PAPER – 4: COST AND MANAGEMENT ACCOUNTING

Part I - Multiple Choice Questions

Case Scenario - I

The following information pertains to ABC Limited for the period 1st April, 2024 to 31st March, 2025:

Sl. No.	***Particulars***	***Amount (₹)***	***Amount (₹)***
1	*Royalty paid for production*		*7,76,400*
2	*Amount paid for power & fuel*		*2,15,200*
3	*Packing cost paid for re-distribution of Finished Goods*		*70,500*
4	*Repairs & Maintenance paid for:* *- Plant & Machinery* *- Sales office building*	 *65,000* *80,000*	 *1,45,000*
5	*Insurance premium paid for Plant & Machinery*		*1,17,520*
6	*Research & Development cost paid for improvement in production process*		*17,800*
7	*Depreciation on office building*		*75,500*
8	*Salary paid to General Manager*		*15,50,000*
9	*Salary & bonus paid to Sales & Marketing staff*		*11,40,500*
10	*Receipt from sale of scrap and waste generated during production*		*20,000*
11	*Value of Stock as on 1st April,2024:* *- Raw materials* *- Work-in- process* *- Finished goods*		 *5,00,000* *8,40,000* *?*

12	*Value of stock as on 31st March,2025:*		
	- *Raw materials*		*1,10,000*
	- *Work-in- process*		*6,50,000*
	- *Finished goods*		*?*

Other information are as follows:

(i) Raw materials purchased were 15,000 kgs @₹300 per kg.

(ii) Freight inwards paid at 4% of the cost of raw materials purchased.

(iii) Wages paid to factory workers was 30% of raw material consumed.

(iv) Closing stock of finished goods was ₹9,90,000 more than the opening stock. The average stock of finished goods was ₹11,55,000.

(v) Sales during the period 1st April, 2024 to 31st March, 2025 was ₹1,10,00,000.

On the basis of above Case Scenario, you are required to answer the following MCQs 1 to 5:

1. What is the Direct employee (labour) cost?

(A) ₹15,21,000

(B) ₹14,67,000

(C) ₹14,62,500

(D) ₹15,29,500 ***(2 Marks)***

2. What is the Prime cost?

(A) ₹78,88,000

(B) ₹65,91,600

(C) ₹75,82,600

(D) ₹72,92,000 ***(2 Marks)***

3. What is the Factory cost?

(A) ₹78,85,520

(B) ₹79,55,120

(C) ₹75,75,650

(D) ₹76,45,840 ***(2 Marks)***

4. *What is the cost of goods sold?*

   (A) ₹ 76,55,520

   (B) ₹ 78,35,850

   (C) ₹ 69,62,920

   (D) ₹ 70,82,500 ***(2 Marks)***

5. *What is the amount of Profit?*

   (A) ₹ 12,25,350

   (B) ₹ 11,33,000

   (C) ₹ 10,95,500

   (D) ₹ 11,20,580 ***(2 Marks)***

Case Scenario - II

JMS Limited, a soft drink company, is intending to introduce a new product viz. 'Herbs Infused Mineral Water to the market. Annual sales of this new product is estimated at 36,000 units with a selling price of ₹ 75 per unit. The cost estimates for this new product are as follows:

Elements of Cost	***Amount (₹)***
Direct material consumed	*9,50,000*
Direct labour cost	*5,93,750*
Manufacturing overheads (variable)	*2,85,000*
Manufacturing overheads (fixed)	*1,90,000*
General & Administration overheads (variable)	*1,42,500*
General & Administration overheads (fixed)	*2,13,750*
Selling and distribution overheads (variable)	*80,750*
Selling and distribution overheads (fixed)	*64,250*

There will be no closing stock of 'Herbs Infused Mineral Water'.

On the basis of above Case Scenario, you are required to answer the following MCQs 6 to 10:

6. *What is the 'Cost of production' and 'Total Cost' as per Absorption costing?*

   (A) ₹ 18,28,750 and ₹ 27,00,000

   (B) ₹ 19,71,250 and ₹ 25,00,000

   (C) ₹ 20,18,750 and ₹ 25,20,000

   (D) ₹ 17,67,000 and ₹ 26,20,000 ***(2 Marks)***

7. *What is the amount of total variable cost?*

   (A) ₹ 20,52,000

   (B) ₹ 19,71,250

   (C) ₹ 23,75,000

   (D) ₹ 25,20,000 ***(2 Marks)***

8. *What is the amount of contribution per unit earned at the estimated level of sales?*

   (A) ₹ 21

   (B) ₹ 18

   (C) ₹ 23

   (D) ₹ 15 ***(2 Marks)***

9. *What is the Break-even Sales (in Rupees)?*

   (A) ₹ 32,50,000

   (B) ₹ 23,69,000

   (C) ₹ 16,33,000

   (D) ₹ 19,50,000 ***(2 Marks)***

10. *What will be the profit if the actual sales are 10% less than the estimated sales?*

    (A) ₹ 1,15,200

    (B) ₹ 1,62,000

(C) ₹ 1,71,500

(D) ₹ 1,51,200 ***(2 Marks)***

11. *The Cost Accountant of AQ Limited has provided the following information for investigation of variances:*

Material Cost Variance	*₹ 4,220 (F)*
Material Usage Variance	*₹ 18,540 (A)*
Material Yield Variance	*₹ 8,390 (F)*

The Management Accountant is not able to comment on the reason of variances as information is not sufficient and seeks your help to find out the correct amount of Material Price Variance and Material Mix Variance. What is the correct amount of Material Price Variance (MPV) and Material Mix Variance (MMV)?

(A) MPV ₹ 24,880 (A) and MMV ₹ 27,440 (F)

(B) MPV ₹ 14,320 (A) and MMV ₹ 10,150 (F)

(C) MPV ₹ 14,320 (F) and MMV ₹ 10,150 (A)

(D) MPV ₹ 22,760 (F) and MMV ₹ 26,930 (A) ***(2 Marks)***

12. *A company produces two joint products X and Y, using the same type of material. The cost data to produce 200 units of product X and 400 units of product Y are as under:*

Material	*₹ 80,000*
Labour	*₹ 40,000*
Fixed overheads	*₹ 20,000*

Sales of product X was 200 units @₹ 350 per unit and product Y was 400 units @ ₹ 250 per unit.

Using the Contribution margin method, in what ratio fixed overheads will be apportioned between Product X and Product Y?

(A) 4:8

(B) 3:2

(C) 2:3

(D) 8:4 ***(2 Marks)***

13. *The management of Y Limited has provided the following information:*

Opening stock of raw material	-	*₹ 25,000*
Closing stock of raw material	-	*₹ 75,000*
Raw material consumed during the year	-	*₹ 7,50,000*

What will be the number of days for which average inventory of raw material is to be held by Y Limited? Assume 360 days in a year.

(A) 14 days

(B) 15 days

(C) 24 days

(D) 26 days ***(2 Marks)***

14. *A product passes through Process-I and Process-II. Materials issued to Process-1 amounted to ₹ 1,60,000. Wages ₹ 70,000 and Manufacturing Overheads ₹ 58,000 were charged to Process 1. Anticipated normal loss was 6% of input. 9,200 units of output were produced and transferred to Process-II. There was no opening stock. Input of raw material issued to Process-1 was 10,000 units. Scrap has a realizable value of ₹ 10 per unit. What is the value of units transferred to Process-II?*

(A) ₹ 2,76,000

(B) ₹ 2,82,000

(C) ₹ 2,88,000

(D) ₹ 2,78,000 ***(2 Marks)***

15. *PMP Limited manufactures a single product and absorbs the production overheads at a pre-determined rate of ₹ 20 per machine hour. At the end of financial year 2024-25, it has been found that actual production overheads incurred were ₹ 12,00,000. It included ₹ 80,000 on account of 'written off obsolete stores and ₹ 30,000 being the wages paid for the strike period under an award. The actual machine hours worked during the period were 50,000 hours. The production and sale was 20,000 units and 18,000 units*

respectively. What will be the amount of under-absorbed production overhead to be charged to Cost of Sales?

(A) ₹91,000

(B) ₹90,000

(C) ₹81,000

(D) ₹80,000 ***(2 Marks)***

Answer Key

MCQ No.	Correct Option
1.	A
2.	C
3.	B
4.	C
5.	D
6.	C
7.	A
8.	B
9.	D
10.	A
11.	D
12.	B
13.	C
14.	A
15.	C

Part II – Descriptive Questions

*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

(a) *RST Ltd. manufactures a standard line of office desks. The company operates with a monthly manufacturing capacity of 5,000 units. The following data relates to the output and cost of two consecutive months of production:*

Month	Units Manufactured	Direct Material (₹)	Direct Wages (₹)	Factory Overheads (₹)
April	3,000	15,00,000	6,00,000	3,50,000
May	3,800	19,00,000	7,60,000	4,30,000

In the month of June, the number of units manufactured will be 4,000 units. However, the prices of direct material will increase by 10% and direct wages will increase by 15%. The fixed factory overheads will reduce by 20%.

The company desires to earn a profit of 11% on selling price.

Calculate the selling price per desk in the month of June when the monthly output is 4,000 units. ***(5 Marks)***

(b) *The following information relates to two workers - Ajoy and Bijoy who are engaged in producing the same product by using the same material:*

Time allowed to make the product:	*40 hours*
Actual time taken to complete the product	*32 hours by Ajoy* *30 hours by Bijoy*
Normal Wage Rate	*Same for both*
Bonus payment plan	*Halsey 50% plan for Ajoy* *Rowan plan for Bijoy*

Factory overhead recovered	*@₹ 360 per hour for actual time taken by each worker.*
Factory cost for the product for each worker	*₹ 1,24,800 Ajoy* *₹ 1,24,800 Bijoy*

Required:

(i) Compute the normal hourly wage rate.

(ii) Compute the cost of material used. ***(5 Marks)***

(c) MD Limited has furnished following information for the month of August, 2025:

Standard Variable Overhead rate	*₹ 3 per hour*
Standard Hours for per unit of production	*5 hours*
Actual Output	*15,560 units*
Variable Overhead Efficiency Variance	*₹ 11,400 (F)*
Variable Overhead Expenditure Variance	*₹ 37,000 (A)*
Standard Fixed Overhead rate	*₹ 2 per hour*
Actual Fixed Overheads	*₹ 1,85,000*

You are required to calculate:

(i) Actual Hours

(ii) Actual Variable Overhead rate per hour

(iii) Variable Overhead Cost Variance

(iv) Fixed Overhead Cost Variance ***(4 Marks)***

Answer

(a) Statement of total cost and Sales

Particulars	**Amount (₹)**
Direct Material ($\frac{15,00,000}{3,000}$ x 4,000) x 110%	22,00,000
Direct Labour ($\frac{6,00,000}{3,000}$ x 4,000) x 115%	9,20,000

Factory Overheads:	
Variable (4,000 x 100)	4,00,000
Fixed (50,000 x 80%)	40,000
Total Cost	35,60,000
Profit (Bal. Fig)	4,40,000
Sales (35,60,000/89%)	40,00,000
No of units	4,000
Selling Price per unit	**1,000**

Calculation of fixed and variable factory overhead

Variable Factory overhead (per unit) = $\frac{4,30,000 - 3,50,000}{3,800 - 3,000}$ = ₹ 100

Fixed factory overheads {3,50,000 - (3,000 x 100)} = ₹ 50,000

(b) **Step 1:** Let X be the cost of material and Y be the normal rate of wages per hour.

Step 2: Factory Cost of Worker 'Ajoy'

	(₹)
A. Material Cost	X
B. Wages (Halsey Plan)	32 Y
C. Bonus = 50% of (SH - AH) × R	4 Y
= 50% of (40 - 32) × R	
D. Overheads (32 hours × ₹ 360 per hour)	11,520
E. Factory Cost	1,24,800
Or X + 36 Y = ₹1,24,800 (Given) – ₹11,520 = ₹ 1,13,280.....equation (i)	

Step 3 : Factory Cost of Worker 'Bijoy'

	(₹)
A. Material Cost	X
B. Wages (Rowan Plan)	30 Y
C. Bonus = $\frac{30}{40}$ × (40 - 30) × Y	7.5 Y
D. Overheads (30 hours × ₹ 360 per hour))	10,800

E. Factory Cost	1,24,800
Or X + 37.5 Y = ₹ 1,24,800 (Given) – ₹ 10,800 = ₹ 1,14,000.....equation (ii)	

Step 4: Subtracting equation (i) from equation (ii)

1.5Y = ₹ 720

Y = ₹ 480 per hour

(a) The normal rate of wages: ₹ 480 per hour

(b) The cost of material: X + 36 × ₹ 480 = ₹ 1,13,280

Or X = ₹ 1,13,280 – ₹ 17,280 = ₹ 96,000

Statement of the Factory Cost of the product made by the two workers

	'Ajoy' (₹)	**'Bijoy' (₹)**
Material cost	96,000	96,000
Direct Wages	15,360 (32 x ₹ 480)	14,400 (30 x ₹ 480)
Bonus	1,920 (4 x ₹ 480)	3,600 (7.5 x ₹ 480)
Factory Overhead	11,520	10,800
Factory Cost	**1,24,800**	**1,24,800**

(c) (i) Actual Hours

Variable overhead efficiency variance:

(Standard hours for Actual Production – Actual Hours) x Standard Rate

{(15,560 x 5) - Actual Hours} x 3 = ₹ 11,400 F

Actual Hours = 74,000

(ii) Actual Variable Overhead rate per hour

Variable overhead expenditure Variance:

Std. overhead for Actual hours – Actual Variable Overhead

(74,000 x 3) – Actual Variable overheads = ₹ 37,000 (A)

Actual Variable overhead = ₹ 2,59,000

Actual Variable Rate per hour = $\frac{2,59,000}{74,000}$ = ₹ 3.5 per hour

(iii) Variable overhead Cost Variance

Variable overhead Efficiency Variance + Variable overhead Expenditure Variance

11,400 (F) + 37,000 (A) = ₹ 25,600(A)

(iv) Fixed Overhead cost Variance

Fixed overhead Cost Variance:

(Absorbed Fixed Overheads) - (Actual Fixed Overheads)

(SH × SR) – (AH × AR)

(77,800 x 2) – 1,85,000 = ₹29,400 (A)

Question 2

(a) *XYZ Highway Toll Plaza Limited operates a toll plaza on a 100 km highway and collects tolls from vehicles passing through the plaza. The company has estimated that every year a total of ₹ 60 lakh vehicles (60% Passenger vehicles, 15% Heavy Commercial Vehicles and rest are Buses) will be using the highway during the 15 years toll collection tenure.*

Toll Operating and Maintenance cost for the month (30 days in a month) are as follows:

(1) Personnel Costs (Salaries):

Collection Personnel:

- *Number of shifts: 3*
- *Number of toll collection personnel per shift: 10*
- *Salary per day per person: ₹ 800*

Supervisors:

- *Number of supervisors per shift: 3*
- *Number of supervisors per shift: 3*
- *Salary per day per supervisor: ₹ 1,200*

Security Personnel:

- *Number of shifts: 3*
- *Number of security personnel per shift: 10*
- *Salary per day per security person: ₹ 500*

Toll Plaza Manager:

- *Number of shifts: 2*
- *Number of managers per shift: 1*
- *Salary per day per manager: ₹ 2,000*

(2) Other Annual costs:

Electricity	*₹ 14,40,000*
Telephone & Communication Cost	*₹ 2,40,000*
Maintenance Cost	*₹ 60,00,000*
Depreciation and amortization	*₹ 12,00,00,000*
Insurance and safety cost	*₹ 15,00,000*
Interest expense incurred for servicing term loans	*₹ 7,83,48,000*

The toll rate per vehicle is to be fixed as under:

Heavy commercial vehicles	*500% of toll rate for Passenger vehicle*
Bus	*400% of toll rate for Passenger vehicle*

Required:

(i) Calculate the total cost per month for the toll plaza.

(ii) The company aims to achieve a 20% profit margin over total takings. Calculate the toll rate to be charged for each type of vehicle. (Assume a 360 days year) ***(10 Marks)***

(b) A factory has three production departments, P_1, P_2, P_3 and two service departments S_1, and S_2 Both the service departments are independent and provide services to each other. Following is the detail of expenses of each service department:

Department	*Amount (₹)*
S_1	*1,60,000*
S_2	*2,40,000*

Further the expenses of department S1 and S2 are apportioned on the following basis:

	P1	*P2*	*P3*	*S1*	*S2*
S1	*25%*	*35%*	*20%*	*-*	*20%*
S2	*35%*	*30%*	*25%*	*10%*	*-*

You are required to apportion the expenses of departments S_1 and S_2 to production departments P_1, P_2 and P_3 using Simultaneous Equation Method.

(4 Marks)

Answer

(a) (i) Statement of Cost

Particulars	**Amount (₹)**
Personnel Cost:	
Collection Personnel (3 x 10 x 800 x 30)	7,20,000
Supervisor (2 x 3 x 1,200 x 30)	2,16,000
Security Personnel (3 x 10 x 500 x 30)	4,50,000
Toll Plaza manager (2 x 1 x 2,000 x 30)	1,20,000
Other Cost:	
Electricity	1,20,000
Telephone and Communication	20,000
Maintenance Cost	5,00,000
Depreciation and Amortization	1,00,00,000
Insurance and Safety Cost	1,25,000
Interest Expense	65,29,000
Total Cost	**1,88,00,000**

(ii)

Total cost	₹ 1,88,00000
Profit	₹ 47,00,000
Takings (1,88,00,000/80%)	₹ 2,35,00,000
No. of vehicles (monthly)	
Passenger vehicles (5,00,000 x 60%)	3,00,000
Heavy Commercial vehicles (5,00,000 x 15%)	75,000
Buses (5,00,000 x 25%)	1,25,000
Let the toll rate for Passenger vehicles be	X
Then toll rate for Heavy Commercial vehicles be	5X
Then toll rate for Buses be	4X

Therefore

3,00,000*X +75,000*5X +1,25,000*4X = 11,75,000X = ₹ 2,35,00,000

X = ₹ 2,35,00,000/11,75,000 = ₹ 20

Toll Rate (per vehicle)

Passenger vehicles	20
Heavy Commercial vehicles	100
Buses	80

(b) The total expenses of the two service departments will be determined as follows:

S1 = 1,60,000 + 0.10 S2

S2 = 2,40,000 + 0.20 S1

Substituting the value of S1,

S2 = 2,40,000 + 0.20 (1,60,000 + 0.1 S2)

= 2,40,000 + 32,000 + 0.02 S2

= 2,72,000 + 0.02 S2

S2 - 0.02 S2 = 2,72,000

$$S2 = \left(\frac{2,72,000}{0.98}\right) = ₹\ 2,77,551$$

The total of expenses of the S2 is ₹ 2,77,551 and that of the S1 is ₹ 1,87,755 *i.e.,* ₹ 1,60,000 + 0.1 x ₹ 2,77,551.

The expenses will be allocated to the production departments as under:

	Production Department		
	Dept.-P1	**Dept.-P2**	**Dept.-P3**
S1 (25%, 35% and 20% of ₹1,87,755)	46,939	65,714	37,551
S2(35%, 30% and 25% of ₹ 2,77,551)	97,143	83,265	69,388
Total	1,44,082	1,48,979	1,06,939

The total of expenses apportioned to P1, P2 and P3 is ₹ 4,00,000.

Question 3

(a) A consultancy firm provides project management service in three sectors Technology, Healthcare and Education. The Project management service covers development and implementation of software for various MIS requirements of its clients. The fees charged per project is as follows:

Technology: ₹ 90,000

Healthcare: ₹ 1,20,000

Education: ₹ 1,10,000

The company uses Activity-Based Costing (ABC) to allocate its overhead costs. For the month of August 2025, the following informations are provided:

Service Sector	***Number of Projects***	***Software Development Hours***	***Consulting Hours***	***Number of Client Meetings***
Technology	*20 projects*	*10,000 hours*	*6,400 hours*	*30*
Healthcare	*10 projects*	*7,000 hours*	*5,600 hours*	*20*
Education	*10 projects*	*5,000 hours*	*2,000 hours*	*40*

Overhead Costs and Activities:

Activity	***Total Cost (₹)***	***Cost Driver***
Management of Projects	*8,10,000*	*Number of projects*
Consulting Service Delivery	*4,20,000*	*Consulting hours*
Client Interaction & Meetings	*6,30,000*	*Number of client meetings*
Administration and Support	*15,40,000*	*Software development hours*

You are required to:

(i) Prepare a statement showing the total cost and per project cost of project management service for each service sector Technology, Healthcare and Education using Activity Based Costing Approach.

(ii) Identify the most profitable sector based on profitability percentage on fees charged. ***(8 Marks)***

(b) SM Limited is the manufacturer of the two products A & B. The following particulars are extracted from the records of the company:

	A	***B***
Maximum Capacity	*5,000 units*	*3,500 units*
Selling price per unit	*₹ 1,000*	*₹ 1,500*
Cost per unit:		
Raw Material @ ₹ 20 per kg	*₹ 200*	*₹ 400*
Wages @ 10 per hour	*₹ 150*	*₹ 100*
Direct Expenses	*₹ 200*	*₹ 300*
Variable overhead	*₹ 80*	*₹ 120*

The total fixed overhead for product A is ₹ 2,50,000 and for product B is ₹ 3,50,000.

The company manufactures both the products using the same grade of material. The company is facing a constraint of raw material which is available in limited quantity of 1,10,000 kgs only.

Required:

Determine the optimum product mix, considering material as the limiting factor, to generate maximum profit and calculate the maximum profit.

(6 Marks)

Answer

(a) (i) Statement Showing "Total cost and Cost *per project* - Activity Based Costing"

Particulars	Technology	Healthcare	Education
Management of Project @ ₹ 20,250 per project (20,10,10)	4,05,000	2,02,500	2,02,500
Consulting Service Delivery @ ₹30 per hour (6,400, 5,600, 2,000)	1,92,000	1,68,000	60,000
Client Interaction and Meeting @ ₹ 7,000 per meeting (30,20,40)	2,10,000	1,40,000	2,80,000
Administration and Support @ ₹ 70 per hour (10,000, 7,000, 5,000)	7,00,000	4,90,000	3,50,000
Total Cost	15,07,000	10,00,500	8,92,500
Project	20	10	10
Cost per Project	75,350	1,00,050	89,250
Fee Charged	90,000	1,20,000	1,10,000
% of fee Charged	119.44	119.94	123.25
OR			
Profit	14,650	19,950	20,750
Profitability %	16.28%	16.63%	18.86%

(ii) Education is the most profitable sector.

Working Note:

Statement showing calculation of Cost Driver rate

Activity	Total Cost	Cost Driver Basis	Cost Driver	Cost Driver Rate
	(₹)		(Units)	(₹)
Management of Project	8,10,000	No of Projects	40	20,250 per project
Consulting Service Delivery	4,20,000	Consulting Hours	14,000	30 per hour
Client Interaction and Meeting	6,30,000	No of client meeting	90	7,000 per meeting
Administration and Support	15,40,000	Software Development Hours	22,000	70 per hour

(b)

	A	B
	(₹)	(₹)
Selling Price	1,000	1,500
Less: Direct Materials	200	400
Direct Labour	150	100
Direct Expenses	200	300
Variable Overheads	80	120
Contribution per unit	370	580
Raw Material required per unit	10 kg	20 kg
Contribution per kg of raw material	37	29
Rank	I	II

Calculation of Product Mix:

Raw material available	1,10,000 kg	
Product A (5,000 x 10)	50,000 kg	5,000 units
Product B (3,000 x 20)	60,000 kg	3,000 units

Statement of Profit:

Particulars	A	B	Total
Units	5,000	3,000	
Total Contribution	18,50,000	17,40,000	35,90,000
Fixed Cost	2,50,000	3,50,000	6,00,000
Profit	**16,00,000**	**13,90,000**	**29,90,000**

Question 4

(a) SVS Limited manufactures a single product 'Al'. The company has estimated its quarter-wise sales for the next year as follows:

Quarter	***I***	***II***	***III***	***IV***
Sales (Units)	*72,000*	*90,000*	*99,000*	*1,08,000*

In the beginning of the year, the opening stock of finished goods is 14,400 units and the company expects to maintain the closing stock of finished goods at 29,400 units at the end of the year. The production pattern in each quarter is based on 80% of the sales of the current quarter and 20% of the sales of the next quarter. The company maintains this 20% of sales of next quarter as closing stock of current quarter.

The opening stock of raw materials in the beginning of the year is 24,000 kgs and the closing stock at the end of the year is required to be maintained at 12,000 kgs. Each unit of finished output requires 2 kgs of raw material. The production time required to produce one unit of product 'A1' is 5 hours.

During the production, the product uses two machines as under:

Product	***Machine A***	***Machine B***	***Total***
A1	*2 hours*	*3 hours*	*5 hours*

Machine A requires 100 hours of maintenance after a use of 5000 hours and Machine B requires 100 hours of maintenance after use of 3000 hours.

Required:

(i) Prepare quarter-wise Production Budget (in units) and the Raw Material Consumption budget (in quantity) for the next year.

(ii) *Calculate total machine hours including maintenance time required during the year for Machine A and Machine B to manufacture product 'A1'.* ***(9 Marks)***

(b) *Sundar Limited maintains its Cost Accounting System on the basis of Non-Integral System of Accounting. The following transactions arose during the month of August, 2025:*

Particulars	***Amount (₹)***
Materials purchased on credit	*10,25,000*
Materials issued to production (Direct)	*5,55,000*
Direct Wages allocated to production	*3,00,000*
Factory Overheads over-absorbed	*2,20,000*
Administration Overheads under-absorbed	*1,40,000*

Required:

Journalize the above-mentioned transactions in Cost Books maintained on Non-Integrated System of Accounting. ***(5 Marks)***

Answer

(a) (i) Production Budget (in units)

Quarters	**I Units**	**II Units**	**III Units**	**IV Units**	**Total Units**
Sales	72,000	90,000	99,000	1,08,000	3,69,000
Production in current quarter	57,600	72,000	79,200	86,400	
(80% of the sale of current quarter)					
Production for next quarter	18,000	19,800	21,600	29,400	
(20% of the sale of next quarter)					
Total production	75,600	91,800	1,00,800	1,15,800	3,84,000

Raw material consumption budget in quantity

Quarters	I	II	III	IV	Total
Units to be produced in each quarter: (A)	75,600	91,800	1,00,800	1,15,800	3,84,000
Raw material consumption p.u. (kg.): (B)	2	2	2	2	
Total raw material consumption (Kg.): (A × B)	1,51,200	1,83,600	2,01,600	2,31,600	7,68,000

(ii)

	Machine A	Machine B
Units to be produced	3,84,000	3,84,000
Machine hours per unit	2	3
Total Hours	7,68,000	11,52,000
Maintenance Hours	15,360	38,400
Total machine hours including maintenance	**7,83,360**	**11,90,400**

(b) Journal entries are as follows:

			Dr.	Cr.
			(₹)	(₹)
1.	Stores Ledger Control A/c	Dr.	10,25,000	
	To Cost Ledger Control A/c			10,25,000
	(Materials purchased)			
	OR			
	Material Control A/c	Dr.	10,25,000	
	To Cost Ledger Control A/c			10,25,000
	Stores Ledger Control A/c	Dr.	10,25,000	
	To Material Control A/c			10,25,000
2.	Work-in-Process Control A/c	Dr.	5,55,000	
	To Store Ledger Control A/c			5,55,000
	(Materials issued to production)			
3.	Work-in-Process Control A/c	Dr.	3,00,000	
	To Wages Control A/c			3,00,000
	(Direct wages charged to production)			

4.	Factory Overheads Control A/c To Costing Profit & Loss A/c (Factory overheads over absorbed)	Dr.	2,20,000	2,20,000
5.	Costing Profit & Loss A/c To Administrative Overhead Control A/c (Admin overheads under absorbed)	Dr.	1,40,000	1,40,000

Question 5

(a) TS Limited is suffering from material deterioration and finds that their valuable stocks are not properly stored. The company furnishes following information:

Serial No.	Material Name	Units	Total Cost (₹)
1	MA	54,105	14,855
2	MB	32,300	12,823
3	MC	28,600	13,972
4	MD	10,250	47,685
5	ME	23,410	39,015
6	MF	2,580	1,08,260
7	MG	8,900	89,410
8	MH	4,855	98,980

Store-keeper of the company argues that he has taken proper care in storing three types of material named MA, MB and MC as they are in bulk quantity. He further argues that only a few units of material MG and MH has been deteriorated due to bad weather.

The management of TS Limited wants to get him aware about value of different items.

Required:

Rank the materials and draw a plan of ABC selective control by using the following basis of selective control.

₹ 50,000 & above	*'A' category items*

₹ 15,000 to ₹ 50,000	*'B' category items*
Below ₹ 15.000	*'C' category items*

(8 Marks)

(b) A company manufactures electronic gadgets and uses a specialized component. The company incurs an ordering cost of ₹ 1,250 per order. The carrying cost for storing the specialized components is ₹ 25 per unit per annum. The company's annual production is 90,000 gadgets, and each gadget requires one component for its assembly.

You are required to calculate:

(i) Economic Order Quantity

(ii) Number of orders to be placed in a year ***(3 Marks)***

(c) Complete the table regarding accounting entries pertaining to Over/Under 3 absorption of overheads:

Absorption of overhead	***Accounts***	***Dr/Cr***	***Calculation of Amount Formula***
Under-absorption	*Stock of Finished goods Account*		
Over-absorption	*Stock of Semi-finished goods (WIP) Account*		
Under-absorption	*Cost of Sales Account*		

(3 Marks)

Answer

(a) Statement of Total Cost and Ranking

Item	Material Name	Units	% of Total units	Total cost (₹)	% of Total cost	Ranking
1	MA	54,105	32.80	14,855	3.49	6
2	MB	32,300	19.58	12,823	3.02	8
3	MC	28,600	17.33	13,972	3.29	7

4	MD	10,250	6.21	47,685	11.22	4
5	ME	23,410	14.19	39,015	9.18	5
6	MF	2,580	1.56	1,08,260	25.47	1
7	MG	8,900	5.39	89,410	21.04	3
8	MH	4,855	2.94	98,980	23.29	2
		1,65,000	100	4,25,000	100	

Basis for selective control

₹ 50,000 & above -- 'A' items

₹ 15,000 to 50000 -- 'B' items

Below ₹ 15,000 -- 'C' items

On this basis, a plan of A B C selective control is given below:

Ranking	Item Nos.	% of Total units	Cost (₹)	% of Total Cost	Category
1	6	1.56	1,08,260	25.47	
2	8	2.94	98,980	23.29	
3	7	5.39	89,410	21.04	
Total	**3**	**9.89**	**2,96,650**	**69.80**	**A**
4	4	6.21	47,685	11.22	
5	5	14.19	39,015	9.18	
Total	**2**	**20.40**	**86,700**	**20.40**	**B**
6	1	32.80	14,855	3.49	
7	3	17.33	13,972	3.29	
8	2	19.58	12,823	3.02	
Total	**3**	**69.71**	**41,650**	**9.80**	**C**
Grand Total	**8**	**100**	**4,25,000**	**100**	

(b) EOQ $= \sqrt{\frac{2 \times A \times O}{C}}$

A = Units consumed during year = 90,000 components

O = Ordering cost per order = ₹ 1,250

C = Inventory carrying cost per unit per annum = ₹ 25

EOQ $= \sqrt{\frac{2 \times 90{,}000 \times 1{,}250}{25}} = 3{,}000$ components

No. of orders to be placed in a year

$$= \frac{\text{Total consumption of materials per annum}}{\text{EOQ}}$$

$$= \frac{90{,}000}{3{,}000} = 30 \text{ orders per year}$$

(c) Accounting entries pertaining to over/under absorption of overheads

Absorption of Overhead	Accounts	Dr/Cr	Calculation of Amount Formula
Under-absorption	Stock of Finished Goods Account	Dr	Units of Finished Stock x Supplementary rate per unit
Over-absorption	Stock of Semi-finished Goods (WIP) Account	Cr	Equivalent Completed Units x Supplementary rate per unit
Under-absorption	Cost of Sales Account	Dr	Units sold x Supplementary rate per unit

Question 6

(a) Define Responsibility Centre and discuss the types of Responsibility Centres. ***(5 Marks)***

(b) List the advantages of Job Costing. ***(5 Marks)***

(c) List the important factors which need consideration for controlling employee costs. ***(4 Marks)***

OR

(c) Discuss the uses of Bill of Material in the following departments:

(i) Marketing (Purchase) Department

(ii) Production Department

(iii) Stores Department

(iv) Cost/Accounting Department ***(4 Marks)***

Answer

(a) As the organization grows, its functions, organisational structure and other related functions also grow in terms of volume and complexity. To have a better control over the organisation, management delegates its responsibility and authority to various departments or persons. These departments or persons are known as responsibility centres and are held responsible for performance in terms of expenditure, revenue, profitability and return on investment.

Types of Responsibility Centres are as follows:

(i) **Cost Centres:** The responsibility centre which is held accountable for incurrence of costs which are under its control.

(ii) **Revenue Centres:** The responsibility centres which are accountable for generation of revenue for the entity.

(iii) **Profit Centres:** These are the responsibility centres which have both responsibility of generation of revenue and incurrence of expenditures. Profitability is the basis for measurement of performance of these responsibility centres.

(iv) **Investment Centres:** These are the responsibility centres which are not only responsible for profitability but also have the authority to make capital investment decisions. The performance of these responsibility centres are measured on the basis of Return on Investment (ROI) besides profit.

(b) Some of the advantages of Job costing are summarised as below:

1. The details of Cost of material, labour and overhead for all job is available to control.

2. Profitability of each job can be derived.
3. It facilitates production planning.
4. Budgetary control and Standard Costing can be applied in job costing.
5. Spoilage and defective can be identified and responsibilities can be fixed accordingly.

(c) The main points which need consideration for controlling employee costs are the following:

(i) Assessment of manpower requirements.

(ii) Control over time-keeping and time-booking.

(iii) Time & Motion Study.

(iv) Control over idle time and overtime.

(v) Control over employee turnover.

(vi) Wage and Incentive systems.

(vii) Job Evaluation and Merit Rating.

(viii) Employee productivity.

OR

(c) Uses of Bill of Material

Marketing (Purchase) Dept.	**Production Dept.**	**Stores Dept.**	**Cost/ Accounting Dept.**
Materials are procured (purchased) on the basis of specifications mentioned in it.	Production is planned according to the nature, volume of the materials required to be used. Accordingly, material requisition lists are prepared.	It is used as a reference document while issuing materials to the requisitioning department.	It is used to estimate cost and profit. Any purchase, issue and usage are compared/verified against this document.