Skillshort

Self-Study Preparation Pack

CMA INTERMEDIATE

Paper 8: Cost Accounting (CA)

Chapter-wise Practice Questions with Answers

For the December 2026 term · 60 MCQs (6 sets) + 11 descriptive questions with solutions · Original Skillshort questions

60 MCQs with key | 11 descriptive with solutions | Numbers verified in Python | Solve after each chapter

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This subject pack has 6 parts

1 Chapter-wise notes | 2 Important topics & weightage | 3 Past papers: trends & links

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Prepared by Skillshort for self-study. Original explanations and questions; not an official ICAI/ICMAI/ICSI publication. Items marked VERIFY should be checked against the latest official material.

Part A – Chapter-wise MCQs

Each set is followed by its answer key. Attempt a set in 20 minutes after finishing the related chapters.

Set 1 – Chapters 1–2 (Introduction, cost sheet)

1. Which of the following is a **period cost**?

(a) Direct materials
(b) Factory rent
(c) Advertising expenditure
(d) Depreciation of plant

2. A centre whose manager is responsible for costs, revenues **and** capital employed is

(a) Cost centre
(b) Revenue centre
(c) Profit centre
(d) Investment centre

3. Direct materials ₹50,000, direct labour ₹30,000, direct expenses ₹5,000 and factory overheads ₹20,000. Prime cost is

(a) ₹80,000
(b) ₹85,000
(c) ₹1,05,000
(d) ₹55,000

4. Which item is **excluded** from the cost sheet?

(a) Royalty on production
(b) Interest on loans and donations
(c) Packing for transport
(d) Primary packing

5. Primary packing material (needed to sell the product) is part of

(a) Selling overheads
(b) Direct materials
(c) Administration overheads
(d) Distribution overheads

6. Cost reduction differs from cost control because it

(a) Accepts the standard as fixed
(b) Challenges the standards themselves and seeks permanent savings
(c) Is a short-term exercise
(d) Is concerned only with past costs

7. An example of a cost unit for a hotel is

(a) Kilowatt-hour
(b) Room-day
(c) Tonne-km
(d) Patient-day

8. A cost that remains fixed per unit but varies in total with output is

(a) Fixed cost
(b) Variable cost
(c) Semi-variable cost
(d) Step cost

9. Cost of production ₹7,04,000 for 8,000 units; 7,500 units sold; no opening stock. Cost of goods sold is

(a) ₹7,04,000
(b) ₹6,60,000
(c) ₹6,00,000
(d) ₹7,50,000

10. The Government e-Marketplace (GeM) portal and ERP systems are studied in costing under

(a) Digital costing environment
(b) Integrated accounts
(c) Uniform costing
(d) Target costing

Set 1 – Answer key

Q	Ans	Explanation / working
1	(c)	Selling and distribution costs such as advertising are charged to the period in which they are incurred. They are not included in inventory.
2	(d)	An investment centre is judged on return on investment (ROI) or residual income (RI), so the manager also controls the assets employed.
3	(b)	Prime cost = direct materials + direct labour + direct expenses = **₹85,000**.
4	(b)	Purely financial items (interest, donations, income tax, loss on sale of assets) are excluded from cost accounts.
5	(b)	Primary packing is essential to the product and is a direct material. Packing for transport is a distribution overhead, and fancy packing for display is a selling overhead.
6	(b)	Cost control keeps costs within standards. Cost reduction looks for a permanent fall in unit cost without lowering quality.
7	(b)	Hotels use room-days (or guest-days). Power uses kWh, transport uses tonne-km and hospitals use patient-days.
8	(b)	Variable cost per unit is constant, while total variable cost moves in proportion to output.
9	(b)	7,500 × (7,04,000/8,000 = ₹88) = **₹6,60,000**.
10	(a)	The new-scheme syllabus covers costing in a digital environment: ERP, GeM and the use of technology in cost data.

Set 2 – Chapters 3–4 (Material cost, employee cost)

11. Annual demand 5,000 units, ordering cost ₹100 per order, carrying cost ₹4 per unit p.a. EOQ is

(a) 250 units (b) 500 units
(c) 1,000 units (d) 707 units

12. Consumption ₹6,00,000; opening stock ₹80,000; closing stock ₹1,20,000. Inventory turnover ratio is

(a) 5 times (b) 6 times
(c) 7.5 times (d) 4 times

13. The danger level of stock is normally computed as

(a) Max usage × max lead time
(b) Average usage × lead time for emergency purchases
(c) ROL + ROQ
(d) Min stock – safety stock

14. In ABC analysis, "A" category items usually account for

(a) About 70% of items and 10% of value
(b) About 10% of items and 70% of value
(c) Equal items and value
(d) Only fast-moving items

15. In times of rising prices, the method of pricing issues that values closing stock at the latest prices is

(a) LIFO (b) FIFO
(c) Simple average (d) Weighted average

16. Normal idle time is treated as

(a) Charged to Costing P&L A/c
(b) Factory overhead or included in the labour rate
(c) Charged to the customer
(d) Ignored

17. Under the Merrick multiple piece-rate system, a worker with efficiency between 83% and 100% gets

(a) Normal piece rate (b) 110% of normal piece rate
(c) 120% of normal piece rate (d) 83% of normal piece rate

18. Basic pay ₹20,000, DA ₹5,000 and employer's PF contribution ₹3,000 per month, for 200 effective hours. The effective employee cost per hour is

(a) ₹125 (b) ₹140
(c) ₹100 (d) ₹150

19. Labour turnover by the replacement method is

(a) Separations ÷ average workers
(b) Replacements ÷ average workers
(c) (Separations + replacements) ÷ average workers
(d) New recruits ÷ average workers

20. The JIT system of inventory is described as

(a) Push system (b) Demand-pull system
(c) Two-bin system (d) Perpetual system

Set 2 – Answer key

Q	Ans	Explanation / working
11	(b)	√(2 × 5,000 × 100/4) = √2,50,000 = **500 units**.
12	(b)	Average stock = 1,00,000; 6,00,000/1,00,000 = **6 times** (about 61 days).
13	(b)	The danger level triggers emergency buying, so it equals average (or minimum) usage × the lead time for an emergency purchase.
14	(b)	A items are few in number but high in value, so they need the tightest control.
15	(b)	Under FIFO the oldest units are issued first, so closing stock is at the most recent (higher) prices.
16	(b)	Normal idle time is unavoidable, so it is part of cost. Abnormal idle time goes to Costing P&L.
17	(b)	Merrick: up to 83% – normal rate; 83%–100% – **110%**; above 100% – 120% of the normal piece rate.
18	(b)	(20,000 + 5,000 + 3,000)/200 = **₹140** per hour.
19	(b)	The replacement method uses the number of workers replaced, which is a better measure of the real cost of turnover.
20	(b)	JIT produces or buys only when there is demand ("pull"). It aims at zero inventory and zero defects.

Set 3 – Chapters 5–7 (Overheads, CAS, cost book-keeping)

21. Overheads ₹3,00,000 and prime cost ₹10,00,000. Overhead absorption rate as a percentage of prime cost is

(a) 33.33% (b) 30%
(c) 25% (d) 300%

22. Under-absorbed overheads caused by abnormal factors such as a strike are

(a) Carried forward
(b) Charged to Costing P&L A/c
(c) Absorbed by a supplementary rate
(d) Charged to WIP only

23. CAS 11 deals with

(a) Administrative overheads
(b) Selling and distribution overheads
(c) Royalty
(d) Joint costs

24. Under CAS 3, unabsorbed fixed production overheads due to abnormal idle capacity are

(a) Added to product cost (b) Charged to the Costing P&L
(c) Carried forward to next year (d) Included in closing stock

25. The method that ignores services rendered between service departments is

(a) Repeated distribution (b) Simultaneous equations
(c) Direct re-distribution (d) Trial and error

26. Notional rent of own premises is charged only in cost accounts. As a result, profit as per financial accounts will be

(a) Lower (b) Higher
(c) Same (d) Cannot say

27. Under the non-integrated system, the account that replaces all personal and nominal financial accounts in the cost ledger is

(a) Costing P&L A/c (b) Cost Ledger Control A/c
(c) Stores Ledger Control A/c (d) WIP Control A/c

28. Wages paid ₹1,00,000, of which direct ₹80,000. The entry for indirect wages in cost books is

(a) WIP Control Dr
(b) Factory Overhead Control Dr / To Wages Control
(c) Costing P&L Dr
(d) Cost Ledger Control Dr

29. A machine hour rate is most suitable where

(a) Work is labour-intensive
(b) Production is predominantly by machines
(c) Only one product is made
(d) Materials form most of the cost

30. Overtime premium paid because of a general pressure of work is charged to

(a) The specific job (b) Production overheads
(c) Costing P&L A/c (d) Sales department

Set 3 – Answer key

Q	Ans	Explanation / working
21	(b)	3,00,000/10,00,000 = **30%**.
22	(b)	Abnormal factors should not distort product costs, so the amount goes to the Costing P&L A/c.
23	(a)	**CAS 11** – Administrative Overheads.
24	(b)	Overheads are absorbed on **normal capacity**; the unabsorbed portion from abnormal idle capacity is a period cost.
25	(c)	The direct method apportions service costs only to production departments.
26	(b)	The cost accounts carry an extra charge, so the financial profit is **higher** by the amount of notional rent.
27	(b)	The Cost Ledger Control (General Ledger Adjustment) A/c completes the double entry for transactions with the outside world.
28	(b)	Indirect wages are transferred from Wages Control to Factory Overhead Control.
29	(b)	Overheads in machine-intensive departments mainly follow machine running time.
30	(b)	Only overtime at the customer's request is charged to the job, and only abnormal overtime goes to Costing P&L.

Set 4 – Chapters 8–13 (Unit, batch, job, process, joint products, operating costing)

31. Annual demand 12,000 units; set-up cost ₹500 per batch; carrying cost ₹3 per unit p.a. EBQ is

(a) 1,000 (b) 2,000
(c) 4,000 (d) 1,414

32. Input 1,000 units; normal loss 10%; actual output 920 units. There is

(a) Abnormal loss of 20 units
(b) Abnormal gain of 20 units
(c) Abnormal loss of 80 units
(d) No abnormal loss or gain

33. Closing WIP of 1,000 units, 60% complete for conversion, represents

(a) 1,000 EU
(b) 600 EU
(c) 400 EU
(d) 1,600 EU

34. Joint cost ₹1,30,000. Product A: final sales ₹2,00,000, further cost ₹40,000. Product B: final sales ₹1,20,000, further cost ₹20,000. Joint cost of A by the NRV method is

(a) ₹65,000
(b) ₹80,000
(c) ₹81,250
(d) ₹50,000

35. The decision to process a joint product further depends on

(a) Apportioned joint cost
(b) Incremental revenue vs incremental cost
(c) Physical units
(d) Total sales

36. A by-product of small value is usually accounted for by

(a) Allocating a share of joint cost
(b) Crediting its sale proceeds to Costing P&L or deducting them from main product cost
(c) Ignoring it
(d) Treating it as a main product

37. The cost unit for a goods transport company is

(a) Passenger-km
(b) Tonne-km
(c) Kilowatt-hour
(d) Bed-day

38. A 50-bed hospital at 80% occupancy for 365 days provides

(a) 18,250 patient-days
(b) 14,600 patient-days
(c) 14,000 patient-days
(d) 16,425 patient-days

39. Job costing is most suitable for

(a) Oil refinery
(b) Printing press and repair workshops
(c) Cement
(d) Sugar

40. Inter-process profit is introduced when

(a) Transfers between processes are at cost
(b) Transfers are made at cost plus a margin or at market price
(c) There is a normal loss
(d) Output is sold

Set 4 – Answer key

Q	Ans	Explanation / working
31	(b)	√(2 × 12,000 × 500/3) = √40,00,000 = **2,000 units**.
32	(b)	Normal output is 900 and actual output is 920, so there is an **abnormal gain of 20 units**.
33	(b)	1,000 × 60% = **600 equivalent units**.
34	(b)	NRVs: A 1,60,000 and B 1,00,000 (total 2,60,000). A = 1,30,000 × 160/260 = **₹80,000**.
35	(b)	Joint costs are sunk, so only incremental revenue and incremental cost after split-off are relevant.

Q	Ans	Explanation / working
36	(b)	The NRV of a minor by-product is credited to the process or to Costing P&L, without any share of joint cost.
37	(b)	Goods transport uses tonne-km, which can be absolute or commercial.
38	(b)	50 × 365 × 80% = **14,600 patient-days**.
39	(b)	Job costing fits customer-specific jobs. Refineries, cement and sugar use process costing.
40	(b)	When transfers are at a mark-up, unrealised profit in closing stock must be removed by a stock provision.

Set 5 – Chapters 14–16 (Marginal costing, standard costing, budgets)

41. Standard mix 60 kg A at ₹10 and 40 kg B at ₹15. Actual 1,100 kg used: A 650, B 450. The material mix variance is

(a) ₹50 (A)
(b) ₹50 (F)
(c) ₹100 (F)
(d) ₹150 (A)

42. Material usage variance is

(a) (SP − AP) × AQ
(b) (SQ − AQ) × SP
(c) (SQ − AQ) × AP
(d) SC − AC

43. Idle time variance is always

(a) Favourable
(b) Adverse
(c) Either
(d) Not calculated

44. Fixed costs ₹1,20,000; contribution ₹40 per unit. BEP is

(a) 4,000 units
(b) 3,000 units
(c) 2,500 units
(d) 1,200 units

45. P/V ratio 25% and margin of safety ₹2,00,000. Profit is

(a) ₹50,000
(b) ₹80,000
(c) ₹25,000
(d) ₹8,00,000

46. When there is a limiting factor, products are ranked by

(a) Contribution per unit
(b) Contribution per unit of the limiting factor
(c) Selling price
(d) P/V ratio

47. Sales 5,000 units; closing finished stock 800; opening 600. Production budget is

(a) 4,800
(b) 5,200
(c) 5,800
(d) 5,600

48. A budget that is designed to change with the level of activity is a

(a) Fixed budget
(b) Flexible budget
(c) Master budget
(d) Zero-based budget

49. The principal budget factor is

(a) The factor that limits the activities of the business
(b) The budget officer
(c) The master budget
(d) Cash

50. Under absorption costing, when production exceeds sales, profit compared with marginal costing is

(a) Lower (b) Higher
(c) Same (d) Unpredictable

Set 5 – Answer key

Q	Ans	Explanation / working
41	(a)	RSQ A 660, B 440: (660 − 650) × 10 = 100 F; (440 − 450) × 15 = 150 A → **₹50 (A)**.
42	(b)	Usage is valued at the **standard price** for the difference between standard quantity (for actual output) and actual quantity.
43	(b)	Idle time is paid but no output results, so the variance is always **adverse**.
44	(b)	1,20,000/40 = **3,000 units**.
45	(a)	Profit = MOS × P/V = 2,00,000 × 25% = **₹50,000**.
46	(b)	Profit is maximised by maximising contribution per unit of the **scarce resource**.
47	(b)	5,000 + 800 − 600 = **5,200 units**.
48	(b)	A flexible budget recognises cost behaviour, so it allows a valid comparison at the actual activity level.
49	(a)	The principal (key) factor – often sales, but sometimes materials, labour or capacity – is identified first and governs all other budgets.
50	(b)	Part of the fixed overhead is carried forward in closing stock, so absorption profit is **higher**.

Set 6 – Chapters 6, 10 and 13 (CAS, contract costing, operating costing)

51. CAS 2 deals with

(a) Capacity determination (b) Classification of cost
(c) Overheads (d) Material cost

52. Under CAS 2, normal capacity is

(a) Maximum capacity with no allowance for losses
(b) Average production achieved or achievable over a number of periods under normal circumstances, allowing for planned maintenance
(c) Actual production of the year
(d) Budgeted sales

53. Under CAS 6, normal loss of materials is

(a) Excluded from material cost
(b) Included in material cost
(c) Charged to the Costing P&L
(d) Treated as administration overhead

54. CAS 7 deals with

(a) Employee cost (b) Direct expenses
(c) Depreciation (d) Interest

55. An escalation clause in a contract protects the

(a) Contractee against delays
(b) Contractor against increases in prices of materials and labour
(c) Sub-contractor against bad debts
(d) Bank against default

56. Work certified ₹10,00,000 and cash received is 85% of work certified. Retention money is

(a) ₹85,000 (b) ₹1,50,000
(c) ₹8,50,000 (d) ₹15,000

57. When a contract is less than 25% complete, profit credited to the P&L is

(a) ⅓ of notional profit
(b) Nil
(c) ⅔ of notional profit
(d) Full notional profit

58. The cost unit for a hotel is

(a) Room-day
(b) Guest
(c) Meal
(d) Tonne-km

59. A 50-seat bus runs 100 km each way, 1 round trip a day, for 30 days at 80% occupancy. Passenger-km for the month are

(a) 1,20,000
(b) 2,40,000
(c) 3,00,000
(d) 1,50,000

60. In a cost-plus contract, the contractor is paid

(a) A fixed price
(b) Actual cost plus an agreed profit
(c) Only actual cost
(d) Market price

Set 6 – Answer key

Q	Ans	Explanation / working
51	(a)	**CAS 2** – Capacity Determination (installed, normal, actual and idle capacity).
52	(b)	**Normal capacity** – production achieved or achievable on an average over periods under normal conditions, taking into account loss of capacity from planned maintenance.
53	(b)	Normal loss (and spoilage) is absorbed in the cost of good materials; **abnormal loss is excluded**.
54	(a)	**CAS 7** – Employee Cost.
55	(b)	It lets the **contract price be raised** if input prices rise beyond a stated level.
56	(b)	10,00,000 × 15% = **₹1,50,000**.
57	(b)	Below 25% completion **no profit** is taken; the whole notional profit is kept in reserve.
58	(a)	Hotels use the **room-day** (occupied room per day).
59	(b)	50 × 80% × 200 km × 30 = **2,40,000 passenger-km**.
60	(b)	**Cost-plus** – agreed cost plus a fixed percentage or fee as profit; common in government and defence work.

Part B – Descriptive Practice Questions

QUESTION D1 – EOQ and stock levels (6 marks)

Annual usage 12,000 units (300 working days); ordering cost ₹250; carrying cost ₹6 per unit p.a. Daily usage: maximum 50, normal 40, minimum 30. Lead time 8–12 days (normal 10). Emergency lead time 4 days. Calculate EOQ, re-order level, minimum, maximum, average and danger levels.

SOLUTION D1

EOQ = √(2 × 12,000 × 250/6) = **1,000 units**. ROL = 50 × 12 = **600**. Minimum = 600 − 40 × 10 = **200**. Maximum = 600 + 1,000 − 30 × 8 = **1,360**. Average = (200 + 1,360)/2 = **780** (or min + ½ ROQ = 700). Danger level = 40 × 4 = **160 units**.

QUESTION D2 – Time rate, Halsey and Rowan (5 marks)

Standard time 12 hours; time taken 9 hours; rate ₹50 per hour. Calculate earnings and effective hourly rate under (i) time rate, (ii) Halsey (50%), (iii) Rowan.

SOLUTION D2

(i) Time rate: 9 × 50 = **₹450** (₹50 per hour). (ii) Halsey: 450 + 50% × 3 × 50 = **₹525** (₹58.33 per hour). (iii) Rowan: 450 + (3/12) × 9 × 50 = 450 + 112.50 = **₹562.50** (₹62.50 per hour). Rowan pays more because the time saved (25%) is below 50%.

QUESTION D3 – Reciprocal service departments (6 marks)

Primary overheads: production A ₹1,00,000, B ₹80,000; service X ₹46,000, Y ₹10,000. X serves A 40%, B 40%, Y 20%. Y serves A 50%, B 30%, X 20%. Apportion using simultaneous equations.

SOLUTION D3

X = 46,000 + 0.2Y; Y = 10,000 + 0.2X → X = 48,000 + 0.04X → **X = 50,000; Y = 20,000**.

A = 1,00,000 + 40% × 50,000 + 50% × 20,000 = **₹1,30,000**; B = 80,000 + 40% × 50,000 + 30% × 20,000 = **₹1,06,000**. Check: total 2,36,000 = 1,00,000 + 80,000 + 46,000 + 10,000 ✓

QUESTION D4 – Cost sheet and quotation (6 marks)

Direct materials ₹3,00,000; direct labour ₹2,00,000; direct expenses ₹40,000; factory overheads 60% of direct labour; opening WIP ₹30,000; closing WIP ₹50,000; administration (production) overheads 10% of works cost. Units produced 8,000; sold 7,500 (no opening stock); selling overheads ₹6 per unit sold. Find the cost of sales and the price per unit to earn 20% on cost.

SOLUTION D4

Prime cost 5,40,000 + factory OH 1,20,000 + 30,000 − 50,000 = works cost **6,40,000**; + admin 64,000 = cost of production **7,04,000** (₹88 per unit). COGS = 7,500 × 88 = 6,60,000; + selling 45,000 = cost of sales **₹7,05,000**. Sales at 20% on cost = **₹8,46,000**, i.e. **₹112.80 per unit**.

QUESTION D5 – Weighted average process costing (6 marks)

Opening WIP 1,000 units (materials 100% ₹20,000; conversion 50% ₹9,000). Introduced 9,000 units: materials ₹1,80,000, conversion ₹1,62,000. Completed 8,000; closing WIP 2,000 (materials 100%, conversion 50%). Use the weighted average method.

SOLUTION D5

EU: materials 8,000 + 2,000 = 10,000; conversion 8,000 + 1,000 = 9,000. Cost per EU: materials (20,000 + 1,80,000)/10,000 = **₹20**; conversion (9,000 + 1,62,000)/9,000 = **₹19**.

Transferred 8,000 × 39 = **₹3,12,000**; closing WIP 2,000 × 20 + 1,000 × 19 = **₹59,000**. Check: 3,71,000 ✓

QUESTION D6 – Joint products: NRV and further processing (6 marks)

Joint cost ₹3,00,000. P: 5,000 kg, sold at ₹80 after further cost ₹1,00,000. Q: 10,000 kg, sold at ₹30 after further cost ₹50,000 (or at ₹28 at split-off). R: 2,000 kg sold at split-off at ₹25. Apportion joint cost by NRV, find P's profit, and decide whether Q should be processed further.

SOLUTION D6

NRV: P 4,00,000 − 1,00,000 = 3,00,000; Q 3,00,000 − 50,000 = 2,50,000; R 50,000; total 6,00,000. Joint cost: **P ₹1,50,000; Q ₹1,25,000; R ₹25,000**. P's profit = 4,00,000 − 1,00,000 − 1,50,000 = **₹1,50,000**.

Q at split-off: 10,000 × 28 = 2,80,000 vs NRV after processing 2,50,000 → **sell Q at split-off** (₹30,000 better).

QUESTION D7 – Hospital: cost per patient-day (5 marks)

A 50-bed hospital works 365 days at 80% occupancy. Annual fixed costs ₹73,00,000; variable costs ₹400 per patient-day. Find the cost per patient-day and the charge per day to earn 20% on charges.

SOLUTION D7

Patient-days = 50 × 365 × 80% = **14,600**. Total cost = 73,00,000 + 14,600 × 400 = 1,31,40,000 → **₹900 per patient-day**. Charge = 900/0.80 = **₹1,125 per day**.

QUESTION D8 – Make or buy (5 marks)

A component costs: materials ₹20, labour ₹15, variable overheads ₹10, apportioned fixed overheads ₹12 per unit. A supplier quotes ₹50. Annual need 10,000 units. (i) Make or buy? (ii) What if the freed capacity can earn a contribution of ₹80,000 p.a.?

SOLUTION D8

(i) Relevant (variable) cost of making = ₹45 < ₹50, so **make**; saving 10,000 × 5 = ₹50,000. Fixed overheads continue either way and are irrelevant.

(ii) Opportunity cost of ₹80,000 > saving of ₹50,000 → **buy**; net benefit ₹30,000.

QUESTION D9 – Cash budget (6 marks)

Sales: Nov ₹1,80,000; Dec ₹1,90,000; Jan ₹2,00,000; Feb ₹2,40,000; Mar ₹2,20,000. 20% cash, balance collected next month. Purchases are 60% of the same month's sales, paid next month. Wages ₹30,000 and rent ₹10,000 per month paid in the same month. A machine costing ₹1,00,000 is paid for in February. Opening cash 1 January ₹50,000. Prepare a cash budget for January–March.

SOLUTION D9

Particulars	Jan	Feb	Mar
Opening balance	50,000	88,000	36,000
Cash sales (20%)	40,000	48,000	44,000
Collection from debtors (80% of last month)	1,52,000	1,60,000	1,92,000
Total receipts + opening	**2,42,000**	**2,96,000**	**2,72,000**
Creditors (60% of last month's sales)	1,14,000	1,20,000	1,44,000
Wages and rent	40,000	40,000	40,000
Machine	–	1,00,000	–
Total payments	**1,54,000**	**2,60,000**	**1,84,000**
Closing balance	**88,000**	**36,000**	**88,000**

QUESTION D10 – Bus operating cost and fare (6 marks)

A bus costing ₹30,00,000 (life 10 years, no scrap) has 50 seats and runs a 60-km route, making 4 single trips a day for 25 days a month at **70% occupancy**. Monthly costs: driver ₹25,000; conductor ₹15,000; garage rent ₹6,000. Annual: insurance ₹60,000; road tax ₹24,000. Diesel ₹90 per litre at 5 km per litre; repairs ₹4 per km; tyres ₹1 per km. Find the cost per passenger-km and the fare per passenger-km (and per single trip) if the operator wants **20% profit on fares**.

SOLUTION D10

Km per month = 60 × 4 × 25 = **6,000**; passenger-km = 6,000 × 50 × 70% = **2,10,000**.

Monthly cost	₹
Depreciation (30,00,000 ÷ 10 ÷ 12)	25,000
Driver + conductor	40,000
Insurance (60,000 ÷ 12) + road tax (24,000 ÷ 12)	7,000
Garage rent	6,000
Standing charges	**78,000**
Diesel (6,000 ÷ 5 × 90)	1,08,000
Repairs (6,000 × 4) + tyres (6,000 × 1)	30,000
Running charges	**1,38,000**
Total cost	**2,16,000**

Cost per passenger-km = 2,16,000 ÷ 2,10,000 = **₹1.029**. Takings needed = 2,16,000 ÷ 80% = 2,70,000 → fare **₹1.286 per passenger-km**, i.e. about **₹77.14 per passenger for a 60-km trip**.

QUESTION D11 – Material mix and yield (6 marks)

Standard: 60 kg of A at ₹10 and 40 kg of B at ₹15 give 90 kg of output. Actual: A 650 kg at ₹11, B 450 kg at ₹14; output **954 kg**. Calculate material cost, price, usage, mix and yield variances.

SOLUTION D11

Standard input for 954 kg = 954 ÷ 0.9 = 1,060 kg → SQ: A 636, B 424. Standard cost = 6,360 + 6,360 = **₹12,720**. Actual cost = 7,150 + 6,300 = **₹13,450**. Revised standard quantity (1,100 kg in 60 : 40): A 660, B 440.

Variance	A ₹	B ₹	Total ₹
Price = AQ × (SP − AP)	650 (A)	450 (F)	**200 (A)**
Usage = (SQ − AQ) × SP	140 (A)	390 (A)	**530 (A)**
Mix = (RSQ − AQ) × SP	100 (F)	150 (A)	**50 (A)**
Yield = (SQ − RSQ) × SP	240 (A)	240 (A)	**480 (A)**
Material cost			**730 (A)**

Check: 200 A + 530 A = 730 A; 50 A + 480 A = 530 A ✓.