

Paper – 8: Cost Accounting & Financial Management

Answer to PTP_Intermediate_Syllabus 2012_June2015_Set 2

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 What you are expected to know	List	Make a list of
		State	Express, fully or clearly, the details/facts
		Define	Give the exact meaning of
	COMPREHENSION What you are expected to understand	Describe	Communicate the key features of
		Distinguish	Highlight the differences between
		Explain	Make clear or intelligible/ state the meaning or purpose of
		Identify	Recognize, establish or select after consideration
	APPLICATION How you are expected to apply your knowledge	Illustrate	Use an example to describe or explain something
		Apply	Put to practical use
		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
	ANALYSIS How you are expected to analyse the detail of what you have learned	Solve	Find an answer to
		Tabulate	Arrange in a table
		Analyse	Examine in detail the structure of
		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) Products X, Y and Z are manufactured by XYZ Company. Special permit charges of ₹12,00,000 are paid for X and renewable every 4 years. How will the permit charges be treated in Cost Accounts?

Answer:

Special permit charges are direct expenses for X, amortized at 3,00,000 per annum, assuming annual production period. Permit charges are treated as direct expenses.

(b) Two workmen, X and Y, produce the same product using the material. X is paid bonus according to Halsey plan, while Y is paid bonus according to Rowan plan. The time allowed to manufacture the product is 150 hours. X has taken 90 hours and Y has taken 120 hours to complete the product. The normal hour rate of wages of workman X is ₹20 per hour. The total earnings of both the workers are same. Calculate the normal hour rate of wages of workman Y.

Answer:

Wages of X under Halsey Plan = Hours worked × Rate per hour + (50% × time saved × rate per hour)

$$= 90 \text{ hrs} \times ₹20 + [50\% \times (150-90) \times ₹20] \\ = ₹2,400$$

Let normal hourly rate of wages of workman Y = ₹a per hr

Wages of Y under Rowan Plan = Hours worked × Rate per hour + (Time taken / Time allowed × time saved × rate per hrs)

$$= 120 \text{ hrs} \times ₹a + (120 / 150 \times 30 \times ₹a) \\ = ₹144a$$

Earnings of Y = Earnings of X

$$₹144a = ₹2,400$$

Therefore, a = ₹16.67 per hour

Thus normal hourly rate of wages of workman Y = ₹16.67 per hr.

(c) State the cost units applicable to the following industries:

Cement, Goods Transport, Education, BPO

Answer:

Cost units for the following industries

Industry	Cost unit	
Cement	Tonnes	Any unit of weight is acceptable (like quintals, kg, etc)
Goods Transport	Tonnes-Kilometer	Any unit that is a product of weight and length(distance) (like ton-miles, quintal-miles, etc)
Education	Student year	Any unit that is a product of no. of students and the duration -days/months or years
BPO	Accounts	Any unit in terms of number of transactions, or a

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	handled	product of number and value of transactions
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(d) List the objective of CAS-4.

Answer:

Objectives of CAS-4: Cost Accounting Standard on Cost of Production for Captive Consumption are:

- The purpose of this standard is to bring uniformity in the principles and methods used for determining the cost of production of excisable goods used for captive consumption.
- The cost statement prepared based on standard will be used for determination of assessable value of excisable goods used for captive consumption.
- The standard and its disclosure requirement will provide better transparency in the valuation of excisable goods used for captive consumption.

(e) Compute the Inventory turnover ratio from the following information:

Opening Stock - ₹ 50,000; Closing Stock - ₹ 80,000; Material Consumed - ₹ 3,90,000

Answer:

$$\text{Inventory turnover ratio} = \frac{\text{Cost of stock of raw material consumed}}{\text{Average stock of raw material}} = \frac{\text{₹}3,60,000}{\text{₹}65,000} = 5.54 \text{ times}$$

(Refer to working note)

$$\text{Average number of days} = \frac{365 \text{ days}}{\text{Inventory turnover ratio}} = \frac{365 \text{ days}}{5.54} = 65.88 \text{ days} = 66 \text{ days}$$

Working note:

	=	₹
Opening stock of raw material	=	50,000
Add: Material purchases during the year	=	3,90,000
Less: Closing stock of raw material	=	<u>80,000</u>
Cost of stock of raw material consumed		<u>3,60,000</u>

$$\begin{aligned} \text{Average stock of raw material} &= \frac{1}{2} \left\{ \begin{array}{l} \text{Opening stock of} \\ \text{raw material} \end{array} + \begin{array}{l} \text{Closing stock of} \\ \text{raw material} \end{array} \right\} \\ &= \frac{1}{2} \{ \text{₹} 50,000 + \text{₹} 80,000 \} = \text{₹} 65,000 \end{aligned}$$

(f) XYZ Ltd. uses a historical cost system and absorbed overheads on the basis of predetermined rate. The following data are available for the year ended 31st March, 2015.

Manufacturing Overheads	₹
Amount Actually spent	1,90,000
Amount absorbed	1,70,000
Cost of Goods sold	3,36,000
Stock of finished goods	96,000
Work-in-progress	48,000

Calculate using the Supplementary rate methods of disposal of under-absorbed overheads.

Answer:

Calculation of under absorbed Overheads

	(₹)	
Overheads Actually incurred		1,90,000
Less: Overhead absorbed		(1,70,000)

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Overhead under absorbed	20,000
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Applying Supplementary Rate:

Since, the overheads are under absorbed so we have to apply positive supplementary rates per unit to adjust the cost of production by under absorbed amount. Now, here the cost of production has been distributed under three account i.e., Cost of Goods Sold Account, Stock of Finished goods Account & WIP Account, hence we have to apportion the total under absorbed overheads to the above accounts in the rates of their amounts to adjust the cost books by amount of under absorbed overheads.

Apportionment of Under Absorbed Overheads:				
Account	Amount (₹)	Share of under absorbed overheads (in the ratio of their amount)	Revised (₹)	Amount
Cost of Goods Sold	3,36,000	14,000		3,50,000
Stock of Finished Goods	96,000	4,000		1,00,000
Work-in-progress	48,000	2,000		50,000
	4,80,000	20,000		5,00,000

- (g) The average daily sales of a company are ₹8 lac. The company normally keeps cash balance of ₹1,20,000. If the weighted operating cycle of the company is 40 days, what will be the working capital.

Answer:

The working capital requirement is for 40 days of the weighted operating cycle plus normal cash balance

$$= \text{Sales per day} * \text{weighted operating cycle} + \text{cash balance requirement}$$

$$= ₹ 8 \text{ lac} * 40 + ₹ 1.20 \text{ lac} = ₹ 321.2 \text{ lac.}$$

- (h) Airtel Communications is trying to estimate the first – year operating cash flow (at t=1) for a proposed project. The finance staff has collected the following information:

Projected sales = ₹1 crore

Operating costs = ₹70 lakhs (not including depreciation)

Depreciation = ₹20 lakhs

Interest expense = ₹20 lakhs

The company faces a 30% tax rate. What is the project's operating cash flow for the year (t=1)?

Answer:

Operating cash Flow: (t=1)

Sales revenue	100,00,000
Add: Operating costs	70,00,000
Add: Depreciation	20,00,000
Operating income before taxes	10,00,000
Less: Taxes (30%)	3,00,000
Operating income after taxes	7,00,000
Add back depreciation	20,00,000
Operating cash flow	27,00,000

- (i) GEMINI LTD. has total assets of ₹60 crore and a Debt/equity ratio of 0.5. Its sales are ₹27 crore and it has total fixed cost of ₹7 crore. If the company's EBIT is ₹6 crore, its tax rate is 30% and the interest rate on debt is 12%, the ROE of GEMINI LTD. would be how much?

Answer:

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$$\begin{aligned}
 \text{Total Equity+ Total Debt} &= ₹60 \text{ crore} \\
 \text{Total equity} &= (60/1.5) = ₹40 \text{ crore} \\
 \text{Total Debt} &= (60-40) = ₹20 \text{ crore} \\
 \text{Net income} &= [(EBIT)-I] \times (1-t) = (6-2.40) (1-0.30) \\
 &= 3.60 \times 0.7 \\
 &= ₹2.52 \text{ crore.} \\
 \text{ROE} &= (2.52/40) \times 100 = 6.30\%
 \end{aligned}$$

(j) What will be the effect on NPV of a one year project if fixed costs are increased from ₹200 to ₹300. When the firm is profit making, pays tax @ 30% and has 15% cost of capital?

Answer:

NPV decrease by ₹68.869

Increase in Fixed Cost = ₹100, increase, in each outflow after tax = ₹70, NPV = 70/1.15 = ₹68.869 decrease in NPV

2. (Answer any three questions)

[3×16=48]

(a)

(i) PC Company purchases a specialized item and the quantity to be purchased is 2,500 pieces at a price of ₹200 per piece. Ordering cost per order is ₹200 and carrying cost is 2% per year of the inventory cost. Normal lead time is 20 days and safety stock is nil. Assume yearly working days as 250.

I. Calculate the Economic Ordering Quantity.

II. Re-order Inventory Level.

III. If a 2% discount on price is given for order quantity 1,250 pieces or more in a lot, should the company accept the offer of discount? [2+2+4]

Answer:

$$\begin{aligned}
 \text{I. } \text{EOQ} &= \sqrt{\frac{2 \times 2,500 \times 200}{2\% \times 200}} \\
 &= \sqrt{\frac{10,00,000}{4}} \\
 &= 500 \text{ units}
 \end{aligned}$$

$$\text{II. Reorder level} = \text{Normal lead time} \times \text{normal usage} = 20 \times \frac{2,500}{250} = 200$$

III. Evaluation of offer for quantity discount

Since EOQ is 500 units, the minimum quantity to get a discount is 1,250 is used for evaluation. Moreover, in this analysis, if the ordering cost is reduced to one order of 2,500 units, carrying cost will be much more and hence evaluation of this order size is not useful.

	Based on EOQ	Discount offer
Annual Demand = d	2,500	2,500
Order size (q units)	500	1,250
No. of orders	5	2
Ordering cost at 200 ₹/ order	1,000	400
Purchase price ₹/ unit = p	200	196
Purchase cost = d × o	5,00,000	4,90,000
Carrying cost = 2% × (q/ 2) × p	1,000	2,450
Total Cost = Purchase cost + ordering cost + carrying costs	5,02,000	4,92,850

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The discount offer is more profitable

(ii) The following details are available in respect of a Consignment of 1,250 kgs. of materials 'X':

- Invoice price-₹20 per kg.
 - Excise duty-25% of invoice price.
 - Sales Tax-8% on Invoice price including Excise Duty
 - Trade discount-10% on Invoice price
 - Insurance-1% of aggregate net price
 - Delivery charges-₹250
 - Cost of containers @₹60 per container for 50 kg. of material. Rebate is allowed @ ₹40 per container if returned within six weeks, which is a normal feature.
 - One container load of material was rejected on inspection and not accepted.
 - Cost of unloading and handling @ 0.25% of the cost of materials ultimately accepted.
- On the basis of above you are required to find out the landed cost per kg. of material 'X'.

[8]

Answer:

Computation of landed cost of Material 'X'

		Total cost for 1,250 kg in ₹	Cost per kg. in ₹
	Invoice price	25,000.00	20.00
Add:	Excise Duty (25,000×25%)	6,250.00	5.00
		31,250.00	25.00
Add:	Sales Tax (31,250×8%)	2,500.00	2.00
		33,750.00	27.00
Less:	Trade Discount @ 10% on invoice price	2,500.00	2.00
		31,250.00	25.00
Add:	Insurance @ 1% on above	312.50	0.25
		31,562.50	25.25
Add:	Delivery Charges	250.00	0.20
	Cost of container @ ₹60 for 50Kg.	1,500.00	1.20
		33,312.50	26.65
Less:	Cost of material returned*	1,332.50	-----
		31,980.00	26.65#
Add:	Cost of handling @0.25%	79.95	0.07#
		32,059.95	26.72#
Less:	Credit for container returnable @	960.00	0.80#
	Total landed cost	31,099.95	25.92#

*1 Container of 50kg. rejected. (33,312÷1,250)×50	=₹1,332.50
@Total consignment 1,250 kg. less 50 kg. (1 container returned)	=1,200 kg.
Credit (₹40÷50)×1,200kg	=₹960
#Per unit cost is determined by dividing 1,200kg. and not by 1,250 kg. as 1 container of 50kg. was returned.	

(b)

(i) A company produces a single product in three sizes X, Y and Z. Prepare a statement showing the selling and distribution expenses apportioned over these three sizes, on the bases indicated, and express the total apportioned to each size as:

- I. cost per unit sold, and
- II. a percentage of sales turnover.

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The expenses and bases of apportionment are:

Expenses	Amount (₹)	Basis of apportionment
Sales salaries	20,000	Direct charge
Sales commission	60,000	Sales turnover
Sales office expenses	20,960	Number of orders
Advertising : Specific	2,20,000	Direct charge
General	50,000	Sales turnover
Packing	30,000	Size of product
Delivery expenses	40,000	Size of product
Warehouse expenses	10,000	Size of product
Credit Collection expenses	12,960	Number of orders

Data relating to the three sizes are as follows:

	Total	X	Y	Z
No. of salesmen, all paid same salary	20	8	10	2
Number of orders	1,600	700	800	100
% of specific advertising	100	30	40	30
Number of units sold	8,240	3,440	3,200	1,600
Sales turnover	₹20,00,000	5,80,000	8,00,000	6,20,000
Capacity in cu ft per unit		5	8	17

[5+5]

Answer:

Comparative Statement of Costs

Items of Expenses	Basis of apportionment	Total	Production sizes		
			X ₹	Y ₹	Z ₹
Sales salaries	No. of salesmen	20,000	8,000	10,000	2,000
Sales commission	3% of sales	60,000	17,400	24,000	18,600
Sales office expenses	Number of orders	20,960	9,170	10,480	1,310
Advertising:					
Specific	Direct (3:4: 3)	2,20,000	66,000	88,000	66,000
General	Sales value	50,000	14,500	20,000	15,500
Packing	Cubic capacity of units sold (17,200 : 25,600 : 27,200)	30,000	7,371	10,971	11,658
Delivery expenses	"	40,000	9,829	14,628	15,543
Warehouse expenses	"	10,000	2,457	3,657	3,886
Credit Collection	No of orders	12,960	5,670	6,480	810
Total		4,63,920	1,40,397	1,88,216	1,35,307

	Total	X	Y	Z
Cost as apportioned (₹)	4,63,920	1,40,397	1,88,216	1,35,307
Units sold	8,240	3,440	3,200	1,600
I. ∴ Cost per unit sold (₹)	56.3	40.8	58.8	84.6
Sales value ('000s) (₹)	2,000	580	800	620
II. Cost of percentage of sales value	23.2%	24.2%	23.5%	21.8%

Notes:

- Total sales commission: ₹60,000
- Total sales: ₹20,00,000

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$$\% \text{ of sales} = \frac{60,000}{20,00,000} \times 100 = 3\%$$

➤ Cubic capacity of units sold:

$$X : 3,440 \times 5 = 17,200$$

$$Y : 3,200 \times 8 = 25,600$$

$$Z : 1,600 \times 17 = \underline{27,200}$$

$$\underline{70,000}$$

(ii) Distinguish between “Incentives to indirect workers” and “Indirect incentives to direct workers”. **[6]**

Answer:

Incentive schemes for workers are made to motivate workers for increasing output and quality production, saving time, reducing labour turnover and building sense of belonging. Obviously, these schemes focus on performance of workers. While performance of direct workers is easy to measure, that of auxiliary or indirect staff is not. Accordingly, incentive schemes differ between direct workers and indirect workers.

Incentive schemes for indirect workers include:

- Bonus to foremen and supervisors based on output, saving in time, quality improvement, reduction in scrap, etc.
- Bonus to repairs and maintenance staff for routine and repetitive jobs, based on reduction in number of complaints or breakdown.
- Bonus to stores staff, based on the value of materials handled or the number of requisitions per period.

Indirect Incentives to direct workers include:

- Monetary schemes like profit sharing, co-partnership, co-ownership;
- Non-monetary schemes like education and training facilities, health and safety devices, facilities for sports and housing, subsidized canteen and purchase coupon, pension, creation of sick and benevolent funds, arrangement of tour programs etc.

(c)

(i) The production department of factory furnishes the following information for the month of March 2015:

Materials used	₹2,50,020
Direct wages	₹2,08,350
Overheads	₹1,66,680
Labour hours worked	1,66,680
Hours of machine operation	1,38,900
For an order executed by the department during a particular period, the relevant information was as under:	
Materials used	₹27,78,000
Direct Wages	₹14,81,600
Labour hours worked	14,816
Machine hours worked	11,112

Calculate the overhead charges chargeable to the job by the following methods:

- I. Direct materials cost percentage rate
- II. Labour hour rate; and
- III. Machine hour rate

[6]

Answer:

I. Direct material cost percentage rate = (overheads/ direct material) X 100	
= (₹1,66,680 / 2,50,020) X 100	= 66.67%

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Materials used on the order ₹27,78,000 so overhead will be @ 66.67% ₹18,52,000.	
II. Labour hour rate=Overhead/Direct labour hours	
=1,66,680/ 1,66,680	=Re.1
Overheads will be @ Re.1=14,816 hrs X 1=₹14,816	
III. Machine hour rate=Overhead/Machine hours	
=₹1,66,680/1,38,900	=₹1.2
Overheads will be ₹1.2 per hour X 11,112 hours=₹13,334.4	

- (ii) An engineering company produces a standard metallic product. There are three processes - Foundry, Machining and Assembly. 130 tonnes of raw material at ₹500 per tonne were issued to Foundry. The yield at the Foundry is 90% (both standard and actual). The normal and actual yield at the Machining Process is 95%. There is no loss in the Assembly Process. You may consider the losses as occurring at the end of the respective processes. The other details are as follows:

Process	Direct Labour	Overheads
Foundry	200 hours at ₹100 per hour	₹150 per labour hour
Machining	100 hours at ₹50 per hour	₹ 200 per labour hour
Assembly	100 hours at ₹150 per hour	₹100 per labour hour

Prepare a Cost Sheet showing the element wise cost of output and cost per tonne of output.

[8]

Answer:

Raw material input	130	117	111.15
Loss	13	5.85	0
Output	117	111.15	111.15

Material Cost 500/tonne of input to foundry

Elements of Cost	Cost of total output	Cost/tonne of output
Raw Material 130 x 500	65,000	584.80
Labour Foundry: 200 hrs x 100 ₹/hr	20,000	179.94
M/cng: 100 hrs @ 50/hr	5,000	44.98
Assembly: 100 hrs @ 150/hr	15,000	134.95
Subtotal - Labour	40,000	359.87
Overheads:		
Foundry 200 hrs @ 150/hr	30,000	269.91
M/ cng: 100 hrs @ 200/hr	20,000	179.94
Assembly : 100 hrs @100/hr	10,000	89.97
Subtotal – Overheads	60,000	539.81
Total Cost	1,65,000	1,484.48

- (iii) State the treatment of Market Research the in the Cost Accounts.

[2]

Answer:

Treatment of Market Research expenses in Cost Records:

Many times organizations appoint professional bodies or conduct by themselves a study of potential market for their products. This study is aimed at finding the customer's needs, their habits, changing market for the products, technological changes in the product, competition etc., such expenses are to be treated as a part of Sales and Distributive Costs.

(d)

- (i) The details of present output of a manufacturing department are given below:

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Average output per week from 160 employees	48,000 units
Saleable value of output	₹6,00,000
Contribution made by output towards fixed expenses and profit	₹2,40,000

The Board of Directors plans to introduce more mechanization into the department at a capital cost of ₹1,60,000. The effect of this will be to reduce the number of employees to 120, and increasing the output per individual employees by 60%.

To provide the necessary incentive to achieve the increased output, the Board intends to offer a 1% increase on the piece work rate of ₹1 per unit for every 2% increase in average individual output achieved.

To sell the increased output, it will be necessary to decrease the selling price by 2%.

Calculate the extra weekly contribution resulting from the proposed change and evaluate for the Board's information, the desirability of introducing the change. [10]

Answer:

$$\text{Average output per employee} = \frac{48,000 \text{ units}}{160 \text{ employees}} = 300 \text{ units}$$

$$\text{Planned output per employee} = 300 \text{ units} \times 160\% = 480 \text{ units}$$

$$\text{Total output per week as per plan} = 480 \text{ units} \times 120 \text{ employee} = 57,600 \text{ units}$$

$$\text{Existing piece work rate} = ₹1 \text{ per unit}$$

$$\text{New piece work rate} = ₹1 + \frac{60\%}{2} \times ₹1 = ₹1.30$$

$$\text{Existing selling price per unit} = \frac{₹6,00,000}{48,000 \text{ units}} = ₹12.50$$

$$\text{New selling price per unit} = ₹12.50 \times 98\% = ₹12.25$$

$$\begin{aligned} \text{Existing total variable cost} &= \text{Sales} - \text{Contribution} \\ &= ₹6,00,000 - ₹2,40,000 \\ &= ₹3,60,000 \end{aligned}$$

$$\begin{aligned} \text{Existing material cost} &= \text{Total variable cost} - \text{Labour cost} \\ &= ₹3,60,000 - (₹1 \text{ per unit} \times 48,000 \text{ units}) \\ &= ₹3,12,000 \end{aligned}$$

$$\text{Existing, material cost per unit} = \frac{₹3,12,000}{48,000 \text{ units}} = ₹6.50$$

$$\begin{aligned} \text{New variable cost per unit} &= \text{Material cost per unit} + \text{New labour cost per unit} \\ &= ₹6.50 + ₹1.30 = ₹7.80 \end{aligned}$$

$$\begin{aligned} \text{New total variable cost} &= ₹7.80 \text{ per unit} \times 57,600 \text{ units} \\ &= ₹4,49,280 \end{aligned}$$

$$\begin{aligned} \text{New saleable value of the output} &= ₹12.25 \text{ per unit} \times 57,600 \text{ units} \\ &= ₹7,05,600 \end{aligned}$$

$$\begin{aligned} \text{New contribution of the output} &= ₹7,05,600 - ₹4,49,280 \\ &= ₹2,56,320 \end{aligned}$$

$$\begin{aligned} \text{Increase in contribution} &= ₹2,56,320 - ₹2,40,000 \\ &= ₹16,320 \end{aligned}$$

Comments: The proposal should be accepted since the contribution per week has increased.

Note: Capital cost of mechanization has been ignored because the useful life and salvage value of the machine have not been given.

(ii) Explain the methods of disposal of under /over absorbed overheads.

[4]

Answer:

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Over absorption means that overheads absorbed in the production are more than the actual overheads. In other words, if actual expenses fall short of the amount absorbed, there is said to be over absorption of overheads. For example, if during the month of March 2014, overheads absorbed are ₹30,000 and the actual overheads are ₹29,500, there is an over absorption to the extent of ₹500.

Under absorption means that the overheads absorbed in the production are less than the actual overheads. In other words, if the actual expenses exceeds the amount of overheads absorbed in production, this is a case of under absorption.

For example, if overheads absorbed are ₹11,000 and the actual overheads are ₹12,000, there is an under absorption to the extent of ₹1,000.

Treatment: The under or over absorbed overheads may be disposed off in any of the following ways:

- Write off to Costing Profit and Loss Account
- Carry forward to the next accounting period
- Use of Supplementary Rates.

(iii) State the objective of Cost Accounting.

[2]

Answer:

The following are the main objectives of Cost Accounting:

- To ascertain the Costs under different situations using different techniques and systems of costing
- To determine the selling prices under different circumstances
- To determine and control efficiency by setting standards for Materials, Labour and Overheads
- To determine the value of closing inventory for preparing financial statements of the concern.
- To provide a basis for operating policies which may be determination of Cost Volume relationship, whether to close or operate at a loss, whether to manufacture or buy from market, whether to continue the existing method of production or to replace it by a more improved method of production etc.

3. (Answer any two questions)

[2×16=32]

(a)

(i) The following information has been extracted from the records of a Company :

Product cost sheet	₹/unit
Raw materials	45
Direct labour	20
Overheads	40
Total	105
Profit	20
Selling price	125

- Raw materials are in stock on an average of two months.
- The materials are in process on an average for 4 weeks. The degree of completion is 50%.
- Finished goods stock on an average is for one month.
- Time lag in payment of wages and overheads is 1 ½ weeks.
- Time lag in receipt of proceeds from debtors is 2 months.
- Credit allowed by suppliers is one month.
- 20% of the output is sold against cash.
- The company expects to keep a Cash balance of ₹1,00,000.

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- Take 52 weeks per annum.

The Company is poised for a manufacture of ₹ 1,44,000 units in the year.

You are required to prepare a statement showing the Working Capital requirements of the Company. [8]

Answer:

Working capital requirement

	₹	₹
Current Assets :		
Raw Material Stock [₹ 64,80,000 × 2/12]	10,80,000	
Work in Process [₹1,51,20,000 × 4/52 × 50%]	5,81,538	
Finished goods [₹1,51,20,000 × 1/12]	12,60,000	
Debtors [₹ 30,00,000 × 80%]	24,00,000	
Cash in hand	1,00,000	54,21,538
Current Liabilities :		
Creditors for materials [₹ 64,80,000 × 1/12]	5,40,000	
Creditors for wages & overheads [₹ 86,40,000 × 1.5/52]	2,49,231	7,89,231
Working Capital Requirement		46,32,307

Working Notes:

➤ Total cost

Annual raw materials requirements = 1,44,000 units × ₹ 45 / unit = ₹64,80,000

Annual direct labour cost = 1,44,000 units × ₹20 / unit = ₹ 28,80,000

Annual Overhead cost = 1,44,000 units × ₹40 / unit = ₹57,60,000

₹1,51,20,000

➤ Sales for 2 months = 1,44,000 units × ₹125/unit × 2/12 = ₹30,00,000

(ii) Explain the procedure involved in the 'Forfeiting' Financial Service. [4]

Answer:

Forfeiting Financial Service

The term "a forfait" in French means, "relinquish a right". It refers to the exporter relinquishing his right to a receivable due at a future date in exchange for immediate cash payment, at an agreed discount, passing all risks and responsibilities for collecting the debt to the forfeiter.

It is the discounting of international trade receivable on a 100% "Without recourse" basis. "Without recourse" means the client gets full credit protection and all the components of service, i.e., short-term finance, administration of sales ledger are available to the client.

Forfeiting transforms the supplier's credit granted to the importer into cash transaction for the exporter protecting him completely from all the risks associated with selling overseas on credit. It effectively transforms a credit sale into a cash sale.

Procedure

- The exporter sells the goods to the importer on a deferred payment basis spread over 3-5 years.
- The importer draws a series of promissory notes in favour of the exporter for the payments to be made inclusive of interest charges.
- Such promissory notes are availed or guaranteed by a reputed international bank which can also be the importer's banker, (it is endorsed on the promissory note by the guaranteeing bank that it covers any default of payment of the buyer).
- The exporter now sells the availed notes to a forfeiter (which may be the exporter's

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banker) at a discount without recourse.

- The forfeiter may hold these notes till maturity or sell them to group of investors interested in taking up such high-yielding unsecured paper.



**Graphical
representation of

Forfeiting**

- 1 = Promissory notes sent for availing to the importer's banker
- 2 = Availed notes returned to the importer
- 3 = Availed notes sent to exporter
- 4 = Availed notes sold at a discount to a forfeiter on a non - recourse basis
- 5 = Exporter obtains finance
- 6 = Forfeiter holds the notes till maturity or sells the short-term paper either to a group of investors or to investors in the secondary market.

(iii) Explain the term Foreign Currency Convertible Bonds (FCCBs).

[4]

Answer:

Foreign Currency Convertible Bonds (FCCBs)

The FCCB means bonds issued in accordance with the relevant scheme and subscribed by a non-resident in foreign currency and convertible into ordinary shares of the issuing company in any manner, either in whole or in part, on the basis of any equity related warrants attached to debt instruments. The FCCBs are unsecured; carry a fixed rate of interest and an option for conversion into a fixed number of equity, shares of the issuer company. Interest and redemption price (if conversion option is not exercised) is payable in dollars. Interest rates are very low by Indian domestic standards. FCCBs are denominated in any freely convertible foreign currency.

FCCBs have been popular with issuers. Local debt markets can be restrictive in nature with comparatively short maturities and high interest rates. On the other hand, straight equity-issue may cause a dilution in earnings, and certainly a dilution in control, which many shareholders, especially major family shareholders, would find unacceptable. Thus, the low coupon security which defers shareholders dilution for several years can be alternative to an issuer. Foreign investors also prefer FCCBs because of the Dollar denominated servicing, the conversion option and the arbitrage opportunities presented by conversion of the FCCBs into equity at a discount on prevailing India market price.

(b)

(i) X Ltd. is foreseeing a growth rate of 14% per annum in the next 2 years. The growth rate is likely to fall to 12 % for the third year and fourth year. After that the growth rate is expected to stabilize at 10% per annum. If the last dividend paid was ₹2.25 per share and the investors' required rate of return is 15%, find out the intrinsic value per share of X Ltd. as of date. You may use the following table:

Years	0	1	2	3	4	5
Discounting Factor at 15%	1	0.87	0.76	0.66	0.57	0.50

[10]

Answer:

Present value of dividend stream for first 2 years.

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$$₹ 2.25 (1.14) \times .87 + 2.25 (1.14)^2 \times .76$$

$$₹ 2.565 \times .87 + 2.924 \times .76$$

$$₹ 2.232 + 2.222 = 4.454$$

(A)

Present value of dividend stream for next 2 years

$$₹ 2.924 (1.12) \times .66 + 2.924 (1.12)^2 \times .57$$

$$₹ 3.27 \times .66 + 3.67 \times .57$$

$$₹ 2.158 + 2.091 = 4.249$$

(B)

Market value of equity share at the end of 4th year computed by using the constant dividend growth model would be:

$$P_4 = \frac{D_5}{K_s - g_n}$$

Where D_5 is dividend in the fifth year, g_n is the growth rate and K_s is required rate of return.

$$\text{Now } D_5 = D_4 (1 + g_n)$$

$$\therefore D_5 = ₹3.67 (1 + 0.10)$$

$$= ₹4.037$$

$$\therefore P_4 = ₹4.037 / (.15 - .10) = 4.037 / .05 = ₹80.74$$

$$\text{Present market value of } P_4 = 80.74 \times .57 = ₹46.022$$

(C)

Hence, the intrinsic value per share of X Ltd. would be

$$A + B + C \text{ i.e. } ₹4.454 + 4.249 + 46.022 = ₹54.725$$

(ii) Discuss about the Venture Capital.

[6]

Answer:

Venture Capital is a form of equity financing especially designed for funding high risk and high reward projects.

There is a common perception that Venture Capital is a means of financing high technology projects. However, Venture Capital is investment of long term financial made in:

- Ventures promoted by technically or professionally qualified but unproven entrepreneurs, or
- Ventures seeking to harness commercially unproven technology, or
- High risk ventures.

The term 'Venture Capital' represents financial investment in a highly risky project with the objective of earning a high rate of return.

Modes of Finance by Venture Capitalists

➤ Equity

Most of the venture capital funds provide financial support to entrepreneurs in the form of equity by financing 49% of the total equity. This is to ensure that the ownership and overall control remains with the entrepreneur. Since there is a great uncertainty about the generation of cash inflows in the initial years, equity financing is the safest mode of financing. A debt instrument on the other hand requires periodical servicing of debt.

➤ Conditional Loan

From a venture capitalist point of view, equity is an unsecured instrument hence a less preferable option than a secured debt instrument. A conditional loan usually involves either no interest at all or a coupon payment at nominal rate. In addition, a royalty at agreed rates payable to the lender on the sales turnover. As the units picks up in sales levels, the interest rate are increased and royalty amounts are decreased.

➤ Convertible Loans

The convertible loan is subordinate to all other loans which may be converted into equity if interest payments are not made within agreed time limit.

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(c)

- (i) XYZ Ltd. is considering two mutually- exclusive projects. Both require an initial cash outlay ₹10,000 each for machinery and have a life of 5 Years. The Company's required rate of return is 10% and it pays tax at 30%. The projects will be depreciated on a straight-line basis. The net cash flows (before taxes) expected to be generated by the projects and the present value (PV) factor (at 10%) are as follows:

	Year				
	1	2	3	4	5
	₹	₹	₹	₹	₹
Project 1	4,000	4,000	4,000	4,000	4,000
Project 2	6,000	3,000	2,000	5,000	5,000
PV factor (at 10%)	0.909	0.826	0.751	0.683	0.621

You are required to calculate

- I. The Pay Back Period of each project;
- II. The NPV and the profitability index of each project. [5+5]

Answer:

CALCULATION OF NET INCOME AND NET CASH FLOW AFTER TAXES:

Project – 1

Year	Cash Flow before tax (₹)	Depreciation (₹)	Income before tax (₹)	Tax (₹)	Net Income (₹)	Net cash Flow after tax (₹)
1	4,000	2,000	2,000	600	1,400	3,400
2	4,000	2,000	2,000	600	1,400	3,400
3	4,000	2,000	2,000	600	1,400	3,400
4	4,000	2,000	2,000	600	1,400	3,400
5	4,000	2,000	2,000	600	1,400	3,400

Project – 2

Year	Cash Flow before tax (₹)	Depreciation (₹)	Income before tax (₹)	Tax (₹)	Net Income (₹)	Net cash Flow after tax (₹)
1	6,000	2,000	4,000	1,200	2,800	4,800
2	3,000	2,000	1,000	300	700	2,700
3	2,000	2,000	-	-	-	2,000
4	5,000	2,000	3,000	900	2,100	4,100
5	5,000	2,000	3,000	900	2,100	4,100

I. Pay Back Period:

PROJECT – 1

Cash outlay ₹10,000

Cash flow p.a. ₹3,400

Payback period: $10,000 / 3,400 = 2.94$ years

PROJECT – 2

Cash inflows: ₹ (4,800 + 2,700 + 2,000) = ₹9,500 in 3rd Years.

4th Year Balance - ₹500.

Therefore, $500/2,000 = 0.25$ Years

Payback period = 3 Years + 0.25 Years = 3.25 years.

II. Net Present value (NPV):

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PROJECT – 1:

Present value = $3,400 \times 3.790$ = ₹ 12,886
($0.909 + 0.826 + 0.751 + 0.683 + 0.621$)
Less: Initial cash outlay = ₹10,000
Net Present value (NVP) = ₹2,886

PROFITABILITY INDEX = $12,886/10000 = 1.289$

PROJECT – 2:

Net cash flow after tax (₹)	PV factor	Present Value (₹)
4,800	0.909	4363.20
2,700	0.826	2230.20
2,000	0.751	1502.00
4,100	0.683	2800.30
4,100	0.621	2546.10
		13,441.80
Less: Initial cash outlay		10,000.00
Net Present value (NPV)		3,441.80

PROFITABILITY INDEX = $13,441.8/10,000 = 1.344$

(ii) Write the basic propositions and the assumptions of the MM Approach.

[2+4]

Answer:

Basic Propositions:

M -M Hypothesis can be explained in terms of two propositions of Modigliani and Miller. They are:

- The overall cost of capital (K_o) and the value of the firm are independent of the capital structure. The total market value of the firm is given by capitalizing the expected net operating income by the rate appropriate for that risk class.
- The financial risk increases with more debt content in the capital structure. As a result cost of equity (K_e) increases in a manner to offset exactly the low-cost advantage of debt. Hence, overall cost of capital remains the same.

Assumptions of the MM Approach:

- There is a perfect capital market. Capital markets are perfect when
 - Investors are free to buy and sell securities,
 - They can borrow funds without restriction at the same terms as the firms do,
 - They behave rationally,
 - They are well informed, and
 - There are no transaction costs.
- Firms can be classified into homogeneous risk classes. All the firms in the same risk class will have the same degree of financial risk.
- All investors have the same expectation of a firm's net operating income (EBIT).
- The dividend payout ratio is 100%, which means there are no retained earnings.
- There are no corporate taxes. This assumption has been removed later.