PAPER – 3 : COST ACCOUNTING AND FINANCIAL MANAGEMENT

*Question No. **1** is compulsory.*

*Attempt any **five** questions out of the remaining **six** questions.*

In case, any candidate answers extra question(s)/ sub-question(s) over and above the required number, then only the requisite number of questions first answered in the answer book shall be valued and subsequent extra question(s) answered shall be ignored.

Working notes should form part of the answer.

Question 1

Answer the following:

(a) *A skilled worker is paid a guaranteed wage rate of ₹ 150.00 per hour. The standard time allowed for a job is 50 hours. He gets an effective hourly rate of wages of ₹180.00 under Rowan Incentive Plan due to saving in time. For the same saving in time, calculate the hourly rate of wages he will get, if he is placed under Halsey Premium Scheme (50%).*

(b) *Premier Construction Company undertook a contract for ₹ 5,00,000 on 1st August, 2016. On 31st March, 2017 when the accounts were closed, the following information was available:*

Cost of work uncertified	*₹ 1,20,000*
Cash received	*₹ 2,50,000 (80 of work certified)*
Profit transferred to costing Profit and Loss account at the end of the year on Incomplete contract	*₹ 80,000*

Calculate:

(i) The value of work in progress certified

(ii) Degree of completion of contract

(iii) Notional Profit and

(iv) Cost of contract as on 31-03-2017

(c) *Mr. B will require ₹ 30 lakhs after 10 years from now. He wants to ascertain an amount to be invested in a fund which pays interest @ 10% per annum.*

Following options are available to him:

(i) to make annual payment into the fund at the end of each year.

(ii) to invest a lumpsum amount in the fund at the end of the year.

(iii) to make annual payment into the fund in the beginning of each year.

Find out the amount to be invested under each of the options given above.

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Factors are as under:

FVIF/CVF (10%, 10) = 2.594

FVIFA/CVFA (10%,10) = 15.937

PVIF/PVF (I0%, 10) = 0.386

PVIFA/PVFA (10%,10) = 6.145

(d) *The X Ltd. is willing to raise funds for its new project which requires an investment of ₹ 84 lakhs. The company has two options:*

Option 1: To issue Equity Shares (₹ 10 each) only

Option II: To avail term loan at an interest rate of 12%. But in this case, as insisted by the financing agencies, the company will have to maintain a debt equity proportion of 2:1.

The corporate tax rate is 30%.

Find out the point of indifference for the project. ***(4 x 5 = 20 Marks)***

Answer

(a) Increase in hourly rate of wages under Rowan Plan is ₹ 30 i.e. (₹180 – ₹ 150)

$\frac{\text{Time Saved}}{\text{Time Allowed}} \times ₹150 = ₹30$ (Please refer Working Note)

Or, $\frac{\text{Time Saved}}{50 \text{ hours}} \times ₹150 = ₹30$

Or, Time saved = $\frac{1,500}{150}$ = 10 hours

Therefore, Time Taken is 40 hours i.e. (50 hours – 10 hours)

Effective Hourly Rate under Halsey System:

Time saved	= 10 hours	
Bonus @ 50%	= 10 hours × 50% × ₹ 150	= ₹ 750
Total Wages	= (₹150 × 40 hours + ₹ 750)	= ₹ 6,750
Effective Hourly Rate	= ₹ 6,750 ÷ 40 hours	= ₹ 168.75

Working Note:

$$\text{Effective hourly rate} = \frac{(\text{Time Taken} \times \text{Rate per hour}) + \frac{\text{Time Taken}}{\text{Time Allowed}} \times \text{Time Saved} \times \text{Rate per hour}}{\text{Time Taken}}$$

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$$\text{Or, } ₹\ 180 = \frac{\text{Time Taken} \times \text{Rate per hour}}{\text{Time Taken}} + \frac{\frac{\text{Time Taken}}{\text{Time Allowed}} \times \text{Time Saved} \times \text{Rate per hour}}{\text{Time Taken}}$$

$$\text{Or, } ₹\ 180 - \frac{\text{Time Taken} \times \text{Rate per hour}}{\text{Time Taken}} = \frac{\text{Time Taken}}{\text{Time Allowed}} \times \text{Time Saved} \times \text{Rate per hour} \times \frac{1}{\text{Time Taken}}$$

$$\text{Or, } ₹\ 180 - ₹\ 150 = \frac{\text{Time Saved}}{\text{Time Allowed}} \times ₹\ 150$$

(b) (i) Value of work in progress certified:

Since, Cash Received of ₹ 2,50,000 is 80% of work certified

Therefore, Value of work in progress certified = $\frac{₹\ 2,50,000}{80\%}$ = ₹ 3,12,500

(ii) Degree of completion of contract:

$$= \frac{\text{Value of work certified}}{\text{Value of contract}} \times 100 = \frac{₹\ 3,12,500}{₹\ 5,00,000} \times 100 = 62.5\%$$

(iii) Notional Profit:

$$\text{Profit transferred to Costing Profit \& Loss A/c} = \frac{2}{3} \times \text{Notional Profit} \times \frac{\text{Cash Received}}{\text{Value of work certified}}$$

(Since contract completion is 62.5% i.e. more than 50%)

$$\text{Or, } ₹\ 80,000 = \frac{2}{3} \times \text{Notional Profit} \times \frac{₹\ 2,50,000}{₹\ 3,12,500}$$

Notional Profit = ₹ 1,50,000

(iv) Cost of contract as on 31-03-2017:

= Value of Work certified + Cost of work uncertified – Notional profit

= ₹ 3,12,500 + ₹1,20,000 – ₹ 1,50,000

= ₹ 2,82,500

(c) Future Value = ₹ 30,00,000

Interest (i) = 10% p.a.

Period (n) = 10 years

(i) To make annual payment into the fund at the end of each year:

Future Value = Annual Payment × $(FVIFA_{n, i})$ or Annual Payment × $\left(\frac{(1+i)^n - 1}{i}\right)$

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₹ 30,00,000 = A (FVIFA $_{10\%, 10}$)

Or, A = $\frac{\text{Rs.}30,00,000}{15.937}$ = ₹ 1,88,241.2

(ii) To invest a lumpsum amount in the fund at the end of the year:

Future Value = Amount × ($FVIF_{10\%, 10}$) or Amount × $(1+ 0.1)^{10}$

Or, A = $\frac{₹\ 30,00,000}{2.594}$ = ₹ 11,56,515

(iii) To make annual payment into the fund at the beginning of each year:

Future Value = Annual Payment × (FVIFA $_{n, i}$) × (1+i)

₹ 30,00,000 = A (FVIFA $_{10\%, 10}$) × (1+ 0.1)

Or, A = $\frac{₹\ 30,00,000}{15.937 \times 1.1}$ = $\frac{₹\ 30,00,000}{17.531}$ = ₹ 1,71,125 (approx.)

(d) Workings Notes

1. Capital Structure

Option-I: 100% equity capital i.e. ₹ 84,00,000

8,40,000 equity shares @ ₹ 10 each

Option-II: Equity capital = ₹ 84,00,000/3 × 1 = ₹ 28,00,000

2,80,000 equity shares @ ₹ 10 each

12% Term Loan = ₹ 84,00,000/3 × 2 = ₹ 56,00,000

2. Interest on Term loan

₹ 56,00,000 × 12% = ₹ 6,72,000

Computation of indifference point between Option-I & Option-II

$EPS_{Option\text{-}I} = EPS_{Option\text{-}II}$

Or, $\frac{EBIT(1-t)}{\text{No.of equity shares}} = \frac{(EBIT - \text{Interest})(1-t)}{\text{No.of equity shares}}$

Or, $\frac{EBIT(1-0.3)}{8,40,000\ \text{shares}} = \frac{(EBIT - ₹\ 6,72,000)(1-0.3)}{2,80,000\ \text{shares}}$

Or, $\frac{0.7EBIT}{3} = \frac{0.7EBIT - ₹\ 4,70,400}{1}$

Or, 2.1 EBIT – 14,11,200 = 0.7 EBIT

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Or, 1.4 EBIT = $\frac{14,11,200}{1.4}$

Or, EBIT = ₹ 10,08,000

So, Point of Indifference for the project is Rs 10,08,000/-

Question 2

(a) *A Ltd. produces 'M' as a main product and gets two by products - 'P' and 'Q' in the course of processing.*

Following information are available for the month of October, 2017:

	M	***P***	***Q***
Cost after separation	*-*	*₹ 60,000*	*₹ 30,000*
No. of units produced	*4500*	*2500*	*1500*
Selling price (per unit)	*₹ 170*	*₹ 80*	*₹ 50*
Estimated Net profit to sales	*-*	*30%*	*25%*

The joint cost of manufacture upto separation point amounts to ₹ 2,50,000.

Selling expenses amounting to ₹ 85,000 are to be apportioned to the three products in the ratio of sales units.

There is no opening and closing stock.

Prepare the statement showing:

(i) Allocation of joint cost.

(ii) Product wise over all profitability and

(iii) Advise the company regarding results if the by product ' P' is not further processed and is sold at the point of separation at ₹ 60 per unit without incurring selling expenses. ***(8 Marks)***

(b) *A firm can make investment in either of the following two projects. The firm anticipates its cost of capital to be 10. The pre-tax cash flows of the projects for five years are as follows:*

Year	*0*	*1*	*2*	*3*	*4*	*5*
Project A (₹)	*(2,00,000)*	*35,000*	*80,000*	*90,000*	*75,000*	*20,000*
Project 8 (₹)	*(2,00,000)*	*21,8000*	*10,000*	*10,000*	*4000*	*3000*

Ignore Taxation.

An amount of ₹35000 will be spent on account of sales promotion in year 3 in case of Project A. This has not been taken into account in calculation of pre-tax cash flows.

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The discount factors are as under:

Year	*0*	*1*	*2*	*3*	*4*	*5*
PVF (10%)	*1*	*0.91*	*0.83*	*0.75*	*0.68*	*0.62*

You are required to calculate for each project:

(i) The payback period

(ii) The discounted payback period

(iii) Desirability factor

(iv) Net Present Value ***(8 Marks)***

Answer

(a) (i) Statement showing allocation of Joint Cost

Particulars	**P**	**Q**
No. of units Produced	2,500	1,500
Selling Price Per unit (₹)	80	50
Sales Value (₹)	2,00,000	75,000
Less:Estimated Profit (P-30% & Q -25%)	(60,000)	(18,750)
Cost of Sales	1,40,000	56,250
Less: Selling Expenses (Refer Working note-1)	(25,000)	(15,000)
Cost of Production	1,15,000	41,250
Less:Cost after separation	(60,000)	(30,000)
Joint Cost allocated	55,000	11,250

(ii) Statement of Profitability

Particulars	**M (₹)**	**P (₹)**	**Q (₹)**
Sales Value (A)	7,65,000 (4,500 × ₹170)	2,00,000	75,000
Less: Joint Cost	1,83,750 (2,50,000-55,000- 11,250)	55,000	11,250
- Cost after separation	-	60,000	30,000
- Selling Expenses (Refer Working note-1)	45,000	25,000	15,000
(B)	2,28,750	1,40,000	56,250

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Profit	(A –B)	5,36,250	60,000	18,750
Overall Profit = ₹ 5,36,250 + ₹ 60,000 + ₹ 18,750 = ₹ 6,15,000				

(iii) If the by-product P is not further processed and is sold at the point of separation:

	Amount (₹)
Sales value at the point of separation (2,500 units × ₹ 60)	1,50,000
Less: Joint cost	55,000
Profit	95,000
Profit after further processing	60,000
Incremental Profit	35,000

If the by-product P is sold at the point of separation, it will give an additional profit of ₹ 35,000 to the company, hence, the company should sell by-product P without further processing.

Working Note:

1. Apportionment of Selling expenses among M, P and Q

Product M- $\frac{₹\ 85,000}{17} \times 9 = ₹\ 45,000$

By-product P- $\frac{₹\ 85,000}{17} \times 5 = ₹\ 25,000$

By-product Q- $\frac{₹\ 85,000}{17} \times 3 = ₹\ 15,000$

(b) Calculation of Present Value of cash flows

Year	PV factor @ 10%	Project A		Project B	
		Cash flows (₹)	Discounted Cash flows	Cash flows (₹)	Discounted Cash flows
0	1.00	(2,00,000)	(2,00,000)	(2,00,000)	(2,00,000)
1	0.91	35,000	31,850	2,18,000	1,98,380
2	0.83	80,000	66,400	10,000	8,300
3	0.75	55,000(90,000-35,000)	41,250	10,000	7,500
4	0.68	75,000	51,000	4,000	2,720

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5	0.62	20,000	12,400	3,000	1,860
Net Present Value			2,900		18,760

(i) The Payback period of the projects:

Project-A: The cumulative cash inflows upto year 3 is ₹1,70,000 and remaining amount required to equate the cash outflow is ₹ 30,000 i.e. (₹ 2,00,000 – ₹ 1,70,000) which will be recovered from year-4 cash inflow. Hence, Payback period will be calculated as below:

$$3 \text{ years} + \frac{₹\,30,000}{₹\,75,000} = 3.4 \text{ years Or } 3 \text{ years } 4.8 \text{ months Or } 3 \text{ years } 4 \text{ months and } 24 \text{ days}$$

Project-B: The cash inflow in year-1 is ₹2,18,000 and the amount required to equate the cash outflow is ₹ 2,00,000, which can be recovered in a period less than a year. Hence, Payback period will be calculated as below:

$$\frac{₹\,2,00,000}{₹\,2,18,000} = 0.917 \text{ years Or } 11 \text{ months}$$

(ii) Discounted Payback period for the projects:

Project-A: The cumulative discounted cash inflows upto year 4 is ₹1,90,500 and remaining amount required to equate the cash outflow is ₹ 9,500 i.e. (₹ 2,00,000 – ₹ 1,90,500) which will be recovered from year-5 cash inflow. Hence, Payback period will be calculated as below:

$$4 \text{ years} + \frac{₹\,9,500}{₹\,12,400} = 4.766 \text{ years Or } 4 \text{ years } 9.19 \text{ months Or } 4 \text{ years } 9 \text{ months and } 6 \text{ days}$$

Project-B: The cash inflow in year-1 is ₹1,98,380 and remaining amount required to equate the cash outflow is ₹ 1,620 i.e. (₹ 2,00,000 – ₹ 1,98,380) which will be recovered from year-2 cash inflow. Hence, Payback period will be calculated as below:

$$1 \text{ year} + \frac{₹1,620}{₹\ 8,300} = 1.195 \text{ years Or } 1 \text{ Year } 2.34 \text{ months Or } 1 \text{ Year } 2 \text{ months and } 10 \text{ days.}$$

(iii) Desirability factor of the projects

$$\text{Desirability Factor (Profitability Index)} = \frac{\text{Discounted value of Cash Inflows}}{\text{Discounted value of Cash Outflows}}$$

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Project A = $\frac{₹\,2,02,900}{₹\,2,00,000}$ = 1.01

Project B = $\frac{₹\,2,18,760}{₹\,2,00,000}$ = 1.09

(iv) Net Present Value (NPV) of the projects:

Please refer the above table.

Project A- ₹ 2,900

Project B- ₹ 18,760

Question 3

(a) *XYZ Limited produces an article and uses a mixture of material X and Y. The standard quantity and price of materials for one unit of output is as under:*

Material	*Quantity*	*Price (₹)*
X	*2000 KG*	*1.00 per kg.*
Y	*800 KG*	*1.50 per kg.*

During a period, 1500 units were produced. The actual consumption of materials and prices are given below:

Material	*Quantity*	*Price (₹)*
X	*31,00,000 kg*	*1.10 per kg.*
Y	*12,50,000 kg*	*1.60 per kg.*

Calculate:

(i) Standard cost for actual output

(ii) Material cost variance

(iii) Material Price variance

(iv) Material usage variance ***(8 Marks)***

(b) *The current credit sales of a firm is ₹ 15 lakhs and the firm still has an unutilized capacity. In order to boost its sales, the firm is willing to relax its credit policy.*

The firm proposes a new credit policy of 2/10 net 60 days as against the present policy of 1/10 net 45 days. The firm expects an increase in the sales by 12%. However, it is also expected that bad debts will go upto 2% of sales from 1.5%.

The contribution to sales ratio of the firm is 28%. The firm's tax rate is 30% and firm requires an after tax return of 15% on its investment.

Should the firm change the credit policy? ***(8 Marks)***

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Answer

(a)

(i) Standard cost for Actual output:

Material X = 1,500 units × 2,000 kg. × ₹ 1	= 30,00,000	
Material Y = 1,500 units × 800 kg. × ₹ 1.50	= 18,00,000	₹ 48,00,000

(ii) Material Cost Variance:

= Standard Cost for actual output – Actual Cost

= (SQ × SP) – (AQ × AP)

Material X = {30,00,000 - (31,00,000 kg. × ₹ 1.10)}		
= 30,00,000 – 34,10,000	= 4,10,000 (A)	
Material Y = {18,00,000 – (12,50,000 kg. × ₹ 1.60)}		
= 18,00,000 – 20,00,000	= 2,00,000 (A)	6,10,000 (A)

(iii) Material Price Variance:

= AQ (SP – AP)

Material X = 31,00,000 kg. (₹ 1.00 – ₹ 1.10)	= 3,10,000 (A)	
Material Y = 12,50,000 kg. (₹ 1.50 – ₹ 1.60)	= 1,25,000 (A)	4,35,000 (A)

(iv) Material Usage Variance:

= SP (SQ – AQ)

Material X = ₹ 1.00 {(1,500 × 2,000) – 31,00,000}		
= 30,00,000 – 31,00,000	= 1,00,000 (A)	
Material Y = ₹ 1.50 {(1,500 × 800) – 12,50,000}		
= ₹ 1.50 (12,00,000 – 12,50,000)	= 75,000 (A)	= 1,75,000 (A)

(b) Evaluation of Credit policies

Particulars	Present policy (₹)	Proposed policy (₹)
Credit Sales	15,00,000	16,80,000 (112% of 15,00,000)
Variable Cost (72%)	(10,80,000)	(12,09,600)
Contribution	4,20,000	4,70,400
Bad debt	(22,500) (15,00,000× 1.5%)	(33,600) (16,80,000 × 2%)
Profit Before Tax (PBT)	3,97,500	4,36,800

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Tax @ 30%	(1,19,250)	(1,31,040)
Profit After Tax (PAT)	2,78,250	3,05,760
Opportunity Cost (Refer working note)	(20,250)	(30,240)
Net Profit	2,58,000	2,75,520

In proposed scheme the net profit is more by ₹ 17,520 i.e. (₹ 2,75,520 – ₹ 2,58,000), hence, company should change the credit policy.

Working Note:

Opportunity Cost on Credit sales:

Present policy $= ₹10,80,000 \times \frac{15}{100} \times \frac{45\,days}{360\,days} = ₹\ 20,250$

Proposed policy $= ₹12,09,600 \times \frac{15}{100} \times \frac{60\,days}{360\,days} = ₹\ 30,240$

Assumption:

(i) Cash discount is not availed by the debtors.

(ii) Debtors are utilising full credit period for payment.

(iii) No. of days in a year is 360 days.

Question 4

(a) *A company, with 90% Capacity utilization, is manufacturing a product and makes a sale of ₹ 9,45,000 at ₹ 30 per unit. The cost data is as under:*

Materials - ₹ 9 .00 per unit

Labour - ₹ 7,00 per unit

Semi variable cost (including variable cost of ₹ 4.25 per unit) - ₹ 2,10,000.

Fixed cost is ₹ 94,500 upto 90% level of output (capacity). Beyond this, an additional amount of ₹ 15,000 will be incurred.

You are required to calculate:

(i) Level of output at break-even point

(ii) Number of units to be sold to earn a net income of 10% of sales

(iii) Level of output needed to earn a profit of ₹ 1,41,375 ***(8 Marks)***

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(b) *The following details of a company for the year ended 31st March, 2017 are given below:*

Operating leverage	*2:1*
Combined leverage	*2.5:1*
Fixed Cost excluding interest	*₹ 3.4 lakhs*
Sales	*₹ 50 lakhs*
8% Debentures of ₹ 100 each	*₹ 30.25 lakhs*
Equity Share Capital of ₹ 10 each	*34 lakhs*
Income Tax Rate	*30%*

Required:

(i) Calculate Financial Leverage

(ii) Calculate P/V ratio and Earning per Share (EPS)

(iii) If the company belongs to an industry, whose assets turnover is 1.5, does it have a high or low assets turnover?

(iv) At what level of sales, the Earning before Tax (EBT) of the company will be equal to zero? ***(8 Marks)***

Answer

(a) Working Note:

1. Current utilization 90% capacity and Turnover is ₹ 9,45,000

   No. of units = ₹9,45,000/₹30 = 31,500 units

Variable Cost per units:

Material	9.00
Labour cost	7.00
Variable overheads	4.25
Total Variable Cost	20.25
Selling price	30.00
Contribution per unit (Selling price – Variable Cost)	9.75

Calculation of Total Fixed Cost

Particulars	**(₹)**
Semi-variable cost	2,10,000
Less: Variable cost (31,500 units × ₹4.25)	1,33,875
Fixed Cost	76,125

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Add: Fixed cost upto 90% level	94,500
Total Fixed Cost	1,70,625

2. Present Profit:

Contribution (31,500 units at ₹ 9.75)	3,07,125
Less: Fixed cost	1,70,625
Profit	1,36,500

(i) Break-even point = Total Fixed Cost /Contribution per unit

= ₹1,70,625/ ₹ 9.75 = 17,500 Units

At 17,500 units, output level is = $\frac{17,500}{31,500} \times 90\% = 50\%$

So, at 50% activities level, this company reaches at BEP

(ii) Sales (Units) = $\frac{\text{Fixed Cost + Profit}}{\text{Contribution per unit}}$

10% of sales = 10% of ₹ 30 = ₹ 3 per unit profit.

Let us assume 'S' is the no. of units to be sold, hence profit will be 3S

So, S = $\frac{₹\,1,70,625 + 3S}{₹\,9.75}$

Or, 9.75 S = 1,70,625+3S

Or, S = 1,70,625 ÷ 6.75 = 25,278 units.

(iii) Sales (units) = $\frac{₹\,1,70,625 + 1,41,375}{₹\,9.75}$

= ₹3,12,000 ÷ ₹ 9.75 = 32,000 units

32,000 units is beyond 90% activity level. In such case, the fixed cost will be increased by ₹ 15,000 to ₹ 3,27,000.

Then, S = $\frac{₹\,3,27,000}{₹\,9.75} = 33,538$ units i.e. $\frac{33,538}{35,000} \times 100 = 95.82\%$ activity level.

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(b) (i) Financial leverage

Combined Leverage = Operating Leverage (OL) × Financial Leverage (FL)

2.5 = 2 × FL Or, FL = 1.25

Financial Leverage = 1.25

(ii) P/V Ratio and Earning per share (EPS)

$$\text{Operating leverage} = \frac{\text{Contribution(C)}}{\text{Contribution - Fixed Cost (FC)}} \times 100$$

$$2 = \frac{C}{C - 3,40,000} \text{ Or, } C = 2\,(C - 3,40,000)$$

Or, C = 2C – 6,80,000 Or, Contribution = ₹ 6,80,000

$$\text{Now, P/V ratio} = \frac{\text{Contribution (C)}}{\text{Sales (S)}} \times 100 = \frac{6,80,000}{50,00,000} \times 100 = 13.6\%$$

Therefore, P/V Ratio = 13.6%

EBT = Sales – Variable Cost – Fixed Cost – Interest

= ₹50,00,000 – ₹ 50,00,000 (1-0.136) – ₹3,40,000 – (8% × ₹30,25,000)

= ₹ 50,00,000 – ₹ 43,20,000 – ₹ 3,40,000 – ₹ 2,42,000

= ₹ 98,000

PAT = EBT(1-T)

= ₹ 98,000(1-0.3) = ₹ 68,600

$$\text{EPS} = \frac{\text{Profit after tax}}{\text{No. of equity shares}}$$

$$\text{EPS} = \frac{₹\,68,600}{3,40,000\,\text{shares}} = ₹\,0.202$$

(iii) Assets turnover

$$\text{Assets turnover} = \frac{\text{Sales}}{\text{Total Assets}^*} = \frac{₹\,50,00,000}{₹\,34,00,000 + ₹\,30,25,000} = 0.78$$

0.78 < 1.5 means lower than industry turnover.

*Total Asset = Equity share capital + 8% Debentures

(iv) EBT zero means 100% reduction in EBT. Since combined leverage is 2.5, sales have to be dropped by 100/2.5 = 40%. Hence new sales will be

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₹ 50,00,000 × (100 – 40) % = ₹ 30,00,000.

Therefore, at ₹ 30,00,000 level of sales, the Earnings before Tax (EBT) of the company will be zero.

Alternatively

$$\text{Required sales when EBT is zero} = \frac{\text{Fixed Cost + Interest + desired Profit}}{\text{P/V Ratio}}$$

$$= \frac{₹\ 3,40,000 + ₹\ 2,42,000 + \text{zero}}{13.60\%}$$

$$= \frac{₹\ 5,82,000}{13.60\%}$$

$$= ₹\ 42,79,412$$

[**Note:** The question can also be solved by first calculating EBIT with the help of Financial Leverage. Accordingly answer to the requirement(ii) and (iv) will also vary]

Question 5

(a) *Identify the methods of costing where:*

(i) all costs are directly charged to a specific job.

(ii) all costs are directly charged to a group of products.

(iii) the nature of the product is complex and method cannot be ascertained.

(iv) cost is ascertained for a single product.

(b) *What are the motivational factors for adopting a reconciliation process? Explain.*

(c) *What is 'Bill discounting'? How does it differ from 'Factoring'? Explain.*

(d) *Which method of comparing a number of investment proposals is most suited if each proposal involves different amount of cash inflows? Explain and state its limitations.*

(4 x 4 = 16 Marks)

Answer

(a) **(i)** Job Costing

(ii) Batch Costing

(iii) Multiple Costing

(iv) Single or Output Costing

(b) When the cost and financial accounts are kept separately, it is imperative that these should be reconciled, otherwise the cost accounts would not be reliable. The reconciliation of two set of accounts can be made, if both the sets contain sufficient detail

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as would enable the causes of differences to be located. It is therefore, important that in the financial accounts, the expenses should be analysed in the same way as in cost accounts.

Motivation for reconciliation is:

- To ensure reliability of cost data
- To ensure ascertainment of correct product cost
- To ensure correct decision making by the management based on Cost & Financial data.

(c) Bills Discounting:

Advances are allowed by banks against security of bills. When a bill is discounted, the borrower is paid the present worth.

The differences between Factoring and Bills discounting are as follows:

(i) Factoring is called as 'Invoice factoring' whereas bills discounting is known as "Invoice discounting".

(ii) In factoring the parties are known as client, factor and debtor whereas in bills discounting they are known as Drawer, Drawee and Payee.

(iii) Factoring is a sort of management of book debts whereas bills discounting is a sort of borrowing from commercial banks.

(iv) For Factoring there is no specific Act, whereas in the case of bills discounting, the Negotiable Instrument Act is applicable.

(d) Profitability Index (PI) method is best suited if each investment proposal involves different amount of cash inflows. PI considers both present value of cash inflows and present value of cash outflows.

Mathematically, the desirability factor is calculated as below:

$$\frac{\text{Sum of Discounted Cash inflows}}{\text{Initial Cash outlay or Total Discounted Cash outflow (as the case may be)}}$$

PI is known as a superior method of comparing a number of investment proposal than Net present value method (NPV).

Limitations of PI

- Profitability index fails as a guide in resolving capital rationing where projects are indivisible.
- Once a single large project with high NPV is selected, possibility of accepting several small projects which together may have higher NPV than the single project is excluded.

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- Also situations may arise where a project with a lower profitability index selected may generate cash flows in such a way that another project can be taken up one or two years later, the total NPV in such case being more than the one with a project with highest Profitability Index.

Question 6

(a) APP Limited is a manufacturing concern and recovers overheads at a pre-determined rate of ₹ 30 per man-day.

The following additional information of a period are also available for you:

Total factory overheads incurred	*₹ 51,00,000*
Man-days actually worked	*1,50,000*
Sales (in units)	*50,000*
Stock at the end of the period:	
Completed units	*5,000*
incompleted units (50% completed)	*10,000*

There was no opening stock of finished goods and works in progress.

On analyzing the situation, it was discovered that 60% of the unabsorbed overheads were due to defective planning and balance were attributable to increase in overhead costs.

How would you treat unabsorbed overheads in cost accounts? ***(8 Marks)***

(b) XY Ltd. provides the following information for the year ending 31st March, 2017:

Equity Share Capital	*₹ 8,00,000*
Closing Stock	*₹ 1,50,000*
Stock Turnover Ratio	*5 times*
Gross profit ratio	*20%*
Net profit/Sales	*16%*
Net profit/Capital	*25%*
Equity Share Capital	*₹ 8,00,000*

You are required to prepare:

Trading and Profit & Loss Account for the year ending 31st March, 2017. ***(8 Marks)***

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Answer

(a)

	Amount (₹)
Total factory overheads incurred	51,00,000
Less: Absorbed factory overheads (₹ 30 × 1,50,000)	(45,00,000)
Under-absorption of Overheads	6,00,000

60% of ₹ 6,00,000 i.e. ₹ 3,60,000 would be transferred to Costing P/L Account

40% of ₹ 6,00,000 i.e. ₹ 2,40,000 would be apportioned over Sales unit and Stock by using supplementary overheads rate.

$$\text{Supplementary overheads Rate} = \frac{₹\ 2,40,000}{50,000 + 5,000 + 5,000} = ₹\ 4$$

On Sales (50,000 units × ₹ 4)	2,00,000
On Finished Goods (5,000 units × ₹ 4)	20,000
On Work in Progress (10000 × 50% × ₹ 4)	20,000
	2,40,000

(b) Working Note:

1. Calculation of Net Profit

$$\frac{\text{Net Profit}}{\text{Capital}} = 25\%$$

$$\text{Or, } \frac{\text{Net Profit}}{₹\ 8,00,000} = \frac{25}{100} \text{ Or, Net Profit} = ₹\ 2,00,000$$

2. Calculation of Sales

$$\frac{\text{Net Profit}}{\text{Sales}} = \frac{16}{100}$$

$$\text{Or, } \frac{₹\ 2,00,000}{\text{Sales}} = \frac{16}{100} \text{ Or, Sales} = ₹\ 12,50,000$$

3. Calculation of Gross Profit

Gross profit = ₹ 12,50,000 × 20%

= ₹ 2,50,000

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4. Calculation of Opening Stock

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of Sales}}{\text{Average Stock}} = 5 \text{ times}$$

$$\text{Or, } \frac{₹\,12,50,000 \times (1-0.2)}{\text{Average Stock}} = 5$$

$$\text{Or, Average Stock} = \frac{₹\,10,00,000}{5} = ₹\,2,00,000$$

$$\text{Average Stock} = \frac{1,50,000 + \text{Opening Stock}}{2} = 2,00,000$$

Or, Opening Stock = 4,00,000 – 1,50,000 = ₹ 2,50,000

Trading and Profit & Loss Account

Particulars	(₹)	Particulars	(₹)
To Opening Stock	2,50,000	By Sales	12,50,000
To Purchases (Balancing figure)	9,00,000	By Closing Stock	1,50,000
To Gross Profit (Balance c/d)	2,50,000		
	14,00,000		14,00,000
To Miscellaneous expenses (Balancing figure)	50,000	By Gross Profit (Balance b/d)	2,50,000
To Net Profit	2,00,000		
	2,50,000		2,50,000

Question 7

*Answer any **four** of the following:*

(a) *Distinguish between 'Bin Card' and 'Stores Ledger'.*

(b) *Explain 'Retention Money' and 'Progress payment' in contract.*

(c) *Explain:*

(i) Flexible Budget

(ii) Operating lease

(d) *Explain 'Concentration Banking' and 'Lock Box System'.*

(e) *Explain 'Finance Function'.* ***(4 x 4 = 16 Marks)***

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Answer

(a) Difference between Bin Card & Stores Ledger

	Bin Card	Stores Ledger
(i)	It is maintained by the storekeeper in the store.	It is maintained in costing department.
(ii)	It contains only quantitative details of material received, issued and returned to stores.	It contains information both in quantity and value.
(iii)	Entries are made when transactions take place.	It is always posted after the transaction.
(iv)	Each transaction is individually posted.	Transactions may be summarized and then posted.
(v)	Inter-department transfers do not appear in Bin Card.	Material transfers from one job to another job are recorded for costing purposes.

(b) Retention Money: In a contract, a contractee generally keeps some amount payable to contractor with himself as security deposit. In a contract, a contractor undertakes to complete a job work on the basis of pre- determined terms and conditions and work specifications. To ensure that the work carried out by the contractor is as per the plan and specifications, it is monitored periodically by the contractee. To have a cushion against any defect or undesirable work the contractee withhold some money payable to contractor. This security money withheld by the contractee is known as retention money. In some contracts the contractor has to deposit some security money before staring of the contract as a term of contract. This is known as Earnest money. If any deficiency or defect is noticed in the work, it is to be rectified by the contractor before the release of the retention money. Retention money provides a safeguard against the risk of loss due to faulty workmanship.

Mathematically:

Retention Money = Value of work certified – Payment actually made/ cash paid

Progress Payment: A Contractor gets payments for work done on a contract based on work completion. Since, a contract takes longer period to complete and requires large investment in working capital to progress the contract work, hence, it is desirable by the contractor to have periodic payments from the contractee against the work done to avoid working capital shortage. For this a contactor enters into an agreement with the contractee and agrees on payment on some reasonable basis, which generally, includes percentage of work completion as certified by an expert.

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Mathematically:

Progress payment = Value of work certified – Retention money – Payment to date

(c) **(i)** **Flexible Budget:** According to CIMA, "a flexible budget is defined as a budget which, by recognizing the difference between fixed, semi-variable and variable costs is designed to change in relation to the level of activity attained." Unlike static (fixed) budgets, flexible budgets show the expected results of a responsibility center for different activity levels.

(ii) **Operating Lease:** A lease is classified as an operating lease if it does not secure for the lessor the recovery of capital outlay plus a return on the funds invested during the lease term. Normally, these are callable lease and are cancellable with proper notice. The term of this type of lease is shorter than the asset's economic life. The lessee is obliged to make payment until the lease expiration, which approaches useful life of the asset.

(d) **Concentration Banking:** In concentration banking the company establishes a number of strategic collection centres in different regions instead of a single collection centre at the head office. This system reduces the period between the time a customer mails in his remittances and the time when they become spendable funds with the company. Payments received by the different collection centers are deposited with their respective local banks which in turn transfer all surplus funds to the concentration bank of head office. The concentration bank with which the company has its major bank account is generally located at the headquarters. Concentration banking is one important and popular way of reducing the size of the float.

Lock Box System: Another means to accelerate the flow of funds is a lock box system. While in concentration banking, remittances are received by a collection centre and deposited in the bank after processing. The purpose of lock box system is to eliminate the time between the receipts of remittances by the company and deposited in the bank. A lock box arrangement usually is on regional basis which a company chooses according to its billing patterns.

(e) The finance function is most important for all business enterprises. It remains a focus of all activities. It starts with the setting up of an enterprise. It is concerned with raising of funds, deciding the cheapest source of finance, utilization of funds raised, making provision for refund when money is not required in the business, deciding the most profitable investment, managing the funds raised and paying returns to the providers of funds in proportion to the risks undertaken by them. Therefore, it aims at acquiring sufficient funds, utilizing them properly, increasing the profitability of the organization and maximizing the value of the organization and ultimately the shareholder's wealth.

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