

PAPER – 8: COST ACCOUNTING & FINANCIAL MANAGEMENT

Answer to MTP_Intermediate_Syllabus 2012_Dec2015_Set 1

The following table lists the learning objectives and the verbs that appear in the syllabus learning aims and examination questions:

	Learning objectives	Verbs used	Definition
LEVEL B	KNOWLEDGE	List	Make a list of
	What you are expected to know	State	Express, fully or clearly, the details/facts
		Define	Give the exact meaning of
		COMPREHENSION	Describe
	What you are expected to understand	Distinguish	Highlight the differences between
		Explain	Make clear or intelligible/ state the meaning or purpose of
		Identify	Recognize, establish or select after consideration
		Illustrate	Use an example to describe or explain something
		APPLICATION	Apply
	How you are expected to apply your knowledge	Calculate	Ascertain or reckon mathematically
		Demonstrate	Prove with certainty or exhibit by practical means
		Prepare	Make or get ready for use
		Reconcile	Make or prove consistent/ compatible
		Solve	Find an answer to
		Tabulate	Arrange in a table
	ANALYSIS	Analyse	Examine in detail the structure of
	How you are expected to analyse the detail of what you have learned	Categorise	Place into a defined class or division
		Compare and contrast	Show the similarities and/or differences between
Construct		Build up or compile	
Prioritise		Place in order of priority or sequence for action	
Produce		Create or bring into existence	

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Paper – 8: Cost Accounting & Financial Management

Full Marks: 100

Time Allowed: 3 Hours

This paper contains 3 questions. All questions are compulsory, subject to instruction provided against each question. All workings must form part of your answer.
Assumptions, if any, must be clearly indicated.

1. Answer all questions:

[2×10=20]

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

- (i) Oil Refinery
- (ii) Bicycle manufacturing
- (iii) Interior decoration
- (iv) Airlines company

Answer:

(i) Oil Refinery	Process Costing
(ii) Bicycle manufacturing	Multiple costing
(iii) Interior decoration	Job costing
(iv) Airlines	Operating costing

(b) Monthly demand of product X – 1,500 units

Requirement of component to produce 1 unit of product X: 5 units

Ordering, receiving and handling cost ₹ 10 per order

Trucking costs: ₹5 per order

Deterioration and obsolescence cost: ₹10 per unit p.a.

Interest Rate: 15% p.a.

Storage cost: ₹4,50,000 for 90,000 units

Purchase price of a component: ₹100

Required: Calculate Economic Order Quantity.

Answer:

A = Annual usage = (1,500 units x 5 units) x 12 = 90,000 units

O = Ordering cost = ₹10 + ₹5 = ₹15 per order

C = Carrying cost = ₹10 + 15% of ₹100 + (₹4,50,000/90,000) = ₹30

$$EOQ = \sqrt{\frac{2AO}{C}} = \sqrt{\frac{2 \times 90,000 \times 15}{30}} = 300 \text{ units}$$

(c) At what price per unit would Part No. A 32 be entered in the stores ledger, if the following invoice was received from a supplier?

Invoice	₹
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200 units, Part No. A 32 @5	1,000
Less: 20% discount	200
	800
Add: Excise duty @ 15%	120
	920
Add: Packing charges (non-returnable boxes)	50
	970

Notes:

- (i) A 2% discount will be given for payment in 30 days
- (ii) Documents substantiating payment of excess duty is enclosed for claiming CENVAT credit.

Answer:

Calculation of cost per unit

Particulars	₹
Cost after trade discount	800
Add: Packing charges	50
Total cost for 200 units (A + B)	850
Cost per unit (₹850/200 units)	4.25

(d) State the term FSN Analysis.

Answer:

FSN analysis is the process of classifying the materials based on their movement from inventory for a specified period. All the items are classified in to F-Fast moving, S- Slow moving and N-Non-moving Items based on consumption and average stay in the inventory. Higher the stay of item in the inventory, the slower would be the movement of the material. This analysis helps the store keeper / purchase department to keep the fast moving items always available & take necessary steps to dispose off the non-moving inventory.

(e) A machinery was purchased from a manufacturer who claimed that his machine could produce 36.5 tons in a year consisting of 365 days. Holidays, breakdown etc, were normally allowed in the factory for 65 days. Sales were expected to be 25 tons during the year and the plant actually produced 25.2 tons during the year.

You are required to state the following figures: (i) Rated capacity (ii) Practical capacity (iii) Normal capacity and (iv) Actual capacity

Answer:

- (i) Rated Capacity p.a. (as per manufacturer's claim) = 36.5 tons
- (ii) Practical Capacity $\left(36.5 \times \frac{365 - 65}{365} \right)$ = 30 tons
- (iii) Normal capacity (plant utilization based on sales expectancy) = 25 tons
- (iv) Actual Capacity = 25.2 tons

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- (f) If the minimum stock level and average stock level of raw material "X" are 8,000 and 18,000 units respectively, find out its reorder quantity.

Answer.

$$\begin{aligned}\text{Average stock level} &= \text{Minimum stock level} + \frac{1}{2} \text{Reorder quantity} \\ 18,000 \text{ units} &= 8,000 \text{ units} + \frac{1}{2} \text{Reorder quantity} \\ \frac{1}{2} \text{Reorder quantity} &= 18,000 \text{ units} - 8,000 \text{ units} \\ \text{Reorder level} &= 10,000 \text{ units} / 0.5 = 20,000 \text{ units}\end{aligned}$$

- (g) List out the two criticism of MM Hypothesis.

Answer:

- (i) Rates of interest are not the same for the individuals and firms. The firms generally have a higher credit standing because of which they can borrow funds at a lower rate of interest as compared to individuals.
- (ii) Home – Made leverage is not a perfect substitute for corporate leverage. If the firm borrows, the risk to the shareholder is limited to his shareholding in that company. But if he borrows personally, the liability will be extended to his personal property also. Hence, the assumption that personal or home – made leverage is a perfect substitute for corporate leverage is not valid.

- (h) The ratio of Current Assets (₹9,00,000) to Current liabilities (₹6,00,000) is 1.5 :1. The accountant of this firm is interested in maintaining a current ratio of 2:1 by paying some part of current liabilities. What would be the amount of current liabilities which must be paid for this purpose?

Answer:

Let the amount of current liabilities paid be "x".

$$\text{Thus, Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} = \frac{(9,00,000 - x)}{(6,00,000 - x)} = 2$$

$$= 9,00,000 - x = 12,00,000 - 2x$$

$$\text{or, } 2x - x = 12,00,000 - 9,00,000$$

$$= 3,00,000$$

- (i) Given for a project:

Annual Cash inflow ₹80,000

Useful life 4 years

Pay - Back period 2.855 years

Calculate the cost of the project?

Answer:

Pay - back period = Cost of project / Annual cash inflow

So, Cost of project = Annual cash inflow × Pay - back period

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$$\begin{aligned} &= 80,000 \times 2.855 \\ &= ₹2,28,400 \end{aligned}$$

- (j) EXCEL Ltd. projects that cash outlays of ₹37,50,000 will occur uniformly throughout the coming year. Excel plans to meet its cash requirements by periodically selling marketable securities from its portfolio. The firm's marketable securities are invested to earn 12% and the cost per transaction of converting securities to cash is ₹40.

According to Baumol, what is the optimal transaction size of marketable securities to cash?

Answer:

According to Baumol model,

$$\begin{aligned} \text{Optimal size} &= \sqrt{\frac{2TA}{I}} \\ &= \sqrt{\frac{2 \times 40 \times 37,50,000}{0.12}} \\ &= 50,000 \end{aligned}$$

2. Answer any three questions .

[3×16=48]

- (a) (i) A manufacturer uses 200 units of a component every month and he buys them entirely from an outside supplier. The order placing and receiving cost is Rs. 100 and annual carrying cost is Rs. 12. From this set of data, calculate the Economic Order Quantity. [2]

Answer :

$$EOQ = \sqrt{\frac{2ab}{CS}}$$

Where, a = annual consumption (200 x 12)
b = buying cost per order (Rs. 100)
C = cost per unit (not required as total carrying cost is given)
S = storage and carrying cost (Rs. 12)

$$\text{Economic Order Quantity} = \sqrt{\frac{2 \times 200 \times 12 \times 100}{12}} = 200 \text{ units}$$

- (a) (ii) P Ltd. Uses three types of materials A, B and C for production of 'X' the final product. The relevant monthly data for the components are as given below :

	A	B	C
Normal usage (units)	200	150	180
Minimum usage (units)	100	100	90
Maximum usage (units)	300	250	270
Reorder quantity (units)	750	900	720
Reorder period (months)	2 to 3	3 to 4	2 to 3

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Calculate from each component :

I. Reorder level

II. Minimum level

III. Maximum level and

IV. Average stock level

[1 ½ x 4 = 6]

Answer :

I. Reorder level = Maximum reorder period x Maximum usage

A	B	C
$3 \times 300 = 900 \text{ units}$	$4 \times 250 = 1,000 \text{ units}$	$3 \times 270 = 810 \text{ units}$

II. Minimum level = Reorder level – (Normal usage x Avg. delivery time)

A	B	C
$900 - (200 \times 2.5) = 400 \text{ units}$	$1,000 - (150 \times 3.5) = 475 \text{ units}$	$810 - (180 \times 2.5) = 360 \text{ units}$

III. Maximum level = Reorder level + Reordering Qty. – (Max consumption x Min Reorder period)

A	B	C
$900 + 750 - (100 \times 2)$ $= 1,450 \text{ units}$	$1,000 + 900 - (100 \times 3)$ $= 1,600 \text{ units}$	$810 + 720 - (90 \times 2)$ $= 1,350 \text{ units}$

IV. Average stock level = $\frac{\text{MaxLevel} + \text{MinLevel}}{2}$

A	B	C
$\frac{1,450 + 400}{2} = 925 \text{ units}$	$\frac{1,600 + 475}{2} = 1,038 \text{ units}$	$\frac{1,350 + 360}{2} = 855 \text{ units}$

(a) (iii) Two fitters, a labourer and a boy undertake a job on piece rate basis for Rs. 1,290. The time spent by each of them is 220 ordinary working hours. The rates of pay on time – rate basis are Rs. 1.50 per hour for each of the two fitters, Rs. 1 per hour for the labourer and Rs. 0.50 per hour for the boy. Calculate :

I. The amount of piece-work premium and the share of each worker, when the piece-work premium is divided proportionately to the wages paid.

II. The selling price of the above job on the basis of the following additional data :

Cost of direct material Rs. 2,010, works overhead at 20% of prime cost, selling overhead at 10% of works cost and profit at 25% on cost of sales. [3+2=5]

Answer :

I. Calculation of wages

2 fitters at Rs. 1.50 per hour for 220 hours each	Rs. 660
1 labourer at Rs. 1.00 per hour for 220 hours	Rs. 220
1 boy at Rs. 0.50 per hour for 220 hours	<u>Rs. 110</u>
Total	Rs. 990

Piece work premium

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Total wages agreed on piece rate	Rs. 1,290
Less : Wages calculated on time basis	<u>990</u>
	300

The amount of premium will be paid to workers in proportion to the wages paid, i.e. Fitter :

Labourer : Boy = 660 : 220 : 110 as under

2 fitters	Rs. 200.00
1 labourer	66.67
1 boy	<u>33.33</u>
Total	<u>300.00</u>

II. Calculation of selling price

Cost of direct materials	Rs. 2,010
Direct wages as given	<u>1,290</u>
Prime cost	3,300
Works overhead at 20% of prime cost	<u>660</u>
Works cost	3,960
Selling expenses 10% of works cost	<u>396</u>
Cost of Sales	4,356
Add : Profit @25% on Cost of Sales	<u>1,089</u>
Selling Price	5,445

(a) (iv) Discuss Opportunity Cost.

[3]

Answer.

Opportunity cost is the value of alternatives foregone by adopting a particular strategy or employing resources in specific manner. It is the return expected from an investment other than the present one. These refer to costs which result from the use or application of material, labour or other facilities in a particular manner which has been foregone due to not using the facilities in the manner originally planned. Resources (or input) like men, materials, plant and machinery, finance etc., when utilized in one particular way, yield a particular return (or output). If the same input is utilized in another way, yielding the same or a different return, the original return on the forsaken alternative that is no longer obtainable is the opportunity cost. For example, if fixed deposits in the bank are proposed to be withdrawn for financing project, the opportunity cost would be the loss of interest on the deposits. Similarly when a building leased out on rent to a party is got vacated for own purpose or a vacant space is not leased out but used internally, say, for expansion of the production programme, the rent so foregone is the opportunity cost.

(b) (i) A manufacturer of Surat purchased three Chemicals A, B and C from Bombay. The invoice gave the following information:

Rs.

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Chemical A :	12,600
Chemical B:	19,000
Chemical C:	9,500
Sales Tax	2,055
Railway Freight	<u>1,000</u>
Total Cost	<u>44,155</u>

A shortage of 200 kg in Chemical A, of 280 kg. in Chemical B and of 100 kg. in Chemical C was noticed due to breakages. At Surat, the manufacturer paid Octroi duty @ Re 0.10 per kg. He also paid Cartage Rs. 22 for Chemical A, Rs. 63.12 for Chemical B and Rs. 31.80 for Chemical C. Calculate the stock rate that you would suggest for pricing issue of chemicals assuming a provision of 5% towards further deterioration. [8]

Answer :

Statement showing the Issue Rate of Chemicals

	Chemicals		
	A	B	C
	Rs.	Rs.	Rs.
Purchase Price	12,600	19,000	9,500
Add: Sales Tax @ 5% of purchase price (Refer to Working Note 2)	630	950	475
Add: Railway Freight in the ratio of 3:5:2 (Refer to Working Note 3)	300	500	200
Add: Octroi @ Re. 0.10 p.per kg. On the quantity of material received (Refer to Working Note 1)	280	472	190
Add: Cartage	<u>22</u>	<u>63.12</u>	<u>31.80</u>
Total Price	<u>13,832</u>	<u>20,985.12</u>	<u>10,396.80</u>

$$\text{Rate of issue per Kg} = \frac{\text{Total price}}{\text{Qty. available for issue}} = \frac{\text{Rs. } 13,832}{2,660\text{kg.}} \quad \frac{\text{Rs. } 20,985.12}{4,484\text{Kg.}} \quad \frac{\text{Rs. } 10,396.80}{1,805\text{kg.}}$$

(Refer to Working Note 1) = Rs.5.20 = Rs. 4.68 = Rs. 5.76

Working Notes:

- Statement showing the quantity of chemicals available for issue

Chemicals		
A	B	C
Kg.	Kg.	Kg.

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Quantity purchased	3,000	5,000	2,000
Less: Shortage (Assumed to be normal)	<u>200</u>	<u>280</u>	<u>100</u>
Quantity received at the store	2,800	4,720	1,900
Less: Provision for further deterioration 5%	<u>140</u>	<u>236</u>	<u>95</u>
Quantity available for issue	<u>2,660</u>	<u>4,484</u>	<u>1,805</u>

2. Rate of sales Tax = $\frac{\text{Sales Tax}}{\text{Total Purchase price of Chemical}} \times 100 = \frac{\text{Rs.2,055}}{\text{Rs.41,100}} \times 100 = 5\%$

3. Railway Freight: It has been charged on the basis of quantity purchased i.e. A:3000 kg; B: 5000 kg; C: 2000 kg in the ratio of 3:5:2.

(b) (ii) The Managing Director of All Found Ltd is very much perturbed to see that labour turnover is increasing every year. Before taking a appropriate action, he desires to know the profit foregone on account of labour turnover. You are required to calculate the profit foregone on account of labour turnover from the following :

**ALL Found Ltd
Income Statement for the year ended 31-12-2014**

Sales		Rs. 2,00,000
Variable cost :	Rs.	
Material	50,000	
Direct labour	40,000	
Variable overhead	<u>40,000</u>	<u>1,30,000</u>
Contribution		70,000
Less : Fixed overhead		<u>20,000</u>
Profit before tax		<u>50,000</u>

The direct labour hours worked in the concern during the period were Rs. 20,300 of which 500 hours pertained to the new workers on training. Only 40% of the trainees time was productive. As replacement for the worker left was delayed for some time, 600 productive hours were lost. The direct costs incurred by the company as a consequence of labour separation and replacement were as follows :

Separation costs – Rs. 2,000; Selection costs – Rs. 3,000 and Training costs – Rs. 5,000. [8]

Answer :

Direct labour hours worked	20,300
Less : Unproductive time of new workers (500 hrs x 60%)	<u>300</u>
Productive hours	<u>20,000</u>

Lost labour hours 600 (replacement) + 300 (training) = 900

Unit sales per productive labour hours Rs 20,00,000 ÷ 20,000 = Rs. 10

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Loss of potential sales 900 hrs x Rs. 10	Rs. 9,000
Direct labour cost per hour worked = Rs. 40,000 ÷ 20,300	1.97
Increase in direct labour cost of lost hours due to replacement = 600 x 1.97 (300 hours already included while calculating the hourly rate)	1,182
Increase in material and variable overhead due to increase in potential sales = (90,000 ÷ 2,00,000) x 9,000	<u>4,050</u>
Total increase in cost	<u>5,232</u>
Contribution foregone	3,768
Add : Separation, selection and training costs	<u>10,000</u>
Profit foregone due to labour turnover	<u>13,768</u>

(c) (i) ABC Ltd. is a manufacturing company having three production departments, 'A' 'B' and 'C' and two service departments 'X' and 'y'. The following is the budget for December 2014:

	Total	A	B	C	X	Y
	Rs	Rs.	Rs.	Rs.	Rs.	Rs.
Direct Material		1,000	2,000	4,000	2,000	1,000
Direct Wages		5,000	2,000	8,000	1,000	2,000
Factory rent	4,000					
Power	2,500					
Depreciation	1,000					
Other overheads	9,000					
Additional information						
Area(Sq.ft.)		500	250	500	250	500
Capital Value (Rs. Lacs) of assets		20	40	20	10	10
Machine hours		1,000	2,000	4,000	1,000	1,000
Horse power of machines		50	40	20	15	25

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

	A	B	C	X	Y
	%	%	%	%	%
Service Dept. 'X'	45	15	30	-	10
Service Dept. 'Y'	60	35	-	5	-

Required:

(i) A statement showing distribution of overheads to various departments.

(ii) A statement showing re-distribution of service departments expenses to production departments.

(iii) Machine hours rates of the production departments 'A', 'B' and 'C'. [4+4+2=10]

Answer :

(i) Overhead Distribution Summary

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	Basis	Total Rs.	A Rs.	B Rs.	C Rs.	X Rs.	Y Rs.
Direct materials	Direct	-	-	-	-	2,000	1,000
Direct wages	..					1,000	2,000
Factory rent	Area	4,000	1,000	500	1,000	500	1,000
Power	H.P X M/c Hrs.	2,500	500	800	800	150	250
Depreciation	Cap. Value	1,000	200	400	200	100	100
Other Overheads	M/c hrs.	9,000	1,000	2,000	4,000	1,000	1,000
		-	2,700	3,700	6,000	4,750	5,350

(ii) Redistribution of Service Department's expenses:

	A Rs.	B Rs.	C Rs.	X Rs.	Y Rs.
Total Overheads	2,700	3,700	6,000	4,750	5,350
Dept . X overhead apportioned in the ratio (45 : 15 : 30 : 10)	2,138	712	1,425	- 4,750	475
Dept . Y overhead apportioned in the ratio (60: 35 : -- : 5)	3,495	2,039	--	291	- 5,825
Dept . X overhead apportioned in the ratio (45 : 15 : 30 : 10)	131	44	87	-- 291	29
Dept . Y overhead apportioned in the ratio (60: 35 : -- : 5)	17	10	--	2	- 29
Dept . X overhead apportioned in the ratio (45 : 15 : 30 : 10)	1	--	1	-- 2	--
	8,482	6,505	7,513	-	-

(iii) Machine Hour rate

Machine hours	1,000	2,000	4,000
Machine hour rate (Rs.)	8.48	3.25	1.88

(c) (ii) Explain how under and over absorption of overheads are treated in cost accounts. [6]

Answer :

Treatment of under and over absorption of overheads in Cost Accounts: Under and over absorbed overheads can be disposed off in Cost Accounts by using any one of the following methods:

- (i) Use of supplementary rates.
- (ii) Writing off to Costing Profit and Loss Account.

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(iii) Carrying over to the next year's account.

(i) Use of Supplementary Rates: This method is used to adjust the difference between overheads absorbed and overheads actually incurred by computing supplementary overhead rates. Such rates may be either positive or negative. A positive rate is intended to add the unabsorbed overheads to the cost of production. The negative rate, however, corrects the cost of production by deducting the amount of over-absorbed overheads. The effect of applying such rate is to make the actual overhead get completely absorbed.

(ii) Writing off to Costing Profit & Loss Account: When under or over absorbed amount of overheads is quite negligible and it is not felt worth while to absorb it by using supplementary rates, the said amount is transferred to Costing Profit & Loss Account. In case under absorption of overheads arises due to factors like idle capacity, defective planning etc. Then also it may be transferred to Costing Profit & Loss Account.

(iii) Carrying over to the next year's accounts: Under this method, the amount of over/under absorbed overhead is carried over to the next period this method is not considered desirable as it allows costs of one period to affect cost of another/period. Further, comparison between one period and another is rendered difficult. However, this method may be used when the normal business cycle extends over more than one year, or in the case of a new project, the output is low in the initial years.

(d) (i) A machine shop has 8 identical drilling machines manned by 6 operators. The machine cannot be worked without an operator wholly engaged on it. The original cost of all these machines works out to Rs. 8 lakh. These particulars are furnished for a 6 month period.

Normal available hours per month per worker	208
Absenteeism (without pay) hours P.M. per worker	18
Leave (with pay) hours per worker P.M.	20
Normal idle time Unavoidable hours per worker P.M.	10
Average rate of wages per worker for 8 hours a day	Rs.20
Average rate of production bonus estimated	15% on wages
Value of Power consumed	Rs. 8,050
Supervision and indirect Labour	Rs. 3,300
Lighting and electricity	Rs. 1,200

These particulars are for a year:

Repairs and maintenance including consumables	3% of value of machines
Insurance	Rs. 40,000
Depreciation.	10% of original cost
Other sundry works expenses	Rs. 12,000
General management expenses allocated	Rs. 54,530

You are required to work out a comprehensive machine hour rate for the machine shop. [10]

Answer :

Computation of comprehensive machine hour rate of machine shop

Operator's wages	Rs.
(Refer to working note 2)	17,100
Production bonus (15% on wages)	2,565

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Power consumed	8,050
Supervision and indirect labour	3,300
Lighting and electricity	1,200
Repairs and maintenance	12,000
Insurance	20,000
Depreciation	40,000
Other sundry works expenses	6,000
General management expenses allocated	<u>27,265</u>
Total overhead of machine shop	<u>1,37,480</u>

$$\begin{aligned}
 \text{Machine hour rate} &= \frac{\text{Total overhead of machine shop}}{\text{Hours of machines operation}} \\
 &= \frac{\text{Rs.1,37,480}}{5,760 \text{ hours}} \quad (\text{Refer to working note 1}) \\
 &= \text{Rs. 23.87}
 \end{aligned}$$

Working notes:

1. Computation of hours, for which 6 operators are available for 6 months.

Normal available hours p.m. per operator	208
Less: Absenteeism hours	18
Less: Leave hours	20
Less: idle time hours	<u>10</u>
Utilizable hours p.m. per operators	<u>48</u>
Total utilizable hour for 6 operators and for 6 months are = 160 hours × 6 operators × 6 months = 5,760 hours.	<u>160</u>

As machines cannot be worked without an operator wholly engaged on them, therefore hours for which 6 operators are available for 6 months are the hours for which machines can be used. Hence 5,760 hours represents total machine hours.

2 Computation of operator's wages

Total rate of wages per hour = Rs. 2.50
 (Rs. 20/8 hours)
 Hours per month for which wages are paid to a worker = 190 hours
 (208 hours – 18 hours)
 Total wages paid to 6 operators for 6 months = Rs. 17,100
 (190 hours × 6 operators × 6 months × Rs.2.50)

(d) (ii) The Bharat Manufacturing Company submits the following information on 31st March 2015 :

[6]

Particulars	Rs.	Particulars	Rs.
Sales for the year	2,75,000	Direct labour	65,000
Inventories at the beginning of the year :		Factory overhead was 60% of the direct labour cost	
Finished goods	7,000	Inventories at the end of the year :	
Work-in-progress	4,000	Work-in-progress	6,000
Purchases of materials for the year were	1,10,000	Finished goods	8,000
Materials inventory :		Other expenses for the year :	
At the beginning of the year	3,000	Selling expenses 10% of sales	

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At the end of the year	4,000	Administrative expenses % of sales
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Prepare a Statement of Cost.

Answer :

Statement of Cost of Bharat Manufacturing Company For the year ended 31st March, 2015

	Rs.	Rs.
Materials consumed		
Inventory at the beginning	3,000	
Purchases during the year	<u>1,10,000</u>	
	1,13,000	
Less : Inventory at the end of the year	<u>4,000</u>	1,09,000
Direct labour		<u>65,000</u>
Prime cost		1,74,000
Factory overheads @ 60% of labour cost		<u>39,000</u>
Gross works cost		2,13,000
Add : Work-in-progress at the beginning		<u>4,000</u>
		2,17,000
Less : Work-in-progress at the end of the year		<u>6,000</u>
Works cost		2,11,000
Add : Administrative expenses		<u>13,750</u>
Cost of production		2,24,750

Profit or Loss Statement For the year ended 31st March, 2015

	Rs.	Rs.
Opening inventories of finished goods	7,000	
Cost of goods produced during the year	2,24,750	
	2,31,750	
Less : Closing inventories of finished goods	8,000	
Cost of production of goods sold		2,23,750
Add : Selling expenses @10% of sales		<u>27,500</u>
Cost of goods sold		2,51,250
Profit (balancing figure)		<u>23,750</u>
Sales		2,75,000

3. Answer any two questions

[2×16=32]

(a) (i) Complete the Balance Sheet given below with help of the following information:

Gross Profits	Rs. 40,500
Shareholders' Funds	Rs. 5,75,000
Gross Profit margin	15%
Credit sales to Total sales	60%
Total Assets turnover	0.3 times

Answer to MTP_Intermediate_Syllabus 2012_Dec2015_Set 1

Inventory turnover	4 times
Average collection period (a 360 days year)	20 days
Current ratio	1.35
Long-term Debt to Equity	45%

Balance Sheet			
Creditors	Cash
Long-term debt	Debtors
Shareholders' funds	Inventory
	_____	Fixed assets	_____
	_____		_____

[10]

Answer :

Gross Profits Rs. 40,500

Gross Profit Margin 15%

∴ Sales = $\frac{\text{Gross Profits}}{\text{Gross Profit Margin}}$

= Rs. 40,500 / 0.15

= Rs. 2,70,000

Credit Sales to Total Sales = 60%

∴ Credit Sales = Rs. 2,70,000 × 0.60

= Rs. 1,62,000

Total Assets Turnover = 0.3 times

∴ Total Assets = $\frac{\text{Sales}}{\text{Total Assets Turnover}}$

= $\frac{\text{Rs. 2,70,000}}{0.3}$

= Rs. 9,00,000

Sales – Gross Profits = COGS

∴ COGS = Rs. 2,70,000 – 40,500

= Rs. 2,29,500

Inventory turnover = 4 times

Inventory = COGS / Inventory turnover = 2,29,500 / 4

= Rs. 57,375

Average Collection Period = 20 days

∴ Debtors turnover = $\frac{360}{\text{Average Collection Period}}$

= 360 / 20 = 18

Answer to MTP_Intermediate_Syllabus 2012_Dec2015_Set 1

$$\begin{aligned}\therefore \text{Debtors} &= \frac{\text{Credit Sales}}{\text{Debtors turnover}} \\ &= 16,200/18 \\ &= \text{Rs. } 9,000\end{aligned}$$

$$\text{Current ratio} = 1.35$$

$$1.35 = [\text{Debtors} + \text{Inventory} + \text{Cash}] / \text{Creditors}$$

$$1.35 \text{ Creditors} = (\text{Rs. } 9,000 + \text{Rs. } 57,375 + \text{Cash})$$

$$1.35 \text{ Creditors} = \text{Rs. } 66,375 + \text{Cash}$$

$$\text{Long-term Debt to Equity} = 45\%$$

$$\text{Shareholders Funds} = \text{Rs. } 5,75,000$$

$$\begin{aligned}\therefore \text{Long-term Debt} &= \text{Rs. } 5,75,000 \times 45\% \\ &= \text{Rs. } 2,58,750\end{aligned}$$

$$\begin{aligned}\text{Creditors (Balance figure)} &= 9,00,000 - (5,75,000 + 2,58,750) \\ &= \text{Rs. } 66,250\end{aligned}$$

$$\therefore \text{Cash} = (66,250 \times 1.35) - 66,375 = \text{Rs. } 23,062.50$$

Balance Sheet (in Rs)			
Creditors (Bal. Fig)	66,250	Cash	23,063
		Debtors	9,000
Long- term debt	2,58,750	Inventory	57,375
Shareholders' funds	5,75,000	Fixed Assets (Bal fig.)	8,10,562
	9,00,000		9,00,000

(a) (ii) List the merits and demerits of the pay back period method.

[3+3=6]

Answer :

The following are the merits of the Payback Period method :

- (i) Easy to calculate:** It is one of the easiest methods of evaluating the investment projects. It is simple to understand and easy to compute.
- (ii) Knowledge:** The knowledge of payback period is useful in decision-making, the shorter the period better the project.
- (iii) Protection from loss due to obsolescence:** This method is very suitable to such industries where mechanical and technical changes are routine practice and hence, shorter payback period practice avoids such losses.
- (iv) Easily availability of information:** It can be computed on the basis of accounting information, what is available from the books.

Demerits: However, the payback period method has certain demerits:

Answer to MTP_Intermediate_Syllabus 2012_Dec2015_Set 1

- (i) **Failure in taking cash flows after payback period:** This method is not taking into account the cash flows received by the company after the payback period.
- (ii) **Not considering the time value of money:** It does not take into account the time value of money.
- (iii) **Non-considering of interest factor:** It does not take into account the interest factor involved in the capital outlay.
- (iv) **Maximisation of market value not possible:** It is not consistent with the objective of maximizing the market value of share.

(b) (i) A company issues Rs. 10,00,000, 12% debentures of Rs. 100 each. The debentures are redeemable after the expiry of fixed period of 7 years. The company is in 35% tax bracket.

Required :

I. Calculate the cost of debt after tax, if debentures are issued at :

- (i) Par
- (ii) 10% discount
- (iii) 10% premium

II. If brokerage is paid at 2%, what will be the cost of debentures, if issues is at par ? [4]

Answer :

I. Calculation of cost of debt after tax

(i) If debentures are issued at par

$$K_d = i(1 - t) = 12\%(1 - 0.35) = 7.8\%$$

(ii) If debentures are issued at 10% discount

$$K_d = \frac{[1 + (\frac{RV - SV}{N})](1 - t)}{\frac{RV + SV}{2}} = \frac{[12 + (\frac{100 - 90}{7})](1 - 0.35)}{\frac{100 + 90}{2}} = \frac{(12 + 1.43)(1 - 0.35)}{95} = 0.0919 \text{ or } 9.19\%$$

(iii) If debentures are issued at 10% premium

$$K_d = \frac{i(1 - t)}{NP} = \frac{12(1 - 0.35)}{110} = 0.0709 = 7.09\%$$

II. Calculation of cost of debt after tax, if brokerage is paid at 2% and issue is at par

$$K_d = \frac{12(1 - 0.35)}{100 - 2} = 0.0796 = 7.96\%$$

(b) (ii) The directors of Wholesalers Ltd. Have forecast a steady rise in turnover for the coming year and have asked you to set out the implications of this on the company's cash position.

The turnover for the current year to 31st March 2014, was ₹12 crore, a steady ₹1 crore per month. It is felt that as a result of an advertising campaign in December 2008- March 2009, this would rise to ₹1.3 crore per month for the first six months of 2014-2015 and to ₹1.5 crore per month for the second six months and thereafter.

Answer to MTP_Intermediate_Syllabus 2012_Dec2015_Set 1

Wholesalers Ltd. Achieve a gross profit on sales of 25% and take two months credit from suppliers; 40% of customers pay in the month of purchase, 40% pay in the following month and 20% pay one month later. The Company holds stocks for forecast sales in April and plans to maintain this one month stock level. Variable overheads are usually 10% of sales and are paid in the month incurred. Fixed overheads of ₹1.5 crore are forecast for 2014-2015 which include ₹30,00,000 depreciation. Fixed overheads are paid in the month incurred. The company plans to spend ₹20,00,000 in June on additional office furniture and prefabricated warehousing.

You are required to produce a summarized forecast of cash flow for 2014-2015 with supporting schedules. Ignore taxation. [6]

Answer :

Wholesalers Limited
Forecast of Cash Flow for 2014-2015 (₹ in crores)

Receipts:		
Sales= (₹1.3×6+₹1.5×6)	(₹1.3×6+₹1.5×6)=	₹16.8 crores
Add: opening Debtors =	1×0.6+1×0.2=	₹0.8 crores
Less: closing Debtors=	1.5×0.2+1.5×0.6=	₹1.2 crores
Total		₹16.4 crores
Payments:		
Cost of Sales=(16.8×0.75)	12.6	
Closing Stock=(1.5×0.75)	1.125	
Opening Stock=(1.3×0.75)	0.975	
Purchases:	12.75	
Op. creditors(1.3×0.75+1×0.75)	1.725	
cl. Creditors (1.5×0.75×2 m)=	2.25	
Payment to Creditors:		₹12.225 Crores
Variable overheads 10% of 16.8		₹1.68 crores
Fixed overheads (1.5-0.30 Depn.)		₹1.20 Crores
Purchase of furniture		₹0.20 crores
Total		₹15.305 Crores
Surplus		₹1.095 crores

Note: Opening debtors consist of 60% of March 14 Debtors and 20% of February 14 debtors, who will pay in 2014-15, while 60% of March 15 Debtors and 20% of February 15 Debtors will not pay in 2014-15. The sales figure is adjusted with opening and closing debtors.

(b) (iii) Surya Industries Ltd. is marketing all its products through a network of dealers. All sales are on credit and the dealers are given one month time to settle bills. The company is thinking of changing the credit period with a view to increase its overall profits. The marketing department has prepared the following estimates for different periods of credit:

Particulars	Present Policy	Plan I	Plan II	Plan III
Credit period (in months)	1	1.5	2	3
Sales (₹ Lakhs)	120	130	150	180
Fixed costs (₹ Lakhs)	30	30	35	40
Bad debts (% of sales)	0.6	0.9	1	2

Answer to MTP_Intermediate_Syllabus 2012_Dec2015_Set 1

The company has a contribution/sales ratio of 40% further it requires a pre-tax return on investment at 20%. Evaluate each of the above proposals and recommend the best credit period for the company. [6]

Answer:

Analysis of Credit Policies		(₹ in Lakhs)			
Credit Period (months)	Current Policy (1)	Plan I (1.5)	Plan II (2)	Plan III (3)	
Credit sales	120	130	150	180	
Less: Variable cost @ 60%	72	78	90	108	
Contribution	48	52	60	72	
Less: Fixed cost	30	30	35	40	
Operating Profit (a)	18	22	25	32	
Cost of Sales (Variable Cost + Fixed Cost)	102	108	125	148	
Investment in debtors [Cost of sales x Credit period / 12 months]	8.5	13.5	20.83	37.00	
Cost of Investment in debtors @ 20% (b)	1.70	2.70	4.17	7.40	
Credit sales	120	130	150	180	
Bad debts (% of sales)	0.6%	0.9%	1%	2%	
Bad debts (c)	0.72	1.17	1.50	3.60	
Net Profit (a) – [(b) + (c)]	15.58	18.13	19.33	21.00	

Analysis:

The net profit is higher if 3 months credit period is allowed. Hence, it is suggested to adopt plan III.

(c) (i) Write short note on Venture Capital Financing.

[4]

Answer.

Venture capital financing refers to financing of new high-risk ventures promoted by qualified entrepreneurs who lack experience and funds to give shape to their ideas. A venture capitalist invests in equity or debt securities floated by such entrepreneurs who undertake highly risky ventures with a potential of success.

Common methods of venture capital financing include :

- (i) Equity financing : The undertaking's requirements of long-term funds are met by contribution by the venture capitalist but not exceeding 49% of the total equity capital;
- (ii) Conditional Loan : Which is repayable in the form of royalty after the venture is able to generate sales;
- (iii) Income Note : A hybrid security combining features of both a conventional and conditional loan, where the entrepreneur pays both interest and royalty but at substantially lower rates;
- (iv) Participating debenture: The security carries charges in three phases – start phase, no interest upto a particular level of operations; next stage, low interest; thereafter a high rate.

Answer to MTP_Intermediate_Syllabus 2012_Dec2015_Set 1

(c) (ii) The following information relates to nana Ltd.

Earnings of the Company	₹10, 00,000
Dividend payout ratio	60%
No. of shares outstanding	2, 00,000
Rate of Return on Investment	15%
Equity Capitalization Rate	12%

- i) What would be the Market Value per Share as per Walter's Model?
- ii) What is the optimum Dividend Payout Ratio according to Walter's Model, and the Market Value of Company's Share at that payout ratio? [2+2+2]

Answer.

$$\text{Value per share} = \frac{\text{DPS}}{K_e} + \frac{(\text{EPS} - \text{DPS}) \times \frac{R}{K_e}}{K_e}$$

Computation of Factors:

Earnings Per Share (EPS)	₹10 lakhs ÷ 2 lakhs = ₹5	Cost of Equity (K _e)	12%
Dividend Per Share (DPS)	EPS ₹5 × payout 60% = ₹3	Return on Investment (R)	15%

$$\text{i) Value per Share} = \frac{₹3}{0.12} + \frac{(₹5 - ₹3) \times \frac{0.15}{0.12}}{0.12} = ₹25 + ₹20.83 = ₹45.83$$

- ii) Optimum payout Ratio: since the company's earning capacity i.e. ROI (of 15%) is greater than Shareholder's Expectation (of 12%), the shareholder's Wealth would be maximized at "Zero" payout, i.e. Nil Dividend.

- iii) Value Per Share at Optimum Payout

$$= \frac{₹0}{0.12} + \frac{(₹5 - ₹0) \times \frac{0.15}{0.12}}{0.12} = ₹0 + 52.08 = ₹52.08$$

(c) (iii) Y Ltd. has ₹ 15,00,000 allocated for capital budgeting purposes. The following proposals and associated profitability indexes have been determined:

Project	Amount ₹	Profitability Index
1	4,50,000	1.22
2	2,25,000	0.95
3	5,25,000	1.20
4	6,75,000	1.18
5	3,00,000	1.20
6	6,00,000	1.05

Which of the above investments should be undertaken? Assume that projects are indivisible and there is no alternative use of the money allocated for capital budgeting. [6]

Answer:

Statement showing ranking of projects on the basis of Profitability Index

Project	Amount	P.I.	Rank
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Answer to MTP_Intermediate_Syllabus 2012_Dec2015_Set 1

1	4,50,000	1.22	1
2	2,25,000	0.95	5
3	5,25,000	1.20	2
4	6,75,000	1.18	3
5	3,00,000	1.20	2
6	6,00,000	1.05	4

Assuming that projects are indivisible and there is no alternative use of the money allocated for capital budgeting on the basis of P.I., the Y Ltd., is advised to undertake investment in projects 1, 3, and 5.

However, among the alternative projects the allocation should be made to the projects which adds the most to the shareholders wealth. The NPV method, by its definition, will always select such projects.

Statement showing NPV of the projects

Project (i)	Amount (₹) (ii)	P.I. (iii)	Cash inflows of project (₹) (iv) = [(ii) x (iii)]	N.P.V. of Project (₹) (v) = [(iv)-(ii)]
1	4,50,000	1.22	5,49,000	99,000
2	2,25,000	0.95	2,13,750	(-)11,250
3	5,25,000	1.20	6,30,000	1,05,000
4	6,75,000	1.18	7,96,500	1,21,500
5	3,00,000	1.20	3,60,000	60,000
6	6,00,000	1.05	6,30,000	30,000

The allocation of funds to the projects 1,3 and 5 (as selected above on the basis of P.I.) will give N.P.V. of ₹ 2,64,000 and ₹ 2,25,000 will remain unspent.

However, the N.P.V. of the projects 3, 4 and 5 is ₹ 2,86,500 which is more than the N.P.V. of projects 1, 3 and 5. Further, by undertaking projects 3, 4 and 5, the total money gets exhausted. Therefore, Y Ltd. is advised to undertake investments in projects 3, 4 and 5.