

Sreeram Coaching Point
PCC
Costing and Financial Management Nov. 2008

Roll No.....

Total No. of Questions—8]

[Total No. of Printed Pages—16

Time Allowed—3 Hours

Maximum Marks—100

URN

Answers to questions are to be given only in English except in the case of candidates who have opted for Hindi medium. If a candidate who has not opted for Hindi medium, answers in Hindi, his answers in Hindi will not be valued.

All question are compulsory.

Working notes should form part of the answer.

Marks

1. Answer any five of the following :

5×2=10

(i) The annual carrying cost of material 'X' is Rs. 3.6 per unit and its total carrying cost is Rs. 9,000 per annum. What would be the Economic order quantity for material 'X', if there is no safety stock of material X ?

(ii) A machinery was purchased from a manufacturer who claimed that his machine could produce 36.5 tonnes in a year consisting of 365 days. Holidays, break-down, etc., were normally allowed in the factory for 65 days. Sales were expected to be 25 tonnes during the year and the plant actually produced 25.2 tonnes during the year. You are required to state the following figures :

- (a) rated capacity
- (b) practical capacity
- (c) normal capacity
- (d) actual capacity

(iii) State the unit of cost for the following industries

- (a) Transport
- (b) Power
- (c) Hotel
- (d) Hospital

(iv) State the method of costing that would be most suitable for

- (a) Oil refinery
- (b) Bicycle manufacturing
- (c) Interior decoration
- (d) Airlines company

(v) Differentiate between "scrap" and "defectives" and how they are treated in cost accounting.

(vi) Explain briefly the concept of 'flexible budget'.

Solution to Question No. 1

1. i

$$\begin{aligned}\text{Carrying Cost p.u.} &= \text{Rs. 3.60} \\ \text{Total carrying Cost} &= \frac{1}{2} \times \text{EOQ} \times \text{Carrying Cost P.u.}\end{aligned}$$

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9000	=	$1/2 \times \text{EOQ} \times 3.6$
EOQ	=	$9000 \times 2/3.6$
	=	5000
Economic Order Quantity	=	5000 units

1. ii

a. Rated Capacity	=	36.5 Tonnes
b. Practical Capacity	=	30 Tonnes (36.5 x (300/365))
c. Normal Capacity	=	25 tonnes
d. Actual Capacity	=	25.2 tonnes

1. iii

a) Transport	=	Passenger km., quintal km., or tonne km.
b) Power	=	Kilo Watt Hour
c) Hotel	=	Rooms per day, meals per day, Meals per customer etc.
d) Hospital	=	Patient per day, room per day or per bed, per operation etc.

1. iv

a. Oil Refinery	=	Process Costing
b. Bicycle Manufacturing	=	Batch Costing/ Operating costing
c. Interior Decoration	=	Job Costing
d. Airlines Company	=	Operating Costing

1. v

Scrap - It is the incidental residue from certain types of manufacture, usually of small amount and low value, recoverable without further processing.

Scrap may be treated in the following ways:-

- i. Where the value of scrap is negligible, it may be excluded from costs.
- ii. The sales value of scrap net of selling and distribution cost, is deducted from overhead to reduce the overhead rate.
- iii. When scrap is identifiable with a particular job or process and its value is significant, the scrap account should be charged with full cost. The credit is given to the job or process concerned. The profit or loss in the scrap account, on realisation, will be transferred to the Costing Profit and Loss Account.

Defectives - It signifies those units or portions of production which can be rectified and turned out as good units by the application of additional material, labour or other service.

Defectives are generally treated in two ways

(i) Defectives that are considered inherent in the process and are identified as normal can be recovered by using the following methods:

- (a) Charged to good products - The loss is absorbed by good units. This method is used when 'seconds' have a normal value and defectives rectified into 'seconds' or 'first' are normal;
- (b) Charged to general overheads - When the defectives caused in one department are reflected only on further processing, the rework costs are charged to general overheads;
- (c) Charged to the department overheads - If the department responsible for defectives can be identified then the rectification costs should be charged to that department;
- (d) Charged to Costing Profit and Loss Account - If defectives are abnormal and are due to causes beyond the control of organization, the rework cost should be charged to Costing Profit and Loss Accounts.

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(ii) Where defectives are easily identifiable with specific jobs, the work costs are debited to the job.

Distinction between scrap and defectives:

1. Scrap arises as incidental residue from certain types of manufacture. i.e, it is inherent in the job and is not resulting from bad workmanship, inadequate materials, sub standard materials etc. Defectives arise due to sub-standard materials, bad-supervision, bad-planning, poor workmanship, inadequate-equipment and careless inspection. They are not inherent in a job.
2. Scrap cannot be converted into good units. Defectives can be rectified and turned out into good units by repairs and reworks.

5. vi

Flexible budget - Flexible budgets show the expected results of a responsibility center for several activity levels. It is a series of static budgets for different levels of activity. Such budgets are especially useful in estimating and controlling factory costs and operating expenses. It is more realistic and practicable because it gives due consideration to cost behaviour at different levels of activity. While preparing a flexible budget the expenses are classified into three categories viz.

- (i) Fixed,
- (ii) Variable, and
- (iii) Semi-variable.

Flexible budgeting may be resorted to under following situations:

- (i) In the case of new business venture due to its typical nature it may be difficult to forecast the demand of a product accurately.
- (ii) Where the business is dependent upon the mercy of nature e.g., a person dealing in wool trade may have enough market if temperature goes below the freezing point.
- (iii) In the case of labour intensive industry where the production of the concern is dependent upon the availability of labour.

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2. As of 31st March, 2008, the following balances existed in a firm's cost ledger, which is maintained separately on a double entry basis : 15

	Debit Rs.	Credit Rs.
Stores Ledger Control A/c	3,00,000	—
Work-in-progress Control A/c	1,50,000	—
Finished Goods Control A/c	2,50,000	—
Manufacturing Overhead Control A/c		15,000
Cost Ledger Control A/c		6,85,000
	7,00,000	7,00,000

During the next quarter, the following items arose :

	Rs.
Finished Product (at cost)	2,25,000
Manufacturing overhead incurred	85,000
Raw material purchased	1,25,000
Factory wages	40,000
Indirect labour	20,000
Cost of sales	1,75,000
Materials issued to production	1,35,000
Sales returned (at cost)	9,000
Materials returned to suppliers	13,000
Manufacturing overhead charged to production	85,000

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.

Solution to Question No. 2

Cost Ledger Control A/c			
To Stores Ledger control A/c	13000	By Balance B/d	685000
To Balance C/d (Balancing figure)	942000	By Manufacturing Overhead Control A/c	85000
		By Stores Ledger control A/c	125000
		By Wages Control A/c	60000
	955000		955000

Stores Ledger control A/c			
To balance B/d	300000	By Cost Ledger Control A/c	13000
To Cost Ledger Control A/c	125000	By Work In Progress Control A/c	135000
		By Balance C/d (Balancing figure)	277000
	425000		425000

Work In Progress Control A/c			
To balance B/d	150000	By Finished Stock Ledger Control A/c	225000
To Wages Control A/c	40000	By Balance C/d (Balancing figure)	185000
To Stores Ledger control A/c	135000		
To Manufacturing Overhead Control A/c	85000		
	410000		410000

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Finished Stock Ledger Control A/c			
To balance B/d	250000	By Cost of Sales A/c	175000
To Work In Progress Control A/c	225000	By Balance C/d (Balancing figure)	309000
To Cost of Sales A/c	9000		
	484000		484000

Manufacturing Overhead Control A/c			
To Cost Ledger Control A/c	85000	By balance B/d	15000
To Wages Control A/c	20000	By Work In Progress Control A/c	85000
		By Balance C/d (Balancing figure)	5000
	105000		105000

Wages Control A/c			
To Cost Ledger Control A/c	60000	By Work In Progress Control A/c	40000
		By Manufacturing Overhead Control A/c	20000
	60000		60000

Cost of Sales A/c			
To Finished Stock Ledger Control A/c	175000	By Finished Stock Ledger Control A/c	9000
		By Balance C/d (Balancing figure)	166000
	175000		175000

Trial Balance as on 31.03.2008		
Particulars	Debit	Credit
Cost Ledger Control A/c		942000
Stores Ledger control A/c	277000	
Work In Progress Control A/c	185000	
Finished Stock Ledger Control A/c	309000	
Manufacturing Overhead Control A/c	5000	
Cost of Sales A/c	166000	
	942000	942000

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3. (a) ABC Ltd. can produce 4,00,000 units of a product per annum at 100% capacity. The variable production costs are Rs. 40 per unit and the variable selling expenses are Rs. 12 per sold unit. The budgeted fixed production expenses were Rs. 24,00,000 per annum and the fixed selling expenses were Rs. 16,00,000. During the year ended 31st March, 2008, the company worked at 80% of its capacity. The operating data for the year are as follows : 7
- Production 3,20,000 units
 Sales @ Rs. 80 per unit 3,10,000 units
 Opening stock of finished goods 40,000 units
- Fixed production expenses are absorbed on the basis of capacity and fixed selling expenses are recovered on the basis of period.
- You are required to prepare Statements of Cost and Profit for the year ending 31st March, 2008 :
- (i) On the basis of marginal costing
 (ii) On the basis of absorption costing.
- (b) Describe briefly, how wages may be calculated under the following systems : 9
- (i) Gantt task and bonus system
 (ii) Emerson's efficiency system
 (iii) Rowan system
 (iv) Halsey system
 (v) Barth system.

Solution to Question No. 3

3. a

Statement of Profit or Loss							
(a) Marginal costing system				(b) Absorption costing system			
Sales	310000	80	24800000	Sales	310000	80	24800000
Variable production cost of sold units							
Opening stock	40000	40	1600000	Production cost			
Variable Production cost	320000	40	12800000	Variable Production cost	320000	40	12800000
Less: Closing stock	50000	40	(200000)	Fixed Production cost	320000	6	1920000
			12400000	Opening stock	40000	46	1840000
Variable selling expenses	310000	12	3720000	Less: Closing stock	50000	46	(2300000)
				Cost of production attributable to sales		I	14260000
All variable costs			16120000				
				Selling and distribution expenses		II	
Contribution			8680000	Variable	310000	12	3720000
				Fixed			1600000
							5320000
Fixed costs							
Production	2400000						
Selling	1600000		4000000	Total cost of sale	(I+II)		19580000
				Profit			5220000
				Unabsorbed Fixed production Overhead	2400000-1920000		480000
Profit			4680000	Net Profit			4740000

	Marginal Costing	Absorption Costing	
Cost of opening & Closing Stock p.u.	40	46	

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(Cost Excluding Fixed Costs) (Cost Including Fixed Costs (40+6))

Fixed Cost under Absorption Costing = $(2,400,000 / 400,000) \times 320,000 = 1,920,000$

The difference in the profit of Rs.60000 is on account of change in the stock [difference between opening stock and closing stock] bearing with Fixed Production Overheads per unit.

i.e., $[50000-40000] \times 6 = 60000 = (4740000-4680000)$

3. b

i. Gantt task and bonus system: This system is a combination of time and piece work system. According to this system a high standard or task is set and payment is made at time rate to a worker for production below the set standard. If the standards are achieved or exceeded, the payment to the concerned worker is made at a higher piece rate. The piece rate fixed under this system also includes an element of bonus the extent of 20%. The figure of bonus to such workers is calculated over the time rate of the workers. Thus in its essence, the system consists of paying a worker on time basis if he does not attain the standard and on piece basis if he does.

Wages payable to workers under this plan are calculated as under:

Output	Payment
(i) Output below standard	Guaranteed time rate.
(ii) Output at standard	Time rate plus bonus of 20% of time rate.
(iii) Output above standard	High piece rate on worker's whole output. It is so fixed, so as to include a bonus of 20% of the time rate.

- ii. Emerson's efficiency system: Under this system minimum time wages are guaranteed. But beyond a certain efficiency level, bonus in addition to minimum day wages is given. A worker who is able to attain efficiency, measured by his output equal to 2/3rd of the standard efficiency, or above, is deemed to be an efficient worker deserving encouragement. The scheme thus provides for payment of bonus at a rising scale at various levels of efficiency, ranging from 66.67% to 150%. For a performance below 66.67% only time rate wages without any bonus are paid. Above 66.67% to 100% efficiency, bonus varies between 0.01% and 20%. Above 100% efficiency bonus of 20% of basic wages plus 1% for each 1% increase in efficiency is admissible.
- iii. Rowan system: According to this system a standard time allowance is fixed for the performance of a job and bonus is paid if time is saved. Under Rowan System the bonus is that proportion of the time wages as time saved bears to the standard time.

$\text{Wages} = \text{Time taken} \times \text{Rate per hour} + (\text{Time Saved} / \text{Time allowed}) \times \text{Time taken} \times \text{Rate per hour}$

- iv. Halsey system: Under Halsey system a standard time is fixed for each job or process. If there is no saving on this standard time allowance, the worker is paid only his day rate. He gets his time rate even if he exceeds the standard time limit, since his day rate is guaranteed. If, however, he does the job in less than the standard time, he gets a bonus equal to 50 percent of the wages of time saved; the employer benefits by the other 50 percent. The scheme also is sometimes referred to as the Halsey fifty percent plan.

$\text{Wages} = \text{Time taken} \times \text{Time rate} + 50\% \text{ of time saved} \times \text{Time rate.}$

- v. Barth system: The formula used for calculating the remuneration under this system is as follows:

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

The system is particularly suitable for trainees and beginners and also for unskilled workers. The reason is that for low production efficiency, the earnings are higher than in the piece-work system but

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as the efficiency increases, the rate of increase in the earnings falls.

4. Answer any **three** of the following :

3×3=9

- (i) A product passes from Process I and Process II. Materials issued to Process I amounted to Rs. 40,000, Labour Rs. 30,000 and manufacturing overheads were Rs. 27,000. Normal loss was 3% of input as estimated. But 500 more units of output of Process I were lost due to the carelessness of workers. Only 4,350 units of output were transferred to Process II. There were no opening stocks. Input raw material issued to Process I were 5,000 units. You are required to show Process I account.

- (ii) PQ Ltd. reports the following cost structure at two capacity levels :

(100% capacity)

	<u>2,000 units</u>	<u>1,500 units</u>
Production overhead I	Rs. 3 per unit	Rs. 4 per unit
Production overhead II	Rs. 2 per unit	Rs. 2 per unit

If the selling price, reduced by direct material and labour is Rs. 8 per unit, what would be its break-even point ?

- (iii) A contract expected to be completed in year 4, exhibits the following information :

End of Year	Value of work certified (Rs.)	Cost of work to date (Rs.)	Cost of work not yet certified (Rs.)	Cash received (Rs.)
1.	0	50,000	50,000	0
2.	3,00,000	2,30,000	10,000	2,75,000
3.	8,00,000	6,60,000	20,000	7,50,000

The contract price is Rs. 10,00,000 and the estimated profit is 20%.

You are required to calculate, how much profit should have been credited to the Profit and Loss A/c by the end of years 1, 2 and 3.

- (iv) UV Ltd. presents the following information for November, 2008 :

Budgeted production of product P = 200 units.

Standard consumption of Raw materials = 2 kg per unit of P.

Standard price of material A = Rs. 6 per kg.

Actually, 250 units of P were produced and material A was purchased at Rs. 8 per kg and consumed at 1.8 kg per unit of P. Calculate the material cost variances.

Solution to Question No. 4

4. i.

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Dr			Cr		
Process I A/c					
Particulars	Units	Rs	Particulars	Units	Rs
To Materials	5000	40000	By Normal Loss A/c	150	0
To Labour		30000	By Abnormal Loss A/c	500	10000
To Overheads		27000	By Process II A/c	4350	87000
	5000	97000		5000	97000

$$\begin{aligned}
 \text{Normal Loss Units} &= 5000 \times 3\% = 150 \\
 \text{Cost per Unit} &= \frac{\text{Total Cost} - \text{Normal Loss Scrap}}{\text{Total Input Units} - \text{Normal Loss Units}} \\
 &= \frac{97000 - 0}{5000 - 150} = 20 \\
 \text{Abnormal Loss} &= 500 \times 20 = 10000
 \end{aligned}$$

Note: Since no scrap value is given in the problem for normal loss, scrap value is taken as nil.

4. ii.

Working Notes:

a.					
100% Capacity (2000 Units)			75% Capacity (1500 Units)		
	Rate	Amount		Rate	Amount
Production Overheads I	3	6000		4	6000
Production Overheads II	2	<u>4000</u>		2	<u>3000</u>
		<u>10000</u>			<u>9000</u>
Change in Overheads	=	10000-9000	=	1000	
Change in Units	=	2000-1500	=	500	
Variable Overheads p.u.	=	1000 / 500	=	Rs 2	

b.		2000 Units		1500 Units	
	Rate	Amount		Rate	Amount
Variable Overheads	2	4000		2	3000
Total Overheads		<u>10000</u>			<u>9000</u>
Fixed Overheads		<u>6000</u> (10000-4000)			<u>6000</u> (9000-3000)

c.		Rs
Selling Price – (Materials + Labour)		8
Variable Overheads p.u.		<u>2</u>
Contribution p.u.		<u>6</u> (8-2)

$$\text{Break Even Point (Units)} = \text{Fixed Costs} / \text{Contribution} = 6000 / 6 = \underline{\underline{1000 \text{ Units}}}$$

4. iii.

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Contract A/c				
Ist Year	To Cost of work during the year	50000	By WIP C/d Work certified Work Uncertified	0 50000 50000
		50000		50000
IIInd year	To WIP B/d Work certified Work Uncertified To Cost of work during the year (Cost to date - Cum cost of PY) To Profit & loss A/c (Bal. Fig.)	0 50000 180000 80000	By WIP C/d Work certified Work Uncertified	300000 10000
		310000		310000
IIIrd Year	To WIP B/d Work certified Work Uncertified To Cost of work during the year (Cost to date - Cum cost of PY) To Notional Profit C/d (Bal. Fig.)	300000 10000 430000 80000	By WIP C/d Work certified Work Uncertified	800000 20000
		820000		820000
	To Profit & Loss A/c To WIP B/d (Bal. Fig.) (Profit In Reserve)	50000 30000	By Notional Profit B/d	80000
		80000		80000

At the end of the 3rd year the contract is less than 90% complete. Hence

$$\begin{aligned} \text{Transfer to Profit \& Loss A/c} &= \frac{2}{3} \times \text{Notional profit} \times (\text{Cash received/ work certified}) \\ &= \frac{2}{3} \times 80000 \times (750000/800000) = \mathbf{50000} \end{aligned}$$

In the Ist year no profit is transferred to Profit & loss a/c as no part of work is certified.

In the IIInd year Loss of Rs 80000 is transferred to Profit & loss a/c.

In the IIIrd year Profit of Rs 50000 is transferred to Profit & loss A/c and Rs 30000 is retained in the Work In Progress A/c as Reserve Profit.

4. iv.		
I	II	III
Standard cost	Actual cost	Expected cost for Actual Quantity
Std. qty × Std. price	Actual qty. × Actual price	Actual qty. × standard price
250x2x6	250x1.8x8	250x1.8x6
3000	3600	2700

Material Price Variance (I-II)	-600 (Adverse)
Material Usage variance (II-III)	900 (Favourable)
Material Cost variance (I-III)	300 (Favourable)

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5. Answer any **five** of the following :

5×2=10

- (i) Write a short note on "Deep Discount Bonds".
- (ii) What is meant by 'Venture Capital Financing' ?
- (iii) Discuss the concept of "Optimal Capital Structure."
- (iv) Name the various financial instruments dealt with in the international market.
- (v) How is return on capital employed calculated ? What is its significance ?
- (vi) What is quick ratio ? What does it signify ?

Solution to Question No. 5

5. i.

Deep Discount Bonds: 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 bond of a face value of Rs. 1 lakh was sold for Rs. 2,700 with a maturity period of 25 years. The investor could hold the bond for 25 years or seek redemption at the end of every five years with a specified maturity value as shown below.

Holding Period (years)	Maturity value (Rs.)	Annual rate of interest (%)
5	5,700	16.12
10	12,000	16.09
15	25,000	15.99
20	50,000	15.71
25	1,00,000	15.54

The investor can sell the bonds in stock market and realize the difference between face value (Rs. 2,700) and market price as capital gain."

5. ii.

Venture Capital Financing: The venture capital financing refers to financing of new high risky venture promoted by qualified entrepreneurs who lack experience and funds to give shape to their ideas. In broad sense, under venture capital financing venture capitalist make investment to purchase equity or debt securities from inexperienced entrepreneurs who undertake highly risky ventures with a potential of success. The following are the different ways of Venture capital financing.

- i. Equity Financing
- ii. Conditional Loan
- iii. Income Note
- iv. Participating Debentures

5. iii.

Optimal Capital Structure: The theory of optimal capital structure deals with the issue of the right mix of debt and equity in the long term capital structure of a firm. It states that if a company takes on debt, the value of the firm increases up to a point. Beyond that point if debt continues to increase then the value of the firm will start to decrease. Similarly if the company is unable to repay the debt within the specified period then it will affect the goodwill of the company in the market and may create problems for collecting further debt. Therefore, the company should select its appropriate capital structure with due consideration to the factors mentioned above.

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5. iv.

Some of the various financial instruments dealt with in the international market are as follows:

- (a) External Commercial Borrowings (ECB)
- (b) Euro Bonds
- (c) Foreign Bonds
- (d) Fully Hedged Bonds
- (e) Medium Term Notes
- (f) Floating Rate Notes
- (g) Euro Commercial Papers (ECP)
- (h) Foreign Currency Option
- (i) Foreign Currency Futures

5. v.

Return on capital Employed: It is the percentage of return on funds invested in the business by its owners. In short, this ratio tells the owner whether or not all the effort put into the business has been worthwhile. The ROCE is calculated as follows:

$$\text{ROCE} = \frac{\text{Return}}{\text{Capital Employed}} \times 100$$

Where,

$$\begin{aligned} \text{Return} &= \begin{aligned} &\text{Net Profit} \\ &\pm \text{Non-trading adjustments} \\ &\text{(But not accrual adjustments for amortization of preliminary expenses, goodwill, etc.)} \\ &+ \text{Interest on long term debts} + \text{Provision for tax} \\ &- \text{Interest/Dividend from non-trade investments} \end{aligned} \end{aligned}$$

$$\begin{aligned} \text{Capital Employed} &= \begin{aligned} &\text{Equity Share Capital} \\ &+ \text{Reserve and Surplus} \\ &+ \text{Pref. Share Capital} \\ &+ \text{Debentures and other long term loan} \\ &- \text{Misc. expenditure and losses} \\ &- \text{Non-trade Investments.} \end{aligned} \end{aligned}$$

Intangible assets (assets which have no physical existence like goodwill, patents and trade marks) should be included in the capital employed. But no fictitious asset should be included within capital employed.

5. vi.

Quick Ratios: The Quick Ratio is sometimes called the "acid-test" ratio and is one of the best measures of liquidity.

Quick Ratio or Acid Test Ratio = Quick Assets/ Quick Liabilities

Where,

$$\begin{aligned} \text{Quick Assets} &= \text{Current Assets} - \text{Inventories} \\ \text{Quick Liabilities} &= \text{Current Liabilities} - \text{Bank Overdraft} - \text{Cash Credit} \end{aligned}$$

It helps answer the question: "If all sales revenues should disappear, could my business meet its current obligations with the readily convertible 'quick' funds on hand? An acid-test of 1:1 is considered satisfactory unless the majority of "quick assets" are in accounts receivable, and the pattern of accounts receivable collection lags behind the schedule for paying current liabilities.

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6. Balance Sheets of a company as on 31st March, 2007 and 2008 were as follows : 15

Liabilities	31.3.07 Rs.	31.3.08 Rs.	Assets	31.3.07 Rs.	31.3.08 Rs.
Equity Share Capital	10,00,000	10,00,000	Goodwill	1,00,000	80,000
8% P.S. Capital	2,00,000	3,00,000	Land and		
General Reserve	1,20,000	1,45,000	Building	7,00,000	6,50,000
Securities Premium	—	25,000	Plant and		
Profit & Loss A/c	2,10,000	3,00,000	Machinery	6,00,000	6,60,000 ✓
11% Debentures	5,00,000	3,00,000	Investments		
Creditors	1,85,000	2,15,000	(non-trading)	2,40,000	2,20,000 ✓
Provision for tax	80,000	1,05,000	Stock	4,00,000	3,85,000
Proposed Dividend	1,36,000	1,44,000	Debtors	2,88,000	4,15,000
			Cash and Bank	88,000	93,000
			Prepaid Expenses	15,000	11,000
			Premium on Redemption of Debentures	—	20,000
	<u>24,31,000</u>	<u>25,34,000</u>		<u>24,31,000</u>	<u>25,34,000</u>

Additional Information :

- Investments were sold during the year at a profit of Rs. 15,000.
- During the year an old machine costing Rs. 80,000 was sold for Rs. 36,000. Its written down value was Rs. 45,000.
- Depreciation charged on Plants and Machinery @ 20 percent on the opening balance.
- There was no purchase or sale of Land and Building.
- Provision for tax made during the year was Rs. 96,000.
- Preference shares were issued for consideration of cash during the year.

You are required to prepare :

- Cash flow statement as per AS-3.
- Schedule of changes in Working capital.

Solution to Question No:6

Cash flow from operating activities	
Increase in P & L account	90000
Proposed dividend	144000
Add: Amortization of	
Goodwill	20000
Land and Building	50000
Plant and machinery	120000
	190000
Appropriation to GR	25000
Debenture interest	33000

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Profit on sale of investments	-15000
Loss on sale of machinery	9000
Tax provision	96000
Tax payment	-71000

405000

Decrease in stock	15000
Increase in Debtors	-127000
Decrease in prepaid expenses	4000
Increase in Creditors	30000

Cash flow from operating activities 423000

Cash flow from investing activities

Sale of plant and machinery	36000
Purchase of machinery	-225000
Sale of Investments	35000

-154000

Cash flow from financing activities

Preference Share Capital	100000
Sec premium	25000
Red of debentures	-200000
Premium on redemption of debentures	-20000
Payment of dividend	-136000
Payment of interest	-33000

-264000

Net increase in cash and cash equivalents 5000

423000-154000-264000

Opening cash and equivalents 88000

Closing cash and equivalents 93000

Machinery

Closing	660000
Sold item	45000
Depn	120000
Opening	-600000
Purchases	225000

Tax

Opening provision	80000
Current year	96000
Closing provision	105000
Payment of tax	71000

Schedule of changes in working capital		
	31.3.07	31.3.08
Stock	400000	385000
Drs	288000	415000
Cash	88000	93000
Prepaid expenses	15000	11000
	791000	904000
Creditors	185000	215000
Working capital	606000	689000
Change in working capital		83000

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7. (a) MN Ltd. is commencing a new project for manufacture of electric toys. The following cost information has been ascertained for annual production of 60,000 units at full capacity :

		Amount per unit
		Rs.
Raw materials		20
Direct labour		15
Manufacturing overheads :		
	Rs.	
Variable	15	
Fixed	10	25
Selling and Distribution overheads :		
	Rs.	
Variable	3	
Fixed	1	4
Total cost		64
Profit		16
Selling price		80

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In the first year of operations expected production and sales are 40,000 units and 35,000 units respectively. To assess the need of Working capital, the following additional information is available :

- (i) Stock of Raw materials 3 months consumption.
- (ii) Credit allowable for debtors $1\frac{1}{2}$ months.
- (iii) Credit allowable by creditors 4 months.
- (iv) Lag in payment of wages 1 month.
- (v) Lag in payment of overheads $\frac{1}{2}$ month.
- (vi) Cash in hand and Bank is expected to Rs. 60,000.
- (vii) Provision for contingencies is required @ 10% of Working capital requirement including that provision.

You are required to prepare a projected statement of Working capital requirement for the first year of operations. Debtors are taken at cost.

- (b) A company wants to invest in a machinery that would cost Rs. 50,000 at the beginning of year 1. It is estimated that the net cash inflows from operations will be Rs. 18,000 per annum for 3 years, if the company opts to service a part of the machine at the end of year 1 at Rs. 10,000 and the scrap value at the end of year 3 will be Rs. 12,500. However, if the company decides not to service the part, it will have to be replaced at the end of year 2 at Rs. 15,400. But in this case, the machine will work for the 4th year also and get operational cash inflow of Rs. 18,000 for the 4th year. It will have to be scrapped at the end of year 4 at Rs. 9,000. Assuming cost of capital at 10% and ignoring taxes, will you recommend the purchase of this machine based on the net present value of its cash flows ?

7

If the supplier gives a discount of Rs. 5,000 for purchase, what would be your decision ? (The present value factors at the end of years 0, 1, 2, 3, 4, 5 and 6 are respectively 1, 0.9091, 0.8264, 0.7513, 0.6830, 0.6209 and 0.5644).

Solution to Question No. 7

7. a.

i. Under Marginal Costing					
	Base	Base Figure	Velocity	Computation	
Inventory					
Raw Materials	Raw Materials Consumed	800000	3/12	800000x(3/12)	200,000
Finished Goods	Difference in Production & Sales	5000	-	5000x50	250,000
Debtors	Cost Of Sales		1.5/12	2515000x(1.5/12)	314,375
Cash and Bank	-	60000	-	-	60,000
Creditors	Materials purchased	1000000	4/12	1000000x(4/12)	(333,333)
Wages	Direct labour	600000	1/12	600000x(1/12)	(50,000)
Overheads	(Mfg O/H+ Selling O/H)	1365000	0.5/12	1365000x(0.5/12)	(56,875)
Working Capital before Contingencies Provision					384,167

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Provision for contingencies	Working Capital before Contingencies Provision	384167	10%	384167x(10/110)	(34,924)
Working capital					349,242

ii. Under Absorption Costing					
	Base	Base Figure	Velocity	Computation	
Inventory					
Raw Materials	Raw Materials Consumed	800000	3/12	800000 x (3/12)	200,000
Finished Goods	Difference in Production & Sales	5000	-	5000 x 65	325,000
Debtors	Cost Of Sales		1.5/12	244000x(1.5/12)	305,000
Cash and Bank	-	60000	-	60,000	
Creditors	Materials purchased	1000000	4/12	1000000x(4/12)	(333,333)
Wages	Direct labour	600000	1/12	600000x(1/12)	(50,000)
Overheads	(Mfg O/H + Selling O/H)	1365000	0.5/12	1365000x(0.5/12)	(56,875)"
Working Capital before Contingencies Provision					449,792
Provision for contingencies	Working Capital before Contingencies Provision	449,792	10%	449792x(10/110)	(40,890)
Working capital					408,902

Working notes:

a.	Per Unit	Units	Rs.
Fixed Mfg Overheads	10	60000	600000
Fixed Selling and distribution OH	1	60000	60000

b.

	Under Marginal Costing			Under Marginal Costing		
Raw Materials	20	40000	800000	20	40000	800000
Direct Labour	15	40000	600000	15	40000	600000
Variable Mfg Overhead	15	40000	600000	15	40000	600000
Fixed Mfg Overhead			600000	15	40000	600000
Variable Selling overhead	3	35000	105000	3	35000	105000
Fixed Selling Overhead			60000	1	60000	60000
			2765000			2765000
Less: Closing stock	50	5000	250000	65	5000	325000
Cost of sales			2515000			2440000
Sales	80	35000	2800000	80	35000	2800000
Profit			285000			360000

c. Total Overheads = Variable Mfg O/H + Fixed Mfg O/H + Variable Selling O/H + Fixed Selling O/H
= 600000 + 600000 + 105000 + 60000
= 1365000

d. Purchase of material = Cost of goods consumed + Closing stock - Opening stock
= 800000 + 200000 - 0 = 1000000

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e.	Current Asset	A	
	Current Liability	B	
	Gross Working Capital (Excluding Provision)	C = (A – B)	110
	Provision for Contingencies	D	10
	Net Working Capital including Provisions	E	100

$$\text{Provision for contingencies} = \frac{\% \text{ Provision for Contingencies}}{\text{Gross Working Capital}} = \frac{D}{C} = \frac{10}{110}$$

i.e., = 10/110 On Working Capital before Contingencies Provision

7. b.

The company has two alternative plans

1. Conduct service on a part of the machine by year 1 and use the asset for 3 years
2. Replace that part of the machine by year 2 and use the asset for 4 years

Alternative 1

Years of Use	3
Cash Inflow	18000
Scrap value at the end of IIIrd Year	12500
Service Cost in the Ist year	10000
Cash outlay	45000

Year	Cash Flow	Present Value Factor	Discounted Cash Flow
1	8000	0.9091	7,273
2	18000	0.8264	14,876
3	30500	<u>0.7513</u>	<u>22,915</u>
		2.4869	45,064
		Less: Discounted Cash Outlay	<u>(45,000)</u>
		NPV	64

Alternative 2

Years of Use	4
Cash Inflow	18000
Scrap value	9000
Replacement Cost in the IInd Year	15400
Cash outlay	45000

Year	Cash Flow	Present Value Factor	Discounted Cash Flow
1	18000	0.9091	16,364
2	2600	0.8264	2,149
3	18000	0.7513	13,524
4	27000	<u>0.6830</u>	<u>18,441</u>
		3.1699	50,477
		Less: Discounted Cash Outlay	<u>(45,000)</u>
		NPV	5,477

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Since the two alternatives are different in lives, it may not be fair to take a decision based on NPV rather Equated Annuity Benefit (EAB) shall be the basis for decision making.

Alternative 1	EAB = (NPV / PVAF @ 10%, 3Yrs)	= 25.6798
Alternative 2	EAB = (NPV / PVAF @ 10%, 4Yrs)	= 1727.9681

In the analysis of EAB, it is understood that Alternative 2 is better for implementation as it gives better EAB value.

Solution to Question No.8

8. Answer any **three** of the following : 3×3=9

~~(i)~~ A company offers a Fixed deposit scheme whereby Rs. 10,000 matures to Rs. 12,625 after 2 years, on a half-yearly compounding basis. If the company wishes to amend the scheme by compounding interest every quarter, what will be the revised maturity value ?

~~(ii)~~ A company operates at a production level of 1,000 units. The contribution is Rs. 60 per unit, operating leverage is 6, combined leverage is 24. If tax rate is 30%, what would be its earnings after tax ?

(iii) What do you mean by Stock Turnover ratio and Gearing ratio ?

(iv) Explain the concept of multiple Internal rate of Return.

8. i.

$$\begin{aligned}
 An &= P(1+(r/2))^n \\
 12625 &= 10000(1+(r/2))^4 \\
 12625/10000 &= (1+(r/2))^4 \\
 1.2625 &= 1+(r/2)^4
 \end{aligned}$$

Taking 4th root on Lhs & Rhs

$$\begin{aligned}
 1.06 &= 1+(r/2) \\
 1.06-1 &= r/2 \\
 r &= 0.06 \times 2 \\
 &= 0.12 \\
 &= 12\%
 \end{aligned}$$

$$\begin{aligned}
 An &= P(1+(r/2))^n \\
 &= 10000(1+(.12/4))^8 \\
 &= 10000 \times (1.03)^8 \\
 &= 10000 \times 1.26677 \\
 &= 12,667.70
 \end{aligned}$$

Revised Maturity value = Rs 12667.70

8. ii.

$$\begin{aligned}
 DOL &= C/EBIT \\
 6 &= 60000/EBIT \\
 EBIT &= 60000/6 = 10,000
 \end{aligned}$$

$$\begin{aligned}
 DTL &= C/EBIT-I \\
 24 &= 60000/EBIT-I \\
 EBIT-I &= 60000/24 = 2,500
 \end{aligned}$$

$$\begin{aligned}
 EBIT &= 10000 \\
 \text{Interest (10000-2500)} &= 7500
 \end{aligned}$$

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EBIT-I (EBT)	=	2500
Tax @ 30%	=	750
Earnings after Tax	=	1750

8. iii.

Inventory Turnover Ratio: This ratio also known as stock turnover ratio establishes the relationship between the cost of goods sold during the year and average inventory held during the year. It is calculated as follows:

Inventory Turnover Ratio = Cost Of sales/Average Stock

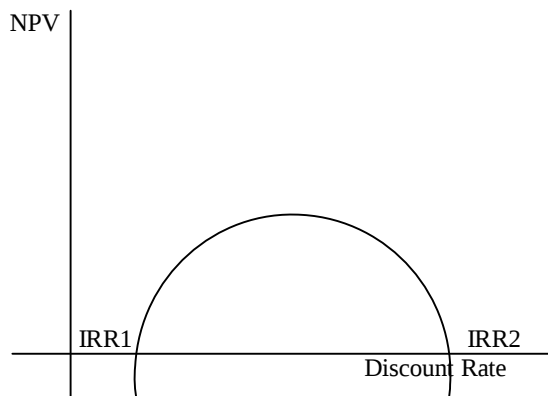
Average Stock = (Opening Stock + Closing Stock)/2

Capital Gearing Ratio: Capital gearing ratio is also calculated to show the proportion of fixed interest (dividend) bearing capital to funds belonging to equity shareholders.

Capital Gearing Ratio =
$$\frac{\text{Preference Share Capital} + \text{Debentures} + \text{Long term Loan}}{\text{Equity Share Capital} + \text{Reserves \& Surplus-Losses}}$$

8. iv.

Multiple Internal Rate of Return: In cases where project cash flows change signs or reverse during the life of a project e.g. an initial cash outflow is followed by cash inflows and subsequently followed by a major cash outflow, there may be more than one IRR. The following graph of discount rate versus NPV may be used as an illustration;



In such situations if the cost of capital is less than the two IRRs, a decision can be made easily, however otherwise the IRR decision rule may turn out to be misleading as the project should only be invested if the cost of capital is between IRR1 and IRR2. To understand the concept of multiple IRRs it is necessary to understand the implicit re investment assumption in both NPV and IRR techniques.

Advantages

- (i) This method makes use of the concept of time value of money.
- (ii) All the cash flows in the project are considered.
- (iii) IRR is easier to use as instantaneous understanding of desirability can be determined by comparing it with the cost of capital
- (iv) IRR technique helps in achieving the objective of minimisation of shareholders wealth.

Limitations

- (i) The calculation process is tedious if there are more than one cash outflows interspersed between the cash inflows; there can be multiple IRRs, the interpretation of which is difficult.
- (ii) The IRR approach creates a peculiar situation if we compare two projects with different inflow/outflow patterns.

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(iii) It is assumed that under this method all the future cash inflows of a proposal are reinvested at a rate equal to the IRR. It is ridiculous to imagine that the same firm has an ability to reinvest the cash flows at a rate equal to IRR.

(iv) If mutually exclusive projects are considered as investment options which have considerably different cash outlays. A project with a larger fund commitment but lower IRR contributes more in terms of absolute NPV and increases the shareholders' wealth. In such situation decisions based only on IRR criterion may not be correct.