



PAPER – 4: COST AND MANAGEMENT ACCOUNTING



QUESTIONS

PART I - Case Scenario based MCQs

Case Scenarios

1. Kaveri Consumer Durables Limited (KCDL) is a Pune-based trading and distribution company incorporated in the year 2008 by a group of first-generation entrepreneurs. The company does not undertake any manufacturing activity; it acts as the authorised regional distributor for Western Maharashtra of a leading national brand of home appliances. KCDL operates two warehouses at Chakan and Kolhapur, a fleet of 18 delivery vehicles and a field sales team of 25 executives who regularly visit retail outlets for taking orders and servicing their accounts.

The flagship product of the company is the 'CoolBreeze 1.5 Ton 5-Star Inverter Split AC', an energy-efficient model which contributes nearly 70% of the company's turnover. KCDL buys the CoolBreeze AC from the manufacturer at ₹ 16,200 per unit and sells it to multi-brand retail chains at a listed price of ₹ 19,440 per unit.

Owing to rising summer temperatures and growing awareness about energy-efficient appliances, the demand for inverter air-conditioners has increased sharply. At the same time, competition among retail chains has intensified and large retailers have started demanding higher price discounts, frequent small-lot deliveries, additional sales visits and urgent (expedited) deliveries during the peak season. The Chief Financial Officer (CFO) of KCDL has observed that although the sales volume has grown by

about 40% during the year, the overall profitability of the company has not increased proportionately. The CFO has, therefore, recommended that the traditional practice of evaluating customers only on the basis of sales volume be replaced by a customer profitability analysis.

Accordingly, the sales department of KCDL has decided to analyse the profitability of its four new retail customers, namely Sahyadri Electronics Mart (SEM), Deccan Home Appliances (DHA), Konkan Digital World (KDW) and Shivneri Retail Hub (SRH), using activity-based costing method. The data pertaining to these four customers are:

	Customers			
	SEM	DHA	KDW	SRH
Units sold	13,500	18,000	28,500	38,250
Actual Selling Price	₹ 19,440	₹ 19,116	₹ 17,820	₹ 17,496
Number of Purchase orders	15	25	30	30
Number of Customer visits	2	3	6	3
Number of deliveries	10	30	60	20
Kilometers travelled per delivery	20	6	5	30
Number of expedited deliveries	0	0	1	2

After a detailed analysis and computation, the following activities has been identified and respective cost has been calculated:

Activity	Cost Driver Rate
Order taking	₹ 13,500 per purchase order
Customer visits	₹ 10,800 per customer visit
Deliveries	₹ 22.50 per delivery Km travelled
Product handling	₹ 67.50 per unit sold
Expedited deliveries	₹ 40,500 per expedited delivery

You are required to compute the following different cost information for managerial decision making:

- (i) How much cost on customer visits is incurred on Shivneri Retail Hub (SRH)?
 - (A) ₹ 21,600
 - (B) ₹ 32,400
 - (C) ₹ 64,800
 - (D) ₹ 10,800
- (ii) What is the cost of goods sold for Konkan Digital World (KDW)?
 - (A) ₹ 21,87,00,000
 - (B) ₹ 29,16,00,000
 - (C) ₹ 46,17,00,000
 - (D) ₹ 61,96,50,000
- (iii) How much is the cost of expediting deliveries for Shivneri Retail Hub (SRH)?
 - (A) ₹ 40,500
 - (B) ₹ 81,000
 - (C) ₹ 1,21,500
 - (D) ₹ 0
- (iv) Compute the customer level operating activities costs of Sahyadri Electronics Mart (SEM)
 - (A) ₹ 15,88,950
 - (B) ₹ 4,37,29,200
 - (C) ₹ 11,39,850
 - (D) ₹ 4,64,58,225

- (v) Compute the customer-level operating income of Deccan Home Appliances (DHA) and Shivneri Retail Hub (SRH) respectively.
- (A) ₹ 4,26,00,150 & ₹ 4,37,29,200
- (B) ₹ 5,08,99,050 & ₹ 4,64,58,225
- (C) ₹ 4,37,29,200 & ₹ 5,08,99,050
- (D) ₹ 4,64,58,225 & ₹ 5,08,99,050
2. Alpha Ltd. produces a product A, which passes through three processes: Process P, Process Q and Process R. The entire output of each process passes directly to the next process, and the output of Process R is transferred to the warehouse. The cost and output data for April 2026 are given below.

Particulars	Process P (₹)	Process Q (₹)	Process R (₹)
Direct Material	38,000	42,500	42,880
Direct Labour	30,000	40,000	50,000
Output transferred (kg)	9,000	8,200	7,300

Additional information:

- Production overheads of ₹90,000 were recovered as a percentage of direct labour.
- 10,000 kg of raw material @ ₹5 per kg was issued to Process P. There was no opening or closing stock of materials or work in process.
- Each process has a normal wastage of 10% of its input. Scrap value of wastage is ₹1 per kg.
- The company fixes the selling price of the end product so as to earn a profit of 25% on selling price.

Questions

Choose the correct option for each question.

- (i) The cost per kg of output transferred from Process P to Process Q is:
(A) ₹14.05
(B) ₹15.50
(C) ₹15.61
(D) ₹13.95
- (ii) In Process Q, the input is 9,000 kg, normal wastage is 900 kg and the actual output is 8,200 kg. This shows:
(A) Abnormal loss of 100 kg
(B) No abnormal loss or gain
(C) Abnormal gain of 100 kg
(D) Abnormal gain of 200 kg
- (iii) The cost per kg of output of Process Q is:
(A) ₹27.90
(B) ₹28.00
(C) ₹30.73
(D) ₹31.00
- (iv) In Process R, the abnormal loss and its value (at ₹52 per kg) are:
(A) 70 kg; ₹4,160
(B) 90 kg; ₹4,240
(C) 80 kg; ₹2,480
(D) 80 kg; ₹820

- (v) If Alpha Ltd. wants a profit of 25% on selling price, the selling price per kg of the end product should be:
- (A) ₹65.00
 - (B) ₹78.00
 - (C) ₹69.33
 - (D) ₹74.29
3. Sunrise Fabricators Ltd., a medium-sized engineering unit located in the Vadodara industrial belt, manufactures precision-machined components for the automotive and pump industries. The company employs a team of skilled turners, fitters and machine operators in its machine shop, and the management strongly believes in linking a part of employee remuneration to individual efficiency. Accordingly, it operates premium-bonus incentive schemes to reward workers who complete their jobs in less than the standard time set by the rate-setting department.
- For its skilled workers, the company pays a guaranteed wage rate of ₹ 90 per hour. For a particular precision product, the rate-setting department has fixed a standard time of 4 hours per unit.
- Mr. R, an experienced turner in the machine shop, is at present remunerated under the Rowan Incentive Plan. On the manufacture of this product during the period, Mr. R earned an effective hourly rate of ₹112.50.
- As part of a periodic review of its incentive policy, the management wishes to compare the outcome under an alternative scheme. Had Mr. R been put on the Halsey Incentive Scheme (50%) instead, his total earnings and effective hourly rate respectively would be:
- (A) ₹ 315 and ₹ 105
 - (B) ₹ 270 and ₹ 90
 - (C) ₹ 337.50 and ₹ 112.50
 - (D) ₹ 360 and ₹ 120

4. Sunrise Industries Ltd. is a manufacturing company engaged in the production of precision engineering components for the automobile and consumer-durable industries. The company operates a single manufacturing unit and follows an integrated cost accounting system under which material, labour and overhead costs are compiled every month.

The following information has been extracted from its cost records for the period from August 1 to August 31, 2026, on the basis of which the management wishes to ascertain the cost of goods sold for the month.

	On August 1 (₹)	On August 31 (₹)
Cost of raw materials	1,38,000	1,15,000
Cost of work-in-process	27,600	34,500
Cost of stock of finished goods	2,07,000	2,53,000
Purchase of raw materials during August 2026		11,04,000
Wages paid		5,52,000
Factory overheads		2,30,000
Administration overheads (related to production)		1,15,000
Sales		23,00,000

CALCULATE the Cost of Goods Sold for the month of August 2026.

- (A) ₹ 19,02,100
 (B) ₹ 19,71,100
 (C) ₹ 20,17,100
 (D) ₹ 20,63,100

5. Sunrise Agro Processing Ltd., Guntur, processes groundnuts through a single process. At the split-off point it yields two joint products: Groundnut Oil (P) and Groundnut Cake (Q). Sales are P: 400 kg @ ₹80 per kg and Q: 500 kg @ ₹40 per kg. Joint marginal cost is ₹31,200 and fixed cost is ₹15,600. Using the Contribution Margin Method, in what ratio will the fixed cost be apportioned between P and Q?
- (A) 8 : 5
(B) 3 : 2
(C) 5 : 4
(D) 8 : 3
6. A manufacturing company has two production departments, Dept.-A and Dept.-B, and two service departments, Power House and Maintenance Department. The primary (departmental) expenses of the two service departments and the basis of their apportionment are given below:

Service departments' expenses

Particulars	(₹)
Power House	1,50,000
Maintenance Department	30,000
Total	1,80,000

The allocation basis is:

	Production Department		Service Department	
	A	B	Power House	Maintenance Department
Power House	60%	35%	-	5%
Maintenance Department	10%	40%	50%	-

Using the simultaneous equation method, the total of expenses of the Power House and the Maintenance Department (respectively), to be allocated to the production departments, will be:

- (A) ₹ 1,50,000 and ₹ 30,000

- (B) ₹ 1,65,000 and ₹ 37,500
 (C) ₹ 1,69,231 and ₹ 38,462
 (D) ₹ 38,462 and ₹ 1,69,231
7. You are given the following data for the year ended 31st March, 2026 of ABC Textiles Ltd:

Variable cost	9,62,400	60%
Fixed cost	4,81,200	30%
Net profit	1,60,400	10%
Sales	16,04,000	100%

Based on the above data, the Break-even point (in ₹), P/V ratio and Margin of safety (in ₹) respectively will be:

- (A) ₹ 12,03,000; 40%; ₹ 4,01,000
 (B) ₹ 4,81,200; 40%; ₹ 12,03,000
 (C) ₹ 12,03,000; 60%; ₹ 4,01,000
 (D) ₹ 4,01,000; 40%; ₹ 12,03,000

PART - II Descriptive Questions

Material Cost

8. Meghdoot Appliances Limited is a Pune-based manufacturer of energy-efficient BLDC (Brushless Direct Current) ceiling fans (specifically Component STX-165). With demand for the company's flagship fan range, the stores department has been directed by the management to re-fix the stock control levels for Component STX-165. On a review of the purchase and stores records of the company for the year 2025-26, the following particulars relating to the component were placed before the Cost Accountant.

During the year, the company expects to purchase 16,50,000 units of the component, the purchase price per unit inclusive of transportation cost being ₹ 165. Each purchase order placed on the vendor costs the company

₹ 13,200 by way of ordering cost, while the annual cost of storage is estimated at ₹ 33 per unit.

The remaining particulars relating to lead time and the rate of consumption of the component are set out below:

Details of lead time : Average – 10 days, Maximum – 15 days, Minimum – 5 days, and for emergency purchases – 4 days.

Rate of consumption : Average – 4,950 units per day,
Maximum – 6,600 units per day.

From the details given above, CALCULATE:

- (i) Re-ordering level;
- (ii) Maximum level;
- (iii) Minimum level; and
- (iv) Danger level.

Employee Cost and Direct Expenses

9. eX Precision Engineering Pvt. Ltd. operates a machine shop employing 35 workers, each working 8 hours per day including a 30-minute lunch break, worked for 160 days during a period of six months ended on 31st December, 2025. The lunch break is unpaid and is not treated as working time.

During this period, the total wages paid to these workers amounted to ₹ 2,52,000, which includes ₹ 30,000 paid as overtime premium and ₹ 12,000 paid as shift/production allowance — neither of which forms part of the basic wages. However, Dearness allowance and bonus of ₹ 42,000 and ₹ 21,000 respectively were paid at the end of the period.

The management of the company decided the overtime premium rates for the month of January 2026 as under:

Sundays and holidays	200% of basic wage rate
Before and after normal working hours	150% of basic wage rate

During the last six months (ended on 31st December, 2025), the following hours were worked:

Particulars	Hours
Normal time	39,375
Sundays and holidays	525
Before and after normal working hours	2,100
Total hours	42,000

During the month of January 2026, the factory worked on a job AK-9 in the following manner:

Particulars	Men hours
Normal working	1,680
Overtime on Sundays and holidays	140
Overtime before and after normal working	280
Total hours	2,100

DA and Bonus shall be included to arrive at basic wages.

You are required to CALCULATE the labour cost chargeable to job AK-9 and overheads in each of the following situations:

- (i) Where overtime is worked regularly throughout the year as a matter of policy on account of shortage of workers.
- (ii) Where overtime is worked irregularly to cope with the general production programme / to meet the requirements of production.
- (iii) Where overtime is worked at the desire (request) of the customer to complete the job in time.
- (iv) Where overtime is worked on account of abnormal conditions such as earthquake in the area.

Overheads

10. Overheads: Absorption Costing Method

Pretz Ltd. is a manufacturing company having two production departments, 'A' & 'B' and two service departments 'X' & 'Y'. The following is the budget for March, 2026:

	Total (₹)	A (₹)	B (₹)	X (₹)	Y (₹)
Direct material		2,00,000	4,00,000	4,00,000	2,00,000
Direct wages		10,00,000	4,00,000	2,00,000	4,00,000
Factory rent	9,00,000				
Power (Machine)	5,10,000				
Depreciation	2,00,000				
General Lighting	3,00,000				
Perquisites	4,00,000				
Additional information:					
Area (Sq. ft.)		500	250	250	500
Capital value of assets (₹ lakhs)		40	80	20	20
Light Points		10	20	10	10
Machine hours		1,000	2,000	1,000	1,000
Horse power of machines		50	40	15	25

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

	A	B	X	Y
Service Dept. 'X' (%)	55	25	–	20
Service Dept. 'Y' (%)	60	35	5	–

You are required to:

- PREPARE a statement showing distribution of overheads to various departments.
- PREPARE a statement showing re-distribution of service departments expenses to production departments using-
 - Simultaneous equation method
 - Trial and error method
 - Repeated Distribution Method.

Cost Sheet

11. Prateek LED Industries Limited ('Prateek LED' or 'the Company'), a Noida-based manufacturing concern, is engaged in the production of a single model of premium energy-efficient LED bulb. Operating from its integrated manufacturing facility in the Greater Noida Industrial Area, the Company supplies its product to leading electrical retail chains and to Government electrification programmes across northern India. The management follows a cost-plus pricing policy. The following information relates to the Company for the year ended 31st March, 2026:

Particulars	Amount (₹)
Raw Material Purchased	36,00,000
Freight Inwards	2% on Raw Material Purchased
Packaging Cost (primary)	13,50,000
Fee Paid to Independent Directors	22,50,000
Production bonus paid to factory workers	10% of Wages paid to factory workers
Job charges paid to job workers	1,84,500
Wages paid to factory workers	28,35,000
Salary paid to Supervisor	27,80,550
Salary paid to General Manager	55,80,000
Salary paid to Production Control Manager	32,40,000
Sale of Scrap generated during Manufacturing	2,25,000
Selling Overheads per unit	9
Expenses Paid for Quality Control check activities	19,35,000

Other information:

- (i) The Factory Building was acquired at a cost price of ₹ 1,12,50,000 and stood at a written down value of ₹ 98,41,500 as on 1st April, 2025

- (ii) The Plant and Machinery, having a cost price of ₹ 67,50,000, had a written down value of ₹ 52,02,000 as on 1st April, 2025
- (iii) The Office Building, costing ₹ 1,80,00,000, carried a written down value of ₹ 1,62,00,000 as on 1st April, 2025
- (iv) Depreciation on Factory Building, Plant and Machinery & Office Building is charged on the written down value method @ 10%, 15% and 10% respectively.
- (v) Insurance cost of the Factory Building & Plant and Machinery is 2% each of its cost price with no insurance cover for Office Building.

Additional information:

- (i) The value of raw materials held in stock was ₹ 15,30,000 as on 1st April, 2025 and ₹ 8,10,000 as on 31st March, 2026, whereas the value of work-in-progress was ₹ 24,75,000 as on 1st April, 2025 and ₹ 15,75,000 as on 31st March, 2026.
- (ii) Stock of finished goods as on 1st April, 2025 was 80,000 units having a total cost of ₹ 36,00,000. The entire stock of opening finished goods is sold during the year and the closing stock is 70,000 units. During the period, 4,50,000 units were sold.
- (iii) The Company wants a profit of 25% on cost of sales.

You are required to PREPARE a Cost Statement showing the various elements of cost and the profit earned for the year ended 31st March, 2026.

Cost Accounting Systems

12. Sahyadri Precision Components Limited, incorporated in 2016, operates a machining plant at Chakan near Pune and manufactures precision machined components for automobile original-equipment manufacturers. The company maintains its cost accounts and financial accounts as two separate sets of books. The following figures are available from the financial records of Sahyadri Precision Components Limited for the year ended 31st March, 2026.

During the year, the company sold 66,000 units and realised sales of ₹ 82,50,000. As per the financial records, the materials consumed during the year amounted to ₹ 33,00,000 and the wages paid stood at 50% of the materials consumed. The factory overheads, the administrative overheads (relating to production) and the selling & distribution overheads incurred for the year were ₹ 14,85,000, ₹ 8,58,000 and ₹ 5,94,000 respectively. The closing stock of finished goods at the year-end was 4,059 units, carried in the financial books at a value of ₹ 4,95,000.

The remaining figures extracted from the financial records of the company are given below:

	(₹)	(₹)
Work-in-Process:		
Materials	99,000	
Labour	66,000	
Factory overheads	66,000	2,31,000
Loss on the sale of Fixed Assets		6,60,000
Expenses relating to issue of shares		66,000

In the Costing records, factory overhead is charged at 100% of wages, administrative overhead 10% of factory cost and selling and distribution overhead at the rate of ₹ 10 per unit sold.

You are required to PREPARE the following:

Profit & Loss Account (financial books) for the year;

Cost Sheet showing the profit as per the cost records; and

Reconciliation Statement reconciling the profit as per cost records with the profit as per financial records.

Joint Product and By-Product

- Satguru Oleochemicals Limited operates an integrated processing facility at Dahej, Gujarat, where a common crude feedstock is refined through a

single process up to the separation (split-off) point. The process simultaneously yields three joint products — Oleic Acid, Stearic Acid and Glycerine — all of which are measured in litres. Each joint product can either be sold in the open market at the separation point or be processed further into a higher-grade finished product. The company apportions its pre-separation (joint) costs over the three joint products on the basis of the weight (volume) of output of each product. The data relating to operations for a particular month are given below:

Cost incurred up to the separation point: ₹ 44,000

Particulars	Oleic Acid	Stearic Acid	Glycerine
Output (in litre)	100	70	80
Cost incurred after separation point (₹)	8,800	5,280	3,520
Selling price per litre (₹):			
After further processing	220	352	264
At pre-separation point (estimated)	110	308	198

Required:

- PREPARE a statement showing the profit or loss earned on each product after further processing, adopting the company's present method of apportioning the pre-separation cost.
- Zenith Nutra LLP has approached the company with a proposal to purchase the entire monthly output of Stearic Acid at ₹ 330 per litre at the separation point — in which case Stearic Acid would not be processed further. ADVISE whether Satguru Oleochemicals Limited should accept this proposal and sell the entire output without further processing.

COMMENT, on purely financial considerations, whether the other two products also needs to be sold at the separation point or can be further processed.

Service Costing

14. Mr. PS owns a bus which runs according to the following schedule:

(i)	Delhi to Hisar and back, the same day	
	Distance covered:	160 km. one way
	Number of days run each month:	9
	Seating capacity occupied	90%.
(ii)	Delhi to Aligarh and back, the same day	
	Distance covered:	160 km. one way
	Number of days run each month:	12
	Seating capacity occupied	95%
(iii)	Delhi to Alwar and back, the same day	
	Distance covered:	170 km. one way
	Number of days run each month:	6
	Seating capacity occupied	100%
(iv)	Following are the other details:	
	Cost of the bus	₹ 15,00,000
	Salary of the Driver	₹ 30,000 p.m.
	Salary of the Conductor	₹ 26,000 p.m.
	Salary of the part-time Accountant	₹ 7,000 p.m.
	Insurance of the bus	₹ 6,000 p.a.
	Diesel consumption 5 km. per litre at	₹ 90 per litre
	Road tax	₹ 21,912 p.a.
	Lubricant oil	₹ 30 per 100 km.
	Permit fee	₹ 500 p.m.
	Repairs and maintenance	₹ 5,000 p.m.
	Depreciation of the bus	@ 30% p.a.
	Seating capacity of the bus	50 persons

Passenger tax is 20% of the total takings.

CALCULATE the bus fare to be charged from each passenger to earn a profit of 30% on total takings.

The fares are to be indicated per passenger for the journeys: (i) Delhi to Hisar (ii) Delhi to Aligarh and (iii) Delhi to Alwar.

Standard Costing

15. BabyMoon Ltd. uses standard costing system in manufacturing one of its product 'Baby Cap'. The details are as follows:

Direct Material 1 Meter @ ₹ 60 per meter	₹ 60
Direct Labour 2 hour @ ₹ 20 per hour	₹ 40
Variable overhead 2 hour @ ₹ 10 per hour	₹ 20
Total	₹ 120

During the month of August, 10,000 units of 'Baby Cap' were manufactured. Details are as follows:

Direct material consumed	11,400 meters	@ ₹ 58 per meter	
Direct labour Hours	?	@	? ₹ 4,48,800
Variable overhead incurred			₹ 2,24,400

Variable overhead efficiency variance is ₹ 4,000 A. Variable overheads are based on Direct Labour Hours.

You are required to CALCULATE the following Variances:

- Material Variances- Material Cost Variance, Material Price Variance and Material Usage Variance.
- Variable Overheads variances- Variable overhead Cost Variance, Variable overhead Efficiency Variance and Variable overhead Expenditure Variance.
- Labour variances- Labour Cost Variance, Labour Rate Variance and Labour Efficiency Variance.

Marginal Costing

16. Meridian Precision Components Private Limited, an ISO 9001-certified auto-ancillary unit based in Pune (Maharashtra), supplies a critical precision-machined hydraulic valve spool (Component HV-900) to leading commercial-vehicle OEMs. To service a new long-term supply contract, the company has an option to buy any one of the two machines A or B to manufacture this unique industrial component HV-900. Each of the machines has the capacity to produce the same quality of component HV-900 and are almost identical except for the fact that they are being manufactured by different manufacturers. The specifications for each Machine are:

Machine A: It has the capacity to produce 50,000 components of HV-900 per annum, the fixed costs being ₹ 21,60,000 and could generate a profit of ₹ 32,40,000 on the sale of all the components produced.

Machine B: It is also having the equal capacity to produce the same number of components as that of Machine A per annum and all the components thus produced could be sold in the open market without any difficulty. Fixed cost of Machine B is ₹ 8,64,000 less than that of Machine A and yields a profit of ₹ 23,04,000 by selling all the components that are produced.

The selling price of each component of HV-900 is ₹ 1,440.

You are required to CALCULATE:

- (i) break even sales in value for each machine.
- (ii) sales levels in units where both the machines are equally profitable.

Budget & Budgetary Control

17. G Ltd. manufactures two products called 'M' and 'N'. Both products use a common raw material Z. The raw material Z is purchased @ ₹ 36 per kg from the market. The company has decided to review inventory management policies for the forthcoming year.

The following forecast information has been extracted from departmental estimates for the year ended 31st March 2026 (the budget period):

	Product M	Product N
Sales (units)	28,000	13,000
Finished goods stock increase by year-end	320	160
Post-production rejection rate (%)	4	6
Material Z usage (per completed unit, net of wastage)	5 kg	6 kg
Material Z wastage (%)	10	5

Additional information:

- Usage of raw material Z is expected to be at a constant rate over the period.
- Annual cost of holding one unit of raw material in stock is 11% of the material cost.
- The cost of placing an orders is ₹ 320 per order.
- The management of G Ltd. has decided that there should not be more than 40 orders in a year for the raw material Z.

Required:

- Prepare functional budgets for the year ended 31st March 2026 under the following headings:
 - Production budget for Products M and N (in units).
 - Purchases budget for Material Z (in kgs and value).
- Calculate the Economic Order Quantity for Material Z (in kgs).
- If there is a sole supplier for the raw material Z in the market and the supplier do not sale more than 4,000 kg. of material Z at a time. Keeping the management purchase policy and production quantity mix into consideration, calculate total quantity & material Z that can be available for production.

Miscellaneous

18. (a) DISCUSS four advantages of Budgetary Control System.
- (b) Infinity Manufacturing Ltd. uses an Activity-Based Costing (ABC) system in its production department. The company has identified the following activity cost pools for the year. For each activity cost pool listed below, IDENTIFY the most appropriate cost driver that should be used to allocate the overhead cost to the products.

S. No.	Activity Cost Pool
(i)	Ordering and Receiving Materials
(ii)	Setting up Machines
(iii)	Machining
(iv)	Assembling
(v)	Inspecting and Testing
(vi)	Supervising

- (c) Different industries follow different methods of costing because of the differences in the nature of their work. STATE the method of costing to be followed in the given cases:
- (i) cost of completing each stage of work is ascertained, like cost of making pulp and cost of making paper from pulp.
 - (ii) cost of each job is ascertained separately, like in the case of motor workshop.
 - (iii) cost of each contract is ascertained separately, like construction of bridges, roads.
 - (iv) a number of small orders passed through the factory in batch.
- (d) STATE four financial expenses that are included in Financial Accounts only.

**SUGGESTED ANSWERS/HINTS**

1. (i) (B) ₹ 32,400
 (ii) (C) ₹ 46,17,00,000
 (iii) (B) ₹ 81,000
 (iv) (C) ₹ 11,39,850
 (v) (B) ₹ 5,08,99,050 & ₹ 4,64,58,225

Working notes:

Computation of revenues (at listed price), discount, cost of goods sold and customer level operating activities costs:

	Customers			
	SEM	DHA	KDW	SRH
Units sold: (a)	13,500	18,000	28,500	38,250
Revenues (at listed price) (₹): (b) {(a) × ₹ 19,440}	26,24,40,000	34,99,20,000	55,40,40,000	74,35,80,000
Revenues (at actual price) (₹): (c) {(a) × Actual selling price}	26,24,40,000 (13,500 × ₹ 19,440)	34,40,88,000 (18,000 × ₹ 19,116)	50,78,70,000 (28,500 × ₹ 17,820)	66,92,22,000 (38,250 × ₹ 17,496)
Discount (₹) (d) {(b) – (c)}	0	58,32,000	4,61,70,000	7,43,58,000
Cost of goods sold (₹) : (e) {(a) × ₹ 16,200}	21,87,00,000	29,16,00,000	46,17,00,000	61,96,50,000
Customer level operating activities costs				
Order taking costs (₹): (No. of purchase orders × ₹ 13,500)	2,02,500	3,37,500	4,05,000	4,05,000
Customer visits costs (₹) (No. of customer visits × ₹ 10,800)	21,600	32,400	64,800	32,400

Delivery vehicles travel costs (₹) (Kms travelled by delivery vehicles x ₹ 22.50 per km.)	4,500	4,050	6,750	13,500
Product handling costs (₹) {(a) x ₹ 67.50}	9,11,250	12,15,000	19,23,750	25,81,875
Cost of expediting deliveries (₹) {No. of expedited deliveries x ₹ 40,500}	-	-	40,500	81,000
Total cost of customer level operating activities (₹)	11,39,850	15,88,950	24,40,800	31,13,775

Computation of Customer level operating income

	Customers			
	SEM	DHA	KDW	SRH
	(₹)	(₹)	(₹)	(₹)
Revenues (At actual price) (Refer to working note above)	26,24,40,000	34,40,88,000	50,78,70,000	66,92,22,000
Less: Cost of goods sold (Refer to working note above)	(21,87,00,000)	(29,16,00,000)	(46,17,00,000)	(61,96,50,000)
Gross margin	4,37,40,000	5,24,88,000	4,61,70,000	4,95,72,000
Less: Customer level operating activities costs	(11,39,850)	(15,88,950)	(24,40,800)	(31,13,775)

(Refer to working note above)				
Customer level operating income	4,26,00,150	5,08,99,050	4,37,29,200	4,64,58,225

2. (i) (B) ₹ 15.50
(ii) (C) Abnormal gain of 100 kg
(iii) (D) ₹ 31.00
(iv) (A) 80 kg; ₹4,160
(v) (C) ₹69.33

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

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

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- R (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

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

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

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

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

3. (A) ₹ 315 and ₹ 105

Total earnings (under 50% Halsey Scheme)

= Hours worked × Rate per hour + $\frac{1}{2}$ × time saved × Rate per hour

= 3 hours × ₹ 90 + $\frac{1}{2}$ × 1 hour × ₹ 90 = **₹ 315**

Effective hourly rate = Total earnings ÷ Hours worked

= ₹ 315 ÷ 3 = **₹ 105**

Working Note:

Let T hours be the total time worked (in hours) by the skilled worker (turner Mr. R); ₹ 90 is the rate per hour; the standard time is 4 hours per unit and the effective hourly earnings rate is ₹ 112.50, then -

Earning (under Rowan Plan) = Time taken × Rate per hr + $\frac{\text{Time saved}}{\text{Time allowed}}$ × Time taken × Rate per hr

₹ 112.5 T = T × ₹ 90 + $[(4 - T) \div 4] \times T \times ₹ 90$

₹ 112.5 = ₹ 90 + (4 - T) × ₹ 22.5

₹ 112.5 = ₹ 90 + ₹ 90 - 22.5 T

or, 22.5 T = ₹ 180 - ₹ 112.5

or, 22.5 T = ₹ 67.5

or, T = 3 hours.

4. (B) ₹ 19,71,100

Working Note:

Statement of Cost

(for the month of August)

	(₹)
Opening stock of raw materials	1,38,000

Add: Purchase of raw materials during the month of August	11,04,000
Less: Closing stock of raw materials	(1,15,000)
(a) Raw materials consumed	11,27,000
Add: Direct wages	5,52,000
(b) Prime cost	16,79,000
Add: Factory overheads	2,30,000
Works cost	19,09,000
Add: Opening work-in-process	27,600
Less: Closing work-in-process	(34,500)
(c) Factory cost	19,02,100
Add: Administration overheads	1,15,000
Cost of production	20,17,100
Add: Opening stock of finished goods	2,07,000
Less: Closing stock of finished goods	(2,53,000)
(d) Cost of goods sold	19,71,100

Note: Sales has been excluded as it is not required to compute the cost of goods sold.

5. (A) 8 : 5

	P (₹)	Q (₹)	Total (₹)
Sales value	32,000	20,000	52,000
Marginal cost (on sales value)	19,200	12,000	31,200
Contribution	12,800	8,000	20,800

Contribution ratio = $12,800 : 8,000 = 8 : 5$.

Fixed cost of ₹15,600 is apportioned as ₹9,600 to P and ₹6,000 to Q.

6. (C) ₹ 1,69,231 and ₹ 38,462

Working Note:

Let **X** stand for Power House expenses and **Y** for Maintenance Department expenses. Then:

$$X = 1,50,000 + 0.50 Y$$

$$Y = 30,000 + 0.05 X$$

Substituting the value of X in the equation for Y:

$$\begin{aligned} Y &= 30,000 + 0.05 (1,50,000 + 0.50 Y) \\ &= 30,000 + 7,500 + 0.025 Y \end{aligned}$$

$$= 37,500 + 0.025 Y$$

$$Y - 0.025 Y = 37,500$$

$$0.975 Y = 37,500,$$

$$\text{therefore } Y = 38,462 \text{ (approx.)}$$

The total of expenses of the Maintenance Department is ₹ 38,462 and that of the Power House is ₹ 1,69,231 i.e., ₹ 1,50,000 + (0.5 × ₹ 38,462).

7. (A) ₹ 12,03,000; 40%; ₹ 4,01,000**Working Note:**

$$\begin{aligned} \text{Contribution} &= \text{Sales} - \text{Variable cost} \\ &= 16,04,000 - 9,62,400 \\ &= ₹ 6,41,600 \end{aligned}$$

$$\begin{aligned} \text{P/V ratio} &= \text{Contribution} / \text{Sales} \times 100 \\ &= 6,41,600 / 16,04,000 \times 100 \\ &= \mathbf{40\%} \end{aligned}$$

$$\begin{aligned} \text{Break-even point} &= \text{Fixed cost} / \text{P/V ratio} \\ &= 4,81,200 / 40\% \\ &= \mathbf{₹ 12,03,000} \end{aligned}$$

$$\begin{aligned}\text{Margin of safety} &= \text{Actual Sales} - \text{BE point} \\ &= 16,04,000 - 12,03,000 \\ &= \text{₹ } 4,01,000\end{aligned}$$

8. A (Number of units to be purchased annually) = 16,50,000 units
 O (Ordering cost per order) = ₹ 13,200
 C (Annual cost of storage per unit) = ₹ 33
 Purchase price per unit inclusive of transportation cost = ₹ 165

Computations:

- (i) Re-ordering level (ROL) = Maximum usage per period × Maximum lead time
 $= 6,600 \text{ units per day} \times 15 \text{ days} = 99,000 \text{ units}$
- (ii) Maximum level = ROL + ROQ – [Minimum rate of consumption × Minimum lead time]
 (Refer to Working Notes 1 and 2)
 $= 99,000 \text{ units} + 36,332 \text{ units}$
 $- [3,300 \text{ units per day} \times 5 \text{ days}]$
 $= 99,000 \text{ units} + 36,332 \text{ units} - 16,500 \text{ units}$
 $= \text{1,18,832 units}$
- (iii) Minimum level = ROL – [Average rate of consumption × Average re-order period]
 $= 99,000 \text{ units} - [4,950 \text{ units per day} \times 10 \text{ days}]$
 $= 99,000 \text{ units} - 49,500 \text{ units} = \text{49,500 units}$
- (iv) Danger level = Average rate of consumption × Lead time for emergency purchases
 $= 4,950 \text{ units per day} \times 4 \text{ days}$
 $= \text{19,800 units}$

Working Notes:

1. Minimum rate of consumption per day:

$$\begin{aligned} \text{Average consumption} &= \frac{1}{2} (\text{Maximum consumption} + \text{Minimum consumption}) \\ 4,950 &= \frac{1}{2} (6,600 + \text{Minimum consumption}) \\ \text{Minimum rate of consumption} &= (2 \times 4,950) - 6,600 \\ &= 3,300 \text{ units per day.} \end{aligned}$$
2. Re-order Quantity (ROQ) = Economic Order Quantity

$$\begin{aligned} &= \sqrt{[(2 \times A \times O) \div C]} \\ &= \sqrt{[(2 \times 16,50,000 \times 13,200) \div 33]} \\ &= \sqrt{1,32,00,00,000} \\ &= 36,331.8, \text{ i.e. } \mathbf{36,332 \text{ units (approx.)}} \end{aligned}$$

9. Working Notes:

1. Calculation of Basic Wage Rate

Effective (productive) working hours

$$\begin{aligned} &= 35 \text{ workers} \times (8 - 0.5) \text{ hrs per day} \times 160 \text{ days} \\ &= 35 \times 7.5 \times 160 \\ &= 42,000 \text{ hours} \end{aligned}$$

Basic wages

$$\begin{aligned} &= \text{Total wages} - \text{Overtime premium} - \text{Shift/production allowance} + \text{DA} + \text{Bonus} \\ &= ₹ 2,52,000 - ₹ 30,000 - ₹ 12,000 + ₹ 42,000 + ₹ 21,000 \\ &= ₹ 2,73,000 \end{aligned}$$

Basic wage rate

$$= \text{Basic wages} \div \text{Effective working hours}$$

$$= ₹ 2,73,000 \div 42,000 \text{ hours} = ₹ 6.50 \text{ per hour}$$

$$\text{Overtime rate (Sundays \& holidays)} = ₹ 6.50 \times 200\%$$

$$= ₹ 13.00 \text{ per hour}$$

$$\text{Overtime rate (before \& after normal hrs)} = ₹ 6.50 \times 150\%$$

$$= ₹ 9.75 \text{ per hour}$$

2. Computation of average inflated wage rate (including overtime premium)

Particulars	Amount (₹)
Normal time (39,375 hrs × ₹6.50)	2,55,937.50
Overtime - Sundays & holidays (525 hrs × ₹13.00)	6,825.00
Overtime - before & after (2,100 hrs × ₹9.75)	20,475.00
Total wages for 42,000 hrs	2,83,237.50

$$\text{Average inflated wage rate} = ₹ 2,83,237.50 \div 42,000 \text{ hrs}$$

$$= ₹ 6.74 \text{ per hour}$$

Labour cost chargeable to Job AK-9 (2,100 hours)

(i) Where overtime is worked regularly throughout the year as a matter of policy on account of shortage of workers:

The overtime premium is treated as a part of employee cost and job is charged at an inflated wage rate.

$$\text{Employee cost chargeable to job} = 2,100 \text{ hrs} \times ₹ 6.74$$

$$= ₹ 14,154$$

(ii) Where overtime is worked irregularly to cope with the general production programme / to meet the requirements of production:

Basic wage rate is charged to the job and overtime premium is charged to factory overheads as under-

$$\text{Employee cost chargeable to Job} = 2,100 \text{ hrs} \times ₹ 6.50$$

$$= ₹13,650$$

$$\begin{aligned}\text{Factory overhead} &= \{140 \times (13.00 - 6.50)\} + \{280 \times (9.75 - 6.50)\} \\ &= ₹910 + ₹910 = ₹1,820\end{aligned}$$

- (iii) **Where overtime is worked at the desire (request) of the customer to complete the job in time:**

The basic wage rate is charged to the job and overtime premium also charged to the job as under-

$$\begin{aligned}\text{Employee cost chargeable to Job} &= 2,100 \text{ hrs} \times ₹6.50 \\ &= ₹13,650\end{aligned}$$

$$\begin{aligned}\text{Overtime Premium} &= \{140 \times (13.00 - 6.50)\} + \{280 \times (9.75 - 6.50)\} \\ &= ₹910 + ₹910 = ₹1,820\end{aligned}$$

$$\text{Total} = ₹13,650 + ₹1,820 = ₹15,470$$

- (iv) **Where overtime is worked on account of abnormal conditions such as earthquake in the area:**

Basic wage rate charged to the job and overtime premium is charged to Costing Profit & Loss Account as under-

$$\begin{aligned}\text{Employee cost chargeable to Job} &= 2,100 \text{ hrs} \times ₹6.50 \\ &= ₹13,650\end{aligned}$$

$$\begin{aligned}\text{Costing P\&L A/c} &= \{140 \times (13.00 - 6.50)\} + \{280 \times (9.75 - 6.50)\} \\ &= ₹910 + ₹910 = ₹1,820\end{aligned}$$

$$\text{Total} = ₹13,650 + ₹1,820 = ₹15,470$$

10. (a) Overhead Distribution Summary

	Basis	Total (₹)	A (₹)	B (₹)	X (₹)	Y (₹)
Direct materials	Direct	6,00,000	—	—	4,00,000	2,00,000
Direct wages	Direct	6,00,000	—	—	2,00,000	4,00,000

Factory rent (2:1:1:2)	Area	9,00,000	3,00,000	1,50,000	1,50,000	3,00,000
Power (Machine) (10:16:3:5)*	H.P. × Machine Hrs.	5,10,000	1,50,000	2,40,000	45,000	75,000
Depreciation (2:4:1:1)	Capital value	2,00,000	50,000	1,00,000	25,000	25,000
General Lighting (1:2:1:1)	Light Points	3,00,000	60,000	1,20,000	60,000	60,000
Perquisites (5:2:1:2)	Direct Wages	4,00,000	2,00,000	80,000	40,000	80,000
		35,10,000	7,60,000	6,90,000	9,20,000	11,40,000

*{(1000×50) : (2000×40) : (1000×15) : (1000×25)}

(50000 : 80000 : 15000 : 25000)

(10 : 16 : 3 : 5)

(b) (i) Redistribution of Service Department's expenses using 'Simultaneous equation method'

$$X = 9,20,000 + 0.05 Y$$

$$Y = 11,40,000 + 0.20 X$$

Substituting the value of X,

$$Y = 11,40,000 + 0.20 (9,20,000 + 0.05 Y)$$

$$= 13,24,000 + 0.01 Y$$

$$Y - 0.01Y = 13,24,000$$

$$Y = \frac{13,24,000}{0.99}$$

$$Y = ₹ 13,37,374$$

The total expense of **Y** is **₹ 13,37,374** and that of **X** is **₹ 9,86,869** i.e., ₹ 9,20,000 + (0.05 × ₹ 13,37,374).

Distribution of Service departments' overheads to Production departments

	Production Departments	
	A (₹)	B (₹)
Overhead as per primary distribution	7,60,000	6,90,000
Dept- X (55% and 25% of ₹ 9,86,869)	5,42,778	2,46,717
Dept- Y (60% and 35% of ₹ 13,37,374)	8,02,424	4,68,081
	21,05,202	14,04,798

(ii) **Redistribution of Service Department's expenses using 'Trial and Error Method':**

	Service Departments	
	X (₹)	Y (₹)
Overheads as per primary distribution	9,20,000	11,40,000
(i) Apportionment of Dept-X expenses to Dept-Y (20% of ₹ 9,20,000)	---	1,84,000
	---	13,24,000
(ii) Apportionment of Dept-Y expenses to Dept-X(5% of ₹ 13,24,000)	66,200	---
(i) Apportionment of Dept-X expenses to Dept-Y(20% of ₹ 66,200)	---	13,240
(ii) Apportionment of Dept-Y expenses to Dept-X(5% of ₹ 13,240)	662	---
(i) Apportionment of Dept-X expenses to Dept-Y(20% of ₹ 662)		132
(ii) Apportionment of Dept-Y expenses to Dept-X(5% of ₹ 132)	7	
Total	9,86,869	13,37,372

Distribution of Service departments' overheads to Production departments

	Production Departments	
	A (₹)	B (₹)
Overhead as per primary distribution	7,60,000	6,90,000
Dept- X (55% and 25% of ₹ 9,86,869)	5,42,778	2,46,717
Dept- Y (60% and 35% of ₹ 13,37,372)	8,02,423	4,68,080
	21,05,201	14,04,797

(iii) Redistribution of Service Department's expenses using 'repeated distribution method':

	A (₹)	B (₹)	X (₹)	Y (₹)
Overhead as per primary distribution	7,60,000	6,90,000	9,20,000	11,40,000
Dept. X overhead apportioned in the ratio (55:25:—:20)	5,06,000	2,30,000	(9,20,000)	1,84,000
Dept. Y overhead apportioned in the ratio (60:35:5: —)	7,94,400	4,63,400	66,200	(13,24,000)
Dept. X overhead apportioned in the ratio (55:25:—:20)	36,410	16,550	(66,200)	13,240
Dept. Y overhead apportioned in the ratio (60:35:5: —)	7,944	4,634	662	(13,240)
Dept. X overhead apportioned in the ratio (55:25:—:20)	364	166	(662)	132

Dept. Y overhead apportioned in the ratio (60:35:5: —)	79	46	7	(132)
Dept. X overhead apportioned in the ratio (55:25:—:20)	4	3	(7)	-
	21,05,201	14,04,799	-	-

11. Cost Sheet of Prateek LED Industries Ltd. for the year ended 31st March, 2026

Particulars	₹	₹
Material Consumed:		
Raw materials purchased	36,00,000	
Add: Freight inwards (2% of raw materials purchased)	72,000	
Add: Opening stock of raw materials	15,30,000	
Less: Closing stock of raw materials	(8,10,000)	43,92,000
Direct employee (labour) cost:		
Wages paid to factory workers	28,35,000	
Add: Production bonus paid to factory workers (10% of wages)	2,83,500	31,18,500
Direct expenses:		
Job charges paid to job workers	1,84,500	1,84,500
Prime Cost		76,95,000
Works / Factory overheads:		
Depreciation on factory building (₹ 98,41,500 x 10%)	9,84,150	
Depreciation on plant & machinery (₹ 52,02,000 x 15%)	7,80,300	

Insurance premium for plant & machinery (₹ 67,50,000 x 2%)	1,35,000	
Insurance premium for factory building (₹ 1,12,50,000 x 2%)	2,25,000	
Salary paid to supervisors	27,80,550	49,05,000
Gross factory cost		1,26,00,000
Add: Opening value of W-I-P	24,75,000	
Less: Closing value of W-I-P	(15,75,000)	
Factory Cost		1,35,00,000
Quality control cost:		
Expenses paid for quality control check activities	19,35,000	19,35,000
Administration cost related with production:		
Salary paid to Production Control Manager	32,40,000	32,40,000
Less: Realisable value on sale of scrap		(2,25,000)
Add: Primary packing cost		13,50,000
Cost of Production		1,98,00,000
Add: Opening stock of finished goods (80,000 units)	36,00,000	
Less: Closing stock of finished goods (70,000 units)	(31,50,000)	
Cost of Goods Sold		2,02,50,000

Administrative overheads:		
Depreciation on office building (₹ 1,62,00,000 x 10%)	16,20,000	
Salary paid to General Manager	55,80,000	
Fee paid to independent directors	22,50,000	94,50,000
Selling overheads (4,50,000 units x ₹ 9)		40,50,000
Cost of Sales		3,37,50,000
Add: Profit (25% on cost of sales)		84,37,500
Sales		4,21,87,500

Working Note:

Calculation of value of closing finished goods

Number of units produced = Units sold + Closing stock - Opening stock

$$= 4,50,000 + 70,000 - 80,000$$

$$= 4,40,000 \text{ units}$$

Per unit cost = Cost of Production / Number of units produced

$$= ₹ 1,98,00,000 / 4,40,000 \text{ units}$$

$$= ₹ 45 \text{ per unit}$$

Value of Closing stock = ₹ 45 x 70,000 units

$$= ₹ 31,50,000$$

**12. Profit & Loss Account of Sahyadri Precision Components Limited
(for the year ended 31st March, 2026)**

		(₹)			(₹)
To	Opening Stock	-	By	Sales (66,000 units)	82,50,000
"	Materials	33,00,000	"	Closing Stock:	

"	Wages (50% of materials)	16,50,000		Finished goods (4,059 units)	4,95,000
"	Factory Overheads	14,85,000		Work-in-Process	2,31,000
"	Admn. Overheads	8,58,000			
"	S&D Overheads	5,94,000			
"	Loss on the sale of Fixed Assets	6,60,000			
"	Expenses relating to issue of shares	66,000			
"	Net Profit	3,63,000			
		89,76,000			89,76,000

Cost Sheet

	(₹)
Materials	33,00,000
Wages (50% of materials)	16,50,000
Direct Expenses	-
Prime Cost	49,50,000
Add: Factory Overhead @ 100% of wages	16,50,000
Gross Factory Cost	66,00,000
Less: Closing WIP	(2,31,000)
Factory Cost of (66,000 + 4,059) units	63,69,000
Add: Admn. Overhead @ 10% of Factory cost	6,36,900
	70,05,900
Less: Closing Stock of finished goods (4,059 units)	(4,05,900)*
Cost of Goods sold (66,000 units)	66,00,000
Add: Selling & Dist. Overhead @ ₹ 10 per unit	6,60,000
Cost of sales (66,000 units)	72,60,000

Sales of 66,000 units	82,50,000
Profit	9,90,000

* [₹ 70,05,900 × (4,059 units/ 70,059 units)]

Reconciliation Statement

	(₹)	(₹)
Profit as per Cost Accounts		9,90,000
Add: Factory overheads over-absorbed (₹ 16,50,000 – ₹ 14,85,000)	1,65,000	
Selling & Dist. Overhead over-absorbed (₹ 6,60,000 – ₹ 5,94,000)	66,000	
Difference in the valuation of closing stock of finished goods (₹ 4,95,000 – ₹ 4,05,900)	89,100	3,20,100
		13,10,100
Less: Admn. overhead under-absorbed (₹ 8,58,000 – ₹ 6,36,900)	2,21,100	
Loss on the sale of Fixed Assets	6,60,000	
Expenses relating to issue of shares	66,000	9,47,100
Profit as per financial accounts		3,63,000

13. Working Note:

Apportionment of pre-separation (joint) cost on the basis of weight of output

Particulars	Oleic Acid	Stearic Acid	Glycerine	Total
Output (in litre)	100	70	80	250
Weight (ratio of output)	0.40	0.28	0.32	1.00
Joint cost apportioned (₹)	17,600	12,320	14,080	44,000

- (i) **Statement showing Profit / (Loss) by each product after further processing**

Particulars	Oleic Acid (₹)	Stearic Acid (₹)	Glycerine (₹)
Sales value after further processing	22,000 (₹ 220 × 100)	24,640 (₹ 352 × 70)	21,120 (₹ 264 × 80)
Less: Further processing cost	8,800	5,280	3,520
Less: Pre-separation cost apportioned	17,600	12,320	14,080
Profit / (Loss)	(4,400)	7,040	3,520

- (ii) **Decision: whether to process further or to sell at the separation point**

Particulars	Oleic Acid (₹)	Stearic Acid (₹)	Glycerine (₹)
Incremental revenue	11,000 [(220-110) × 100]	1,540 [(352-330 ¹) × 70]	5,280 [(264-198) × 80]
Less: Further processing cost	8,800	5,280	3,520
Incremental profit / (Loss)	2,200	(3,740)	1,760

Particulars	Oleic Acid (₹)	Stearic Acid (₹)	Glycerine (₹)
Sales	11,000 (₹ 110 × 100)	23,100 (330 ¹ × 70)	15,840 (₹ 198 × 80]
Pre separation costs	17,600	12,320	14,080
Profit/(Loss)	(6,600)	10,780	1,760

¹ As the question specifically requires to advise on the proposal to sell the entire monthly output of Stearic Acid at ₹ 330 per litre at the separation point, hence, comparison has been done considering this price only instead of ₹ 308 per litre.

On purely financial considerations, it is advisable to **process Oleic Acid and Glycerine further.**

Furthermore, with respect to proposal of Zenith Nutra LLP, Satguru Oleochemicals Limited is advised to accept the proposal and sell the entire output of Stearic Acid at the separation point.

14. Working Notes:

1. Total Distance (in km.) covered per month

Bus route	Km. per trip	Trips per day	Days per month	Km. per month
Delhi to Hisar	160	2	9	2,880
Delhi to Aligarh	160	2	12	3,840
Delhi to Alwar	170	2	6	2,040
Total				8,760

2. Passenger- km. per month

	Total seats available per month (at 100% capacity)	Capacity utilised		Km. per trip	Passenger-Km. per month
		(%)	Seats		
Delhi to Hisar & Back	900 (50 seats × 2 trips × 9 days)	90	810	160	1,29,600 (810 seats × 160 km.)

Delhi to Aligarh & Back	1,200 (50 seats × 2 trips × 12 days)	95	1,140	160	1,82,400 (1,140 seats × 160 km.)
Delhi to Alwar & Back	600 (50 seats × 2 trips × 6 days)	100	600	170	1,02,000 (600 seats × 170 km.)
Total					4,14,000

Monthly Operating Cost Statement

Particulars	(₹)	(₹)
(i) Running Costs		
Diesel {(8,760 km ÷ 5 km) × ₹ 90}	1,57,680.00	
Lubricant oil {(8,760 km ÷ 100) × ₹ 30}	2,628.00	1,60,308.00
(ii) Maintenance Costs		
Repairs & Maintenance		5,000.00
(iii) Standing charges		
Salary to driver	30,000.00	
Salary to conductor	26,000.00	
Salary of part-time accountant	7,000.00	
Insurance (₹ 6,000 ÷ 12)	500.00	
Road tax (₹ 21,912 ÷ 12)	1,826.00	
Permit fee	500.00	
Depreciation {(₹ 15,00,000 × 30%) ÷ 12}	37,500.00	1,03,326.00
Total costs per month before Passenger Tax (i)+(ii)+(iii)		2,68,634.00
Passenger Tax*		1,07,453.60
Total Cost		3,76,087.60

Add: Profit*		1,61,180.40
Total takings per month		5,37,268.00

*Let total takings be X then,

$X = \text{Total costs per month before passenger tax} + 0.2 X (\text{passenger tax}) + 0.3 X (\text{profit})$

$X = ₹ 2,68,634 + 0.2 X + 0.3 X$

$0.5 X = ₹ 2,68,634$ or, $X = ₹ 5,37,268$

Passenger Tax = 20% of ` 5,37,268 = ₹ 1,07,453.60

Profit = 30% of ₹ 5,37,268 = ₹ 1,61,180.40

Calculation of Rate per passenger km. and fares to be charged for different routes

$$\begin{aligned} \text{Rate per Passenger-Km.} &= \frac{\text{Total takings per month}}{\text{Total Passenger - Km. per month}} \\ &= \frac{₹ 5,37,268}{4,14,000 \text{ Passenger -Km.}} = ₹ 1.30 (\text{approx.}) \end{aligned}$$

Bus fare to be charged per passenger:

Delhi to Hisar = ₹ 1.30 × 160 km = ₹ 208.00

Delhi to Aligarh = ₹ 1.30 × 160 km = ₹ 208.00

Delhi to Alwar = ₹ 1.30 × 170 km = ₹ 221.00

15. (i) Material Variances

Budget			Std. for actual			Actual		
Quantity (Meter)	Price (₹)	Amount (₹)	Quantity (Meter)	Price (₹)	Amount (₹)	Quantity (Meter)	Price (₹)	Amount (₹)
1	60	60	10,000	60	6,00,000	11,400	58	6,61,200

$$\text{Material Cost Variance} = (\text{SQ} \times \text{SP} - \text{AQ} \times \text{AP})$$

$$= 6,00,000 - 6,61,200 = ₹ 61,200 \text{ (A)}$$

$$\text{Material Price Variance} = (\text{SP} - \text{AP}) \text{ AQ}$$

$$= (60 - 58) 11,400 = ₹ 22,800 \text{ (F)}$$

$$\text{Material Usage Variance} = (\text{SQ} - \text{AQ}) \text{ SP}$$

$$= (10,000 - 11,400) 60 = ₹ 84,000 \text{ (A)}$$

(ii) **Variable Overheads variances**

Variable overhead cost Variance

$$= \text{Standard variable overhead} - \text{Actual Variable Overhead}$$

$$= (10,000 \text{ units} \times 2 \text{ hours} \times ₹ 10) - 2,24,400 = ₹ 24,400 \text{ (A)}$$

Variable overhead Efficiency Variance

$$= (\text{Standard Hours} - \text{Actual Hours}) \times \text{Standard Rate per Hour}$$

Let Actual Hours be 'X', then:

$$(20,000 - X) \times 10 = 4,000 \text{ (A)}$$

$$2,00,000 - 10X = - 4,000$$

$$X = 2,04,000 \div 10$$

$$\text{Therefore, Actual Hours (X)} = 20,400$$

Variable overhead Expenditure Variance

$$= \text{Variable Overhead at Actual Hours} - \text{Actual Variable Overheads}$$

$$= 20,400 \times ₹ 10 - 2,24,400 = ₹ 20,400 \text{ (A)}$$

(iii) **Labour variances**

Budget			Std. for actual			Actual		
Hours	Rate (₹)	Amount (₹)	Hours	Rate (₹)	Amount (₹)	Hours	Rate (₹)	Amount (₹)
2	20	40	20,000	20	4,00,000	20,400	22*	4,48,800

$$*\text{Actual Rate} = ₹ 4,48,800 \div 20,400 \text{ hours} = ₹ 22$$

$$\text{Labour Cost Variance} = (\text{SH} \times \text{SR}) - (\text{AH} \times \text{AR})$$

$$= 4,00,000 - 4,48,800 = ₹ 48,800 \text{ (A)}$$

$$\text{Labour Rate Variance} = (\text{SR} - \text{AR}) \times \text{AH}$$

$$= (20 - 22) \times 20,400 = ₹ 40,800 \text{ (A)}$$

$$\text{Labour Efficiency Variance} = (\text{SH} - \text{AH}) \times \text{SR}$$

$$= (20,000 - 20,400) \times 20 = ₹ 8,000 \text{ (A)}$$

16. (i)

	Machine A			Machine B		
	Quantity	Price	Amount (₹)	Quantity	Price	Amount (₹)
Sales	50,000	1,440	7,20,00,000	50,000	1,440	7,20,00,000
Variable cost	50,000	1,332	6,66,00,000	50,000	1,368	6,84,00,000
Contribution		108	54,00,000		72	36,00,000
Fixed Cost			21,60,000			12,96,000
Profit			32,40,000			23,04,000
P/V Ratio			7.5%			5%
Break even Sales			2,88,00,000			2,59,20,000

Note:

$$\text{P/V Ratio} = (\text{Contribution} \times 100) \div \text{Sales}$$

$$\text{Break even Sales} = \text{Fixed Cost} \div \text{P/V Ratio}.$$

(ii) Let the units be x

$$108x - 21,60,000 = 72x - 12,96,000$$

$$36x = 8,64,000$$

$$x = 24,000 \text{ Units}$$

17. (a) (i) **Production Budget (in units) for the year ended 31st March 2026**

	Product M	Product N
Budgeted sales (units)	28,000	13,000
Add: Increase in closing stock	320	160
No. good units to be produced	28,320	13,160
Post production rejection rate	4%	6%
No. of units to be produced	29,500 $\left(\frac{28,320}{0.96} \right)$	14,000 $\left(\frac{13,160}{0.94} \right)$

- (ii) **Purchase budget (in kgs and value) for Material Z**

	Product M	Product N
No. of units to be produced	29,500	14,000
Usage of Material Z per unit of production	5 kg.	6 kg.
Material needed for production	1,47,500 kg.	84,000 kg.
Materials to be purchased	1,63,889 kg. $\left(\frac{1,47,500}{0.90} \right)$	88,421 kg. $\left(\frac{84,000}{0.95} \right)$
Total quantity to be purchased	2,52,310 kg.	
Rate per kg. of Material Z	₹36	
Total purchase price	₹90,83,160	

- (b) **Calculation of Economic Order Quantity for Material Z**

$$EOQ = \sqrt{\frac{2 \times 2,52,310 \text{ kg.} \times ₹ 320}{₹ 36 \times 11\%}} = \sqrt{\frac{16,14,78,400}{₹ 3.96}} = 6,385.72 \text{ kg.}$$

- (c) Since, the maximum number of order per year can not be more than 40 orders and the maximum quantity per order that can be purchased is 4,000 kg. Hence, the total quantity of Material Z that can be available for production:

$$= 4,000 \text{ kg.} \times 40 \text{ orders} = 1,60,000 \text{ kg.}$$

18. (a) **Advantages of Budgetary Control System:**

Points	Description
1. Efficiency	The use of budgetary control system enables the management of a business entity to conduct its business activities in an efficient manner.
2. Control on expenditure	It is a powerful instrument used by business entity for the control of their expenditure. It provides a yardstick for measuring and evaluating the performance of individuals and their departments.
3. Finding deviations	Budget reveals the deviations of the actual from the budgeted figures after making a comparison and communicating the deviation to management.
4. Effective utilisation of resources	Effective utilisation of various resources like—men, material, machinery and money—is made possible, as the production is planned after taking these into account.

5. Revision of plans	Budget helps in the review of current trends and framing of future policies.
6. Implementation of Standard Costing system	Budget creates suitable conditions for the implementation of standard costing system in a business organisation.
7. Cost Consciousness	Budgetary control system encourages cost consciousness and maximum utilisation of available resources.
8. Credit Rating	Management which has developed a well-ordered budget plans and which operate accordingly, receive greater favour from credit agencies.

(b)

S. No.	Activity Cost Pool	Cost Driver
(i)	Ordering and Receiving Materials	Number of purchase orders
(ii)	Setting up Machines	Number of set-ups
(iii)	Machining	Machine hours
(iv)	Assembling	Number of parts
(v)	Inspecting and Testing	Number of tests
(vi)	Supervising	Direct labour hours

(c)

S. No.	Particulars	Method of costing
(i)	Cost of completing each stage of work is ascertained, like cost of making pulp and cost of making paper from pulp.	Process costing
(ii)	Cost of each job is ascertained separately, like in the case of motor workshop.	Job costing
(iii)	Cost of each contract is ascertained separately, like construction of bridges, roads.	Contract costing
(iv)	A number of small orders passed through the factory in batch.	Batch costing

(d) **Financial Expenses included in Financial Accounts only-**

- (i) Interest on loans or bank mortgages.
- (ii) Expenses and discounts on issue of shares, debentures etc.
- (iii) Other capital losses i.e., loss by fire not covered by insurance etc.
- (iv) Losses on the sales of fixed assets and investments.
- (v) Income tax, donations, subscriptions.
- (vi) Expenses of the company's share transfer office, if any.