,22,000	4,88,000	-	-	-	-
			Total	<u>3,48,000</u>	<u>3,80,000</u>	<u>3,96,000</u>	<u>4,12,000</u>

(2) Payment of Wages

June = 80,000 + 82,500 = 1,62,500;

July = 82,500 + 82,500 = 1,65,000;

Aug. = 82,500 + 82,500 = 1,65,000; and

Sept. = 82,500 + 85,000 = 1,67,500.

(Note: It has been assumed that the company wants to keep minimum cash balance of Rs. 45,000 at the end of every month.)

Question 8

Answer the following:

- (i) *SK Limited has obtained funds from the following sources, the specific cost are also given against them:*

Source of funds	Amount (Rs.)	Cost of Capital
Equity shares	30,00,000	15 percent
Preference shares	8,00,000	8 percent
Retained earnings	12,00,000	11 percent
Debentures	10,00,000	9 percent (before tax)

You are required to calculate weighted average cost of capital. Assume that Corporate tax rate is 30 percent.

- (ii) *State the role of a Chief Financial Officer.*

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(iii) Distinguish between Funds Flow Statement and Cash Flow Statement. (3 × 3 = 9 Marks)

Answer

(i) **Calculation of Weighted Average Cost of Capital (WACC)**

Sources of Funds	Amount (Rs.)	Weight	Cost of Capital (after tax) %	WACC %
Equity Shares	30,00,000	0.500	15	7.50
Preference Shares	8,00,000	0.133	8	1.06
Retained Earnings	12,00,000	0.200	11	2.20
Debentures	10,00,000	0.167	6.3*	1.05
Total	60,00,000			11.81%

$$\begin{aligned}\text{*Cost of Debentures (Kd) (after tax)} &= \text{Kd (before tax)} \times (1 - T) \\ &= 9\% (1 - 0.3) = 6.3\%\end{aligned}$$

$$\text{Weighted Average Cost of Capital} = 11.81\%$$

(ii) **Role of a Chief Financial Officer (CFO)**

The chief financial officer of an organisation plays an important role in the company's goals, policies and financial success. His responsibilities include:

- (a) **Financial Analysis and Planning:** Determining the proper amount of funds to employ in the firm.
- (b) **Investment Decisions:** The efficient allocation of funds to specific assets.
- (c) **Financing and Capital Structure Decisions:** Raising funds on favourable terms as possible.
- (d) Management of Financial Resources such as working capital.
- (e) **Risk Management:** Protecting assets.

(iii) **Differentiation between Funds Flow Statement and Cash Flow Statement**

- (a) Funds flow statement is based on the accrual accounting system. In case of preparation of cash flow statement all transactions affecting the cash equivalents only are taken into consideration.
- (b) Funds flow statement analyses the sources and applications of funds which are long-term in nature and the net increase in long-term funds will be reflected on the working capital of the firm. The Cash flow statement will only consider the increase or decrease in current assets and current liabilities in calculating the cash flow of funds from operations.

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- (c) Funds flow analysis is more useful for long-range financial planning. Cash flow analysis is more useful for identifying and correcting the current liquidity problems of the firm.
- (d) Funds flow statement tallies the funds generated from various sources with various uses to which they are put. Cash flow statement tallies difference between opening balance of cash and closing balance of cash by proceeding through sources and uses.