PAPER – 3: COST AND MANAGEMENT ACCOUNTING

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

*Attempt any **four** questions out of the remaining **five** 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) M/s. X Private Limited is manufacturing a special product which requires a component "SKY BLUE". The following particulars are available for the year ended 31st March, 2018:

Annual demand of "SKY BLUE"	*12000 Units*
Cost of placing an order	*₹1,800*
Cost per unit of "SKY BLUE	*₹640*
Carrying cost per annum	*18.75%*

The company has been offered a quantity discount of 5 on the purchases of "SKY BLUE" provided the order size is 3000 components at a time.

You are required to:

(i) Compute the Economic Order Quantity.

(ii) Advise whether the quantity discount offer can be accepted.

(b) A worker takes 15 hours to complete a piece of work for which time allowed is 20 hours. His wage rate is ₹5 per hour. Following additional information are also available:

Material cost of work ₹50

Factory overheads 100% of wages

Calculate the factory cost of work under the following methods of wage payments:

(i) Rowan Plan

(ii) Halsey Plan

(c) Following figures have been extracted from the books of M/s. RST Private Limited:

Financial Year	*Sales (₹)*	*Profit/Loss (₹)*
2016-17	*4,00,000*	*15,000(loss)*
2017-18	*5,00,000*	*15,000 (Profit)*

You are required to calculate:

(i) Profit Volume Ratio

(ii) Fixed Costs

(iii) Break Even Point

(iv) Sales required to earn a profit of ₹ 45,000.

(v) Margin of Safety in Financial Year 2017-18.

(d) GK Ltd. showed net loss of ₹ 2,43,300 as per their financial accounts for the year ended 31st March, 2018. However, cost accounts disclosed net loss of ₹ 2,48,300 for the same period. On scrutinizing both the set of books of accounts, the following information were revealed:

		₹
(i)	*Works overheads over recovered 30,400*	*30,000*
(ii)	*Selling overheads under recovered*	*20,300*
(iii)	*Administrative overheads under recovered*	*27,700*
(iv)	*Depreciation over charged in cost accounts*	*35,100*
(v)	*Bad debts w/off in financial accounts*	*15,000*
(vi)	*Preliminary Exp. w/off in financial accounts*	*5,000*
(vii)	*Interest credited during the year in financial accounts*	*7,500*

Prepare a reconciliation statement reconciling losses shown by financial and cost accounts by taking costing net loss as base. ***(4 x 5 = 20 Marks)***

Answer

(a) (i) Calculation of Economic Order Quantity

$$EOQ = \sqrt{\frac{2AO}{C}} = \sqrt{\frac{2 \times 12{,}000 \text{ units} \times ₹ 1{,}800}{₹ 640 \times 18.75/100}} = 600 \text{ units}$$

(ii) Evaluation of Profitability of Different Options of Order Quantity

When EOQ is ordered

		(₹)
Purchase Cost	(12,000 units × ₹ 640)	76,80,000
Ordering Cost $[\frac{A}{Q} \times O$ -	(12,000 units/ 600 units) × ₹ 1,800]	36,000
Carrying Cost $(\frac{Q}{2} \times C \times i$ -	600 units × ₹ 640 × ½ × 18.75/100)	36,000
Total Cost		77,52,000

(b) When Quantity Discount is accepted

		(₹)
Purchase Cost	(12,000 units × ₹ 608)	72,96,000
Ordering Cost [$\frac{A}{Q} \times O$	(12,000 units/3,000 units) × ₹ 1,800]	7,200
Carrying Cost [$\frac{Q}{2} \times C \times i$	(3,000 units × ₹ 608 × ½ × 18.75/100)]	1,71,000
Total Cost		74,74,200

Advise – The total cost of inventory is higher if EOQ is adopted. If M/s. X Private Limited gets a discount of 5% on the purchases of "SKY BLUE" (if order size is 3,000 components at a time), there will be financial benefit of ₹ 2,77,800 (77,52,000 - 74,74,200). However, order size of big quantity will increase volume of average inventory to 5 times. There may be risk of shrinkage, pilferage and obsolescence etc., of inventory due to increase in the average volume of inventory holding. This aspect also has to be taken into consideration before opting the discount offer and taking final decision.

(b)

	₹
(i) Rowan Plan : Normal time wage = 15 hours @ ₹ 5=	75
Bonus = Time saved /Time allowed × (Time taken × Time rate)	
= $\frac{5}{20} \times (15 \times 5)$ =	18.75
	93.75
(ii) Halsey Plan: Normal time wage = 15 hours @ ₹ 5 =	75
Bonus = 50% of (Time saved x Time rate) = 50% of (5x5) =	12.5
	87.5

Statement of Comparative Factory cost of work

	Rowan Plan	Halsey Plan
	₹	₹
Materials	50	50
Direct Wages	93.75	87.5
Prime Cost	143.75	137.5
Factory Overhead (100% of Direct wages)	93.75	87.5
Factory Cost	237.5	225

(c)

	Sales (₹)	Profit (₹)
Year 2016	4,00,000	15,000 (loss)
Year 2017	5,00,000	15,000 (profit)
Difference	1,00,000	30,000

(i) P/V Ratio = $\frac{\text{Difference in profit}}{\text{Difference in Sales}} \times 100 = \frac{30,000}{1,00,000} \times 100 = 30\ \%$

(ii)

		(₹)
Contribution in 2016 (4,00,000 × 30%)		1,20,000
Add: Loss		15,000
Fixed Cost*		1,35,000
*Contribution	=	Fixed cost + Profit
∴ Fixed cost	=	Contribution – Profit

(iii) Break-even point = $\frac{\text{Fixed cost}}{\text{P/V ratio}} = \frac{1,35,000}{30\%}$ = ₹ 4,50,000

(iv) Sales to earn a profit of ₹ 45,000

$\frac{\text{Fixed cost + Desired profit}}{\text{P / V ratio}} = \frac{1,35,000 + 45,000}{30\%}$ = ₹ 6,00,000

(v) Margin of safety in 2017 –18

Margin of safety = Actual sales – Break-even sales

= 5,00,000 – 4,50,000 = ₹ 50,000.

(d) **Reconciliation Statement**

	Particulars	₹	₹
	Loss as per Cost Accounts		(2,48,300)
Add:	Works overheads over recovered	30,400	
	Depreciation over charged in cost accounts	35,100	
	Interest credited during the year in financial accounts	7,500	73,000
Less:	Selling overheads under recovered	20,300	
	Administrative overheads under recovered	27,700	
	Bad debts w/off in financial accounts	15,000	

Preliminary Exp. w/off in financial accounts	5,000	(68,000)
Loss as per Financial Accounts		(2,43,300)

Question 2

(a) Following information relate to a manufacturing concern for the year ended 31st March, 2018:

	₹
Raw Material (opening)	*2,28,000*
Raw Material (closing)	*3,05,000*
Purchases of Raw Material	*42,25,000*
Freight Inwards	*1,00,000*
Direct wages paid	*12,56,000*
Direct wages-outstanding at the end of the year	*1,50,000*
Factory Overheads	*20% of prime cost*
Work-in-progress (opening)	*1,92,500*
Wo9rk-in-progres (closing)	*1,40,700*
Administrative Overheads (related to production)	*1,73,000*
Distribution Expenses	*₹16 per unit*
Finished Stock (opening)-1217 Units	*6,08,500*
Sale of scrap of material	*8,000*

The firm produced 14000 units of output during the year. The stock of finished goods at the end of the year is valued at cost of production. The firm sold 14153 units at a price of ₹618 per unit during the year.

Prepare cost sheet of the firm. ***(10 Marks)***

(b) XYZ Construction Company took a contract for construction of a stadium on 1st April, 2017 at a price of ₹160 lakhs. The relevant information for the year ended 31st March, 2018 are as under:

	Amount (₹ In '000)
Material purchased for the contract	*6,800*
Direct wages paid	*3,450*
Salaries	*200*
Direct wages prepaid at the end of the year	*50*
Salaries outstanding at the end of the year	*100*

Material returned to stores	*150*
Material at site as on 31st March, 2018	*175*
Payment received from the contractee (80% of work certified)	*9,440*
Work done but not certified	*500*

A plant was purchased for ₹12,00,000 on 1st November, 2017 and was in use at the site upto 31st March, 2018. Depreciation is to be charged on plant @ 15% per annum on straight line basis. Material costing ₹50,000 was stolen from the site.

You are required to:

(i) Prepare contract account for the year ended 31st March, 2018 showing the profit to be taken to Profit & Loss Account.

(ii) Prepare Balance Sheet showing the relevant items. ***(10 Marks)***

Answer

(a) Cost sheet for the year ended 31st March, 2018.

Units produced - 14,000 units

Units sold - 14,153 units

Particulars	**Amount (₹)**
Raw materials purchased	42,25,000
Add: Freight Inward	1,00,000
Add: Opening value of raw materials	2,28,000
Less: Closing value of raw materials	(3,05,000)
	42,48,000
Less: Sale of scrap of material	8,000
Materials consumed	42,40,000
Direct Wages (12,56,000 + 1,50,000)	14,06,000
Prime Cost	56,46,000
Factory overheads (20% of ₹ Prime Cost)	11,29,200
Add: Opening value of W-I-P	1,92,500
Less: Closing value of W-I-P	(1,40,700)
Factory Cost	68,27,000
Add: Administrative overheads	1,73,000
Cost of Production	70,00,000

Add: Value of opening finished stock	6,08,500
Less: Value of closing finished stock [₹ 500(70,00,000/14,000) × 1,064) (1,217+ 14,000 – 14,153 = 1,064 units)	(5,32,000)
Cost of Goods Sold	70,76,500
Distribution expenses (₹ 16 × 14,153 units)	2,26,448
Cost of Sales	73,02,948
Profit (Balancing figure)	14,43,606
Sales (₹ 618 × 14,153 units)	87,46,554

(b) (i) Contract Account

Particulars	(₹'000)	(₹'000)	Particulars	(₹'000)	(₹'000)
To Material purchased		6,800	By Material returned		150
" Direct wages	3,450		" Work-in-progress:		
Less: Prepaid wages	(50)	3,400	Value of work certified (₹9,440 ÷ 0.8)	11,800	
" Salaries	200		Cost of work uncertified	500	
Add: Outstanding	100				12,300
		300	" Material stolen at Site		50
" Depreciation on Plant {(₹1,200× 15%) × (5÷12)}		75	" Material at site		175
" Costing P&L A/c (Notional profit) (bal. figure)		2,100			
		12,675			12,675

(ii) Balance Sheet (extract) as on 31st March, 2018

Liabilities		(₹'000)	Assets		(₹'000)
Capital			Plant at site		1,125
Add: Notional Profit	2,100		Work in Progress		
Outstanding Salary		100	Work certified	11,800	
			Work uncertified	500	
				12,300	

			Cash & Bank (in transit)	9,440	2,860
			Prepaid Direct wages		50
			Material at site		175

Question 3

(a) The information regarding number of employees on roll in a shopping mall for the month of December 2017 are given below:

Number of employees as on 01-12-2017 *900*

Number of employees as on 31-12-2017 *1100*

During December, 2017, 40 employees resigned and 60 employees were discharged. 300 employees were recruited during the month. Out of these 300 employees, 225 employees were recruited for an expansion project of the mall and rest were recruited due to exit of employees.

Assuming 365 days in a year, calculate Employee Turnover Rate and Equivalent Annual' Employee Turnover Rate by applying the following:

(i) Replacement Method

(ii) Separation Method

(iii) Flux Method ***(10 Marks)***

(b) Alpha Ltd. is engaged in the production of a product A which passes through 3 different process - Process P, Process Q and Process R. The following data relating to cost and output is obtained from the books of accounts for the month of April 2017:

Particulars	*Process P*	*Process Q*	*Process R*
Direct Material	*38,000*	*42,500*	*42,880*
Direct Labour	*30,000*	*40,000*	*50,000*

Production overheads of ₹ 90,000 were recovered as percentage of direct labour.

10,000 kg of raw material @ ₹ 5 per kg. was issued to Process P. There was no stock of materials or work in process. The entire output of each process passes directly to the next process and finally to warehouse. There is normal wastage, in processing, of 10%. The scrap value of wastage is ₹ 1 per kg. The output of each process transferred to next process and finally to warehouse are as under:

Process P = 9,000 kg

Process Q = 8,200 kg

Process R = 7,300 kg

The company fixes selling price of the end product in such a way so as to yield a profit of 25% selling price.

Prepare Process P, Q and R accounts. Also calculate selling price per unit of end product. ***(10 Marks)***

Answer

(a) Labour turnover rate:

It comprises of computation of labour turnover by using following methods:

(i) *Replacement Method:*

$$\text{Labour turnover rate} = \frac{\text{No. of workers replaced}}{\text{Average number of workers}} \times 100$$

$$= \frac{75}{1,000} \times 100 = 7.5\%$$

$$\text{Equivalent Annual Turnover Rate} = \frac{7.5 \times 365}{31} = 88.31\%$$

(ii) *Separation Method:*

$$\text{Labour turnover rate} = \frac{\text{No. of workers left + No. of workers discharged}}{\text{Average number of workers}} \times 100$$

$$= \frac{(40+60)}{(900+1100) \div 2} \times 100 = \frac{100}{1,000} \times 100 = 10\%$$

$$\text{Equivalent Annual Turnover Rate} = \frac{10 \times 365}{31} = 117.74\%$$

(iii) *Flux Method:*

$$\text{Labour turnover rate} = \frac{\text{No. of separations + No. of accessions}}{\text{Average number of workers}} \times 100$$

$$= \frac{(100+300)}{(900+1,100) \div 2} \times 100 = \frac{400}{1,000} \times 100 = 40\%$$

$$\text{Equivalent Annual Turnover Rate} = \frac{40 \times 365}{31} = 470.97\%$$

OR

(iii) Flux Method:

$$\text{Labour turnover rate} = \frac{\text{No. of separation} + \text{No. of replaced}}{\text{Average number of workers}} \times 100$$

$$\frac{100 + 75}{1000} \times 100 = 17.5\%$$

$$\text{Equivalent Annual Turnover Rate} = \frac{17.5 \times 365}{31} = 206.05\%$$

(b)

Process- P Account

Particulars	Kg.	Amount (₹)	Particulars	Kg.	Amount (₹)
To Input	10,000	50,000	By Normal wastage (1,000 kg. × ₹ 1)	1,000	1,000
To Direct Material	---	38,000	By Process- Q (9,000 kg. × ₹ 15.50)	9,000	1,39,500
To Direct Labour	---	30,000			
To Production OH (₹ 90,000 × 3/12)	---	22,500			
	10,000	1,40,500		10,000	1,40,500

$$\text{Cost per unit} = \frac{₹1,40,500 - ₹1,000}{10,000\,\text{kg.} - 1,000\,\text{kg.}} = ₹\ 15.50$$

Process- Q Account

Particulars	Kg.	Amount (₹)	Particulars	Kg.	Amount (₹)
To Process-P A/c	9,000	1,39,500	By Normal wastage (900 kg. × ₹ 1)	900	900
To Direct Material	---	42,500	By Process- Q (8,200 kg. × ₹ 31)	8,200	2,54,200
To Direct Labour	---	40,000			
To Production OH (₹ 90,000 × 4/12)	---	30,000			
To Abnormal Gain (100 kg. × ₹ 31)	100	3,100			
	9,100	2,55,100		9,100	2,55,100

Cost per unit = $\frac{₹\ 2,52,000 - ₹\ 900}{9,000\,kg. - 900\,kg.} = ₹\ 31$

Process- R Account

Particulars	Kg.	Amount (₹)	Particulars	Kg.	Amount (₹)
To Process-Q A/c	8,200	2,54,200	By Normal wastage (820 kg. × Re.1)	820	820
To Direct Material	---	42,880	By Abnormal loss (80 kg. × ₹ 52)	80	4,160
To Direct Labour	---	50,000	By Finished Goods (7,300 kg. × ₹52)	7,300	3,79,600
To Production OH (₹ 90,000 × 5/12)	---	37,500			
	8,200	3,84,580		8,200	3,84,580

Cost per unit = $\frac{₹3,84,580 - ₹\ 820}{8,200\,kg. - 820\,kg.} = ₹\ 52$

Calculation of Selling price per unit of end product:

Cost per unit	₹ 52.00
Add: Profit 25% on selling price i.e. 1/3rd of cost	₹ 17.33
Selling price per unit	₹ 69.33

Question 4

(a) PQR Pens Ltd. manufactures two products - 'Gel Pen' and 'Ball Pen'. It furnishes the following data for the year 2017:

Product	*Annual Output (Units)*	*Total Machine Hours*	*Total number of Purchase orders*	*Total number of set-ups*
Gel Pen	*5,500*	*24,000*	*240*	*30*
Ball Pen	*24,000*	*54,000*	*448*	*56*

The annual overheads are as under:

Particulars	*₹*
Volume related activity costs	*4,75,020*
Set up related costs	*5,79,988*
Purchase related costs	*5,04,992*

Calculate the overhead cost per unit of each Product - Gel Pen and Ball Pen on the basis of:

(i) Traditional method of charging overheads

(ii) Activity based costing method and

(iii) Find out the difference in cost per unit between both the methods. ***(10 Marks)***

(b) A group of 'Health Care Services' has decided to establish a Critical Care Unit in a metro city with an investment of ₹ 85 lakhs in hospital equipments. The unit's capacity shall be of 50 beds and 10 more beds, if required, can be added.

Other information for a year are as under:

	(₹)
Building Rent	*2,25,000 per month*
Manager Salary (Number of Manager-03)	*50,000 per month to each one*
Nurses Salary (Number of Nurses-24)	*18,000 per month to each Nurse*
Ward boy's Salary (Number of ward boys' -24)	*9,000 per month per person*
Doctor's payment (Paid on the basis of number of patients attended and time spent by them)	*5,50,000 per month*
Food and laundry services (variable)	*39,53,000*
Medicines to patients (variable)	*22,75,000 per year*
Administrative Overheads	*28,00,000 per year*
Depreciation on equipments	*15% per annum on original cost*

It was reported that for 200 days in a year 50 beds were occupied, for 105 days 30 beds were occupied and for 60 days 20 beds were occupied.

The hospital hired 250 beds at a charge of ₹ 950 per bed to accommodate the flow of patients. However, this never exceeded the normal capacity of 50 beds on any day.

Find out:

(i) Profit per patient day, if hospital charges on an average ₹ 2,500 per day from each patient.

(ii) Break even point per patient day (Make calculation on annual basis) ***(10 Marks)***

Answer

(a) (i) Statement Showing Overhead Cost per unit "Traditional Method"

	Gel Pen (₹)	**Ball Pen (₹)**
Units	5,500	24,000

Overheads (₹) (Refer to W.N.)	4,80,000 (20 x 24,000 hrs.)	10,80,000 (20 x 54,000 hrs.)
Overhead Rate *per unit* (₹)	87.27 (₹ 4,80,000 / 5,500 units)	45 (₹ 10,80,000 /24,000 units)

Working Notes:

Overhead Rate per Machine Hour

$$= \frac{\text{Total Overhead incurred by the Company}}{\text{Total Machine Hours}}$$

$$= \frac{₹\,4,75,020 + 5,79,988 + 5,04,992}{24,000\text{ hours} + 54,000\text{ hours}} = \frac{₹15,60,000}{78,000\text{ hours}}$$

= ₹ 20 *per machine hour*

(ii) Statement Showing "Activity Based Overhead Cost"

Activity Cost Pool	Cost Driver	Ratio	Total Amount (₹)	Gel Pen (₹)	Ball Pen (₹)
Volume Related Activity Costs	Machine hours	24:54	4,75,020	1,46,160	3,28,860
Setup Related Costs	No. of Setups	30:56	5,79,988	2,02,321	3,77,667
Purchase Related Costs	No. of Purchase Orders	240:448	5,04,992	1,76,160	3,28,832
Total Cost				5,24,641	10,35,359
Output (units)				5,500	24,000
Unit Cost (Overheads)				95.39	43.13

(iii)

	Gel Pen (₹)	Ball Pen (₹)
Overheads Cost per unit (₹) (Traditional Method)	87.27	45
Overheads Cost per unit (₹) (ABC)	95.39	43.13
Difference *per unit*	-8.12	+1.87

(Volume related activity cost, set up related costs and purchase related cost can also be calculated under Activity Base Costing using Cost driver rate. However, there will be no changes in the final answer.)

(b) Number of Patient Days = (200x50) + (105x30) + (60x20)

=14,350 patient days + 250 = 14,600

Statement Showing Profit

Elements of Cost and Revenue	Total (₹)
A. Revenue (14,600 x ₹ 2,500)	3,65,00,000
B. Variable Costs	
Food and Laundry Service	39,53,000
Medicines to Patients	22,75,000
Doctor's Payment	66,00,000
Hire Charges of Bed (250 x ₹ 950)	2,37,500
Total Variable Cost	1,30,65,500
C. Fixed Costs	
Building Rent	27,00,000
Manager's Salary (₹ 50,000 x 3 x 12)	18,00,000
Nurse's Salary (₹ 18,000 x 12 x 24)	51,84,000
Ward boy's Salary (₹ 9,000 x 12 x 24)	25,92,000
Administrative Overheads	28,00,000
Depreciation on Equipment's	12,75,000
	1,63,51,000
D. Total Cost (B+C)	2,94,16,500
E. Profit (A-D)	70,83,500

Profit per patient day = ₹ 70,83,500/14,600 = ₹ 485.17

(i) Contribution (per patient day) = (₹ 3,65,00,000 – ₹ 1,30,65,500)/ 14,600
= ₹ 1,605.10

BEP = 1,63,51,000/1,605.10 = 10,186.90 or say 10,187 patient days

Notes:

1. Higher Charges for extra beds are a semi variable cost; still, for the sake of convenience it has been considered a variable cost.

2. Assumed, the hospital hired 250 beds at a charge of ₹ 950 per bed to accommodate the flow of patients. However, this never exceeded the 10 beds above the normal capacity of 50 beds on any day.
3. The fees were paid based on the number of patients attended to and the time spent by them, which on an average worked out to ₹ 5,50,000 p.m.

Question 5

(a) (i) The following details are provided by M/s. SKU Enterprises for the year ended 31st March, 2018:

Particulars	***Material-M (₹)***	***Material-N (₹)***
Stock as on 01-04-2017	*6,00,000*	*10,00,000*
Stock as on 31-03-2018	*4,50,000*	*7,25,000*
Purchases during the year	*9,50,000*	*18,40,000*

You are required to:

(i) Calculate Turnover Ratio of both the materials.

(ii) Advise which of the two materials is fast moving. (Assume 360 days in a year).

(5 Marks)

(ii) Beta Ltd. is manufacturing Product N. This is manufactured by mixing two materials namely Material P and Material Q. The Standard Cost of Mixture is as under:

Material P 150 ltrs. @ ₹ 40 per ltr.

Material Q 100 ltrs. @ ₹ 60 per ltr.

Standard loss @ 20 of total input is expected during production.

The cost records for the period exhibit following consumption:

Material P 140 ltrs. @ ₹ 42 per ltr,

Material Q 110 ltrs. @ ₹ 56 per ltr,

Quantity produced was 195 ltrs.

Calculate:

(i) Material Cost Variance

(ii) Material Usage Variance.

(iii) Material Price Variance ***(5 Marks)***

(b) PH Gems Ltd. is manufacturing readymade suits. It has annual production capacity of 2,000 pieces. The Cost Accountant has presented following information for the year to the management:

Particulars	***Amount (₹)***	***Amount (₹)***
Sales 1,500 pieces @ ₹ 1,800 per piece		*27,00,000*
Direct Material	*5,94,200*	
Direct Labour	*4,42,600*	
Overheads (40% Fixed)	*11,97,000*	*22,33,800*
Net Profit		*4,66,300*

Evaluate following options:

(i) If selling price is increased by ₹ 200, the sales will come down to 60% of the total annual capacity. Should the company increase its selling price?

(ii) The company can earn a profit of 20% on sales if the company provide TIEPIN with ready-made suit. The cost of each TIEPIN is ₹ 18. Calculate the sales to earn a profit of 20% on sales. ***(10 Marks)***

Answer

5. (a) (i)

Material M	**Material N**
Turnover ratio $= \frac{\text{Cost of stock of raw material consumed}}{\text{Average stock of raw material}}$ $= \frac{₹6,00,000 + ₹9,50,000 - ₹4,50,000}{(6,00,000 + 4,50,000)/2} = 2.09$ Average number of days for which the average inventory is held $= \frac{360}{\text{Inventory turnover ratio}}$ $= \frac{360 \text{ days}}{2.09}$ = 172.25 days	**Turnover ratio** $= \frac{\text{Cost of stock of raw material consumed}}{\text{Average stock of raw material}}$ $= \frac{₹10,00,000 + ₹18,40,000 - ₹7,25,000.}{(10,00,000 + 7,25,000)/2}$ =2.45 Average number of days for which the average inventory is held $= \frac{360}{\text{Inventory turnover ratio}}$ $= \frac{360 \text{ days}}{2.45}$ = 146.94 days

(ii) Advice

Comparatively Material M is slower than Material N since Inventory holding period of 'M' is 172.25 days in Comparison to 'N' i.e. 146.94 days. Infact, both materials have slow inventory turnover. Though, different business has their own expected rates for inventory turnover like food shops have fast inventory turnover, shop selling furniture etc. will have slower inventory turnover while manufacturers of large items of plant will have very long inventory turnover.

If it is not as per the Industry Standard, then a slow turnover may indicate that excessive inventory is held and risk of obsolete or spoiled inventory will increase. Large quantity of slow moving material means that capital is locked up in business and not earning revenue. It is advisable to make proper investigations into slow moving materials and take steps to minimize the loss arises therefrom as it may impact overall financial health of the organisation.

5. (a) (ii) Workings:

Take the good output of 195 ltr. The standard quantity of material required for 195 ltr. of output is

$$\frac{195}{80} \times 100 = 243.75 \text{ ltr.}$$

Statement showing computation of Standard Cost/Actual Cost/ Revised Actual Quantity

Material	Standard Cost			Actual Cost		
	Quantity [SQ] (Kg.)	Rate [SP] (₹)	Amount [SQ × SP] (₹)	Quantity [AQ] (Kg.)	Rate [AP] (₹)	Amount [AQ × AP] (₹)
A (60% of 243.75 ltr.)	146.25	40	5,850.00	140	42	5,880
B (40% of. 243.75 Kg.)	97.50	60	5,850.00	110	56	6,160
	243.75		11,700.00	200		12,040

Note: SQ	= Standard Quantity = Expected Consumption for Actual Output
AQ	= Actual Quantity of Material Consumed
SP	= Standard Price Per Unit
AP	= Actual Price Per Unit

Computation of Variances:

Material Cost Variance = SQ × SP – AQ × AP

A = ₹ 146.25 ltr. × ₹ 40– 140 ltr. × ₹ 42 = ₹ 30.00 (A)

B = ₹ 97.50 ltr. × ₹ 60 – 110 ltr. × ₹ 56 = ₹ 310.00 (A)

Total = ₹ 30.00 (A) + ₹ 310.00 (A)

= ₹ 340.00 (A)

Material Usage Variance = SP × (SQ – AQ)

A = ₹ 40 × (146.25 ltr. –140 ltr.) = ₹ 250.00 (F)

B = ₹ 60 × (97.50 ltr. – 110 ltr.) = ₹ 750.00 (A)

Total = ₹ 250.00 (F) + ₹ 750.00 (A)

= ₹ 500.00 (A)

Material Price Variance = AQ × (SP – AP)

A = 140 Kg. × (₹ 40 – ₹ 42) = ₹ 280 (A)

B = 110 Kg. × (₹ 60 – ₹ 56) = ₹ 440 (F)

Total = ₹ 280 (A) + ₹ 440 (F)

= ₹ 160 (F)

5. (b) (i) Evaluation of Option (i)

Selling Price = ₹ 1800 + ₹ 200 = ₹ 2,000

Sales = 2000 x 60% = 1200 Pieces

	(₹)
Sales (1,200 pieces @ ₹ 2,000)	24,00,000
Less: Direct Material $\left(\frac{₹\,5,94,200}{1,500\ \text{units}} \times 1,200\right)$	4,75,360
Direct Labour $\left(\frac{₹\,4,42,600}{1,500\ \text{units}} \times 1,200\right)$	3,54,080
Variable Overhead $\left(\frac{₹\,11,97,000 \text{x } 60\%}{1,500\ \text{units}} \times 1,200\right)$	5,74,560
Contribution	9,96,000
Less: Fixed cost (Rs. 11,97,000x40%)	4,78,800
Profit	5,17,200

If price has been increased by 11.11% (increases by 200 on 1,800) sales goes down by 20% (decreased by 300 on 1,500). Change in demand is greater than change in price. Since the variable costs are still same profit has been arose to ₹ 5,17,200 in-spite of high elasticity of demand. PH gems would not be able to sustain this policy on account of change if any in variable costs.

5. (b) (ii) Evaluation of Option (ii)

	(₹)
Sales	1,800.00
Less: Direct Material $\left(\frac{₹\ 5,94,200}{1,500}\right)$	396.13
Cost of Tie PIN	18.00
Direct Labour $\left(\frac{₹\ 4,42,600}{1,500}\right)$	295.07
Variable Overheads $\left(\frac{₹11,97,000 \times 60\%}{1,500}\right)$	478.80
Contribution	612.00
P/V Ratio (₹ 612/1800x100)	34.0%

Sales to required earn a profit of 20%

$$\text{Sales} = \frac{₹\ 4,78,800 + 0.20 \text{ of Sales}}{34.00\%}$$

Sales = ₹ 34,20,000 or 1,900 units (₹ 34,20,000/1800)

To earn profit 20% on sales of readymade suit (along with TIE PIN) company has to sold 1,900 units i.e. 95% of the full capacity. This sales level of 1,900 units is justified only if variable cost is constant. Any upside in variable cost would impact profitability, to achieve the desired profitability. Production has to be increased but the scope is limited to 5% only.

Question 6

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

(a) Why are cost and management accounting information are required by the staff at operational level? Describe.

(b) Explain 'Just In Time' (JIT) approach of inventory management.

(c) Why is 'Zero Base Budgeting' (ZBB) considered superior to 'Traditional Budgeting'? Explain.

(d) Explain 'Job Costing' and 'Batch Costing'.

(e) Explain:

(i) Opportunity Cost

(ii) FIFO and LIFO method of stores issue. ***(4 x 5 =20 Marks)***

Answer

(a) Operational level staffs- The operational level staffs like supervisors, foreman, team leaders are requiring information

(i) to know the objectives and performance goals for them

(ii) to know product and service specifications like volume, quality and process etc.

(iii) to know the performance parameters against which their performance is measured and evaluated.

(iv) to know divisional (responsibility centre) profitability etc.

(b) Just in Time (JIT) Inventory Management

JIT is a system of inventory management with an approach to have a zero inventories in stores. According to this approach material should only be purchased when it is actually required for production.

JIT is based on two principles

(i) Produce goods only when it is required and

(ii) the products should be delivered to customers at the time only when they want.

It is also known as 'Demand pull' or 'Pull through' system of production. In this system, production process actually starts after the order for the products is received. Based on the demand, production process starts and the requirement for raw materials is sent to the purchase department for purchase. This can be understood with the help of the following diagram:

(c) Zero based budgeting is superior to traditional budgeting: Zero based budgeting is superior to traditional budgeting in the following manner:

- It provides a systematic approach for evaluation of different activities.

- It ensures that the function undertaken are critical for the achievement of the objectives.
- It provides an opportunity for management to allocate resources to various activities after a thorough – cost benefit analysis.
- It helps in the identification of wasteful expenditure and then their elimination. If facilitates the close linkage of departmental budgets with corporate objectives.
- It helps in the introduction of a system of Management by Objectives

(d) Job costing: In this method of costing, cost of each job is ascertained separately. It is suitable in all cases where work is undertaken on receiving a customer's order like a printing press, motor work shop, etc. This method of costing is used for non- standard and non- repetitive products produced as per customer specifications and against specific orders. Jobs are different from each other and independent of each other. Each Job is unique.

Batch Costing: It is the extension of Job costing. Homogeneous products are produced in a continuous production flow in lots. A batch may represent a number of small orders passed through the factory in batch. Each batch here is treated as a unit of cost and thus separately costed. Here cost per unit is determined by dividing the cost of the batch by number of units produced in the batch.

(e) (i) Opportunity Cost - This cost refers to the value of sacrifice made or benefit of opportunity foregone in accepting an alternative course of action. For example, a firm financing its expansion plan by withdrawing money from its bank deposits. In such a case the loss of interest on the bank deposit is the opportunity cost for carrying out the expansion plan.

(ii) First-in First-out (FIFO) method: It is a method of pricing the issues of materials, in the order in which they are purchased. In other words, the materials are issued in the order in which they arrive in the store or the items longest in stock are issued first. Thus each issue of material only recovers the purchase price which does not reflect the current market price. This method is considered suitable in times of falling price because the material cost charged to production will be high while the replacement cost of materials will be low.

Last-in-First-out (LIFO) method: It is a method of pricing the issues of materials. This method is based on the assumption that the items of the last batch (lot) purchased are the first to be issued. Therefore, under this method the prices of the last batch (lot) are used for pricing the issues, until it is exhausted, and so on. If however, the quantity of issue is more than the quantity of the latest lot than earlier (lot) and its price will also be taken into consideration. During inflationary period or period of rising prices, the use of LIFO would help to ensure that the cost of production determined on the above basis is approximately the current one.