ICAP

Certificate in Accounting and Finance Stage Examination

6 March 2025
3 hours – 100 marks
Additional reading time – 15 minutes

Cost and Management Accounting

Instructions to examinees:
(i) Answer all **NINE** questions.
(ii) Answer in **black** pen only.

Section A

Q.1 Following information has been extracted from the product-wise budget prepared by Empire Industries Limited (EIL) for the next year:

	Product X	Product Y
Sales/production volume (units)	120,000	160,000
	------ Rs. per unit ------	
Sales price	500	400
Cost of production:		
▪ Material	200	180
▪ Labour	100	90
▪ Factory overheads (60% variable)	60	60
	360	330
Gross profit per unit	**140**	**70**

Additional information:

(i) Sales is made through a national distributor who charges a commission of 5% on sales. In addition, an amount of Rs. 800,000 per month is paid to the distributor as rent for the warehouse used to store the goods. The cost of transporting goods from the factory to the warehouse is borne by EIL and is estimated at Rs. 10 per unit. All other selling costs are borne by the distributor.
(ii) Skilled labour is used for the production of Product X and is paid a fixed monthly salary, regardless of production level. However, labour of Product Y is semi-skilled and is paid based on production levels. Labour for Products X and Y are paid at Rs. 250 and Rs. 200 per hour respectively.
(iii) Total administration expenses are estimated at Rs. 600,000 per month.
(iv) The sales ratio is expected to remain the same irrespective of any changes in total sales volume.

Required:
Compute the total sales amount at which EIL is expected to break-even, along with the product-wise sales quantity. **(09)**

Q.2 Bear Ltd (BL) is engaged in the production of 'Chem-B', which passes through two departments: Department A and Department B. Below are the production details of Department B for the latest quarter:

	Units	% of completion
Opening work-in-process	20,000	30%
Units transferred from Department A	180,000	-
Units transferred to finished goods store	160,000	-
Closing work-in-process	30,000	30%

Materials are added in Department B immediately after inspection, which occurs when the production is 35% complete. Conversion costs are incurred evenly throughout the process. 4% of the inspected units are normally lost.

Required:
Compute equivalent production units if BL uses:

(i) FIFO method **(04)**
(ii) Weighted average method **(04)**

Q.3 Workhard Limited is engaged in manufacturing three products and uses Activity Based Costing for allocation of factory overheads. The details of its overheads for the month of April 2025 are estimated as follows:

Description	Rs. in '000
Salaries of labour supervisors	14,400
Fuel and power	13,320
Repairs and maintenance - machines	9,000
Repairs and maintenance - factory	6,360
Ordering department's costs	3,300
Other factory overheads	1,275
	47,655

The following data is estimated for allocating factory overheads:

	Product A	Product B	Product C
Production **(units)**	50,000	55,000	60,000
Raw material purchases **(kg)**	75,000	110,000	150,000
Order quantity **(kg)**	25,000	27,500	30,000
Direct labour hours per unit	1.25	1.50	1.75
Number of machines	30	40	50
Machine hours per unit	0.30	0.36	0.42
Energy consumption per machine hour **(kWh)**	6	10	15
Area occupied by each machine **(square yards)**	20	18	16

Other factory overheads are to be distributed based on production.

Required:
Compute the factory overhead rate per direct labour hour for each product using Activity Based Costing. **(09)**

Q.4 TRM Limited uses a single raw material for production and stores it in a nearby rented warehouse. During the year 2024, 1,600,000 units were purchased at Rs. 750 per unit, with an average order quantity of 64,000 units. TRM incurred the following costs related to ordering and holding the raw material:

	Rupees
Fixed costs of the purchase department	1,680,000
Variable costs of the purchase department	750,000
Warehouse rent	1,240,000
Transportation cost (Rs. 45,000 per order)	1,125,000
Insurance costs (2% of the purchase costs)	600,000

TRM's new finance manager believes that some of these costs can be reduced significantly if each order is based on Economic Order Quantity. In this respect, he has gathered the following information relating to 2025:

(i) Annual warehouse rent would comprise of Rs. 300,000 plus Rs. 15 per unit for storing each unit.
(ii) Raw material price and usage is expected to increase by 20% and 25% respectively.
(iii) Insurance costs would remain 2% of the purchase costs.
(iv) All other expenses are expected to increase by 10% due to inflation.

TRM maintains a safety stock of 8,000 units.

Required:
Determine the Economic Order Quantity for the year 2025. **(07)**

Q.5 SAZ Limited sells a single product, Zee, with budgeted sales of 365,000 units for the next year at Rs. 3,600 per unit. A single raw material is required to produce Zee. The relevant details of the raw material are as follows:

Quantity required per unit **(kg)**	8
Cost per kg **(Rs.)**	160
Economic Order Quantity **(kg)**	146,000
Normal lead time **(in days)**	10
Annual holding cost per kg **(Rs.)**	100
Probability of receiving order on time	75%
Probability of delay in order by 1 day	15%
Probability of delay in order by 2 days	10%

Additional information:

(i) The variable conversion cost is Rs. 1,000 per unit of Zee.
(ii) Production and sales are carried out evenly throughout the year.
(iii) Sales lost due to stock-outs cannot be recovered.
(iv) SAZ operates 365 days a year.

Required:
Determine the optimal quantity of safety stock of raw material that SAZ should maintain. **(09)**

Q.6 DML produces a single product and is experiencing a decline in workers' productivity. DML currently employs 200 workers, each earning Rs. 250 per hour. On average, a worker works 25 days per month, with 8 hours per day. The following information is available in this regard:

(i) **Current operational overview for February 2025:**

- **Production output analysis**

	Current	**Standard**
Average good units per worker	720	810
Rejected units as a % of total units	10%	10%

- **Pricing and cost**

	Rupees
Sale price per good unit	400
Sale price per rejected unit	50
Material cost per unit	120
Variable factory overhead per labour hour	200

- Rejected units are identified only after the production process is 100% complete.

(ii) **Proposed incentive plan:**
To encourage high productivity and discourage low-quality work, management is considering to implement the following plan:

- If the workers produce above 810 units, they will be considered 'improved workers' and will be paid a bonus of Rs. 200 per unit for such extra good units.
- If the rejected unit percentage of the workers exceeds 10%, a deduction of Rs. 50 per unit will be made for such extra rejected units. The deduction applies only to workers eligible for a bonus.

The impact of the incentive plan is estimated as follows:

Category	**% of workers**	**Average good units per worker (per month)**	**Rejected units as a % of total units**
Improved workers	60%	880	12%
Other than improved workers	40%	630	10%

Required:
Evaluate and recommend whether adopting the incentive plan would be beneficial for DML. **(08)**

Section B

Q.7 Junaid Ali Limited (JAL) is engaged in the production of various products. Below are the extracts from its next year budget relating to its products Cee and Dee:

Description	Cee	Dee
Units produced and sold	300,000	200,000
	------ Rs. in million ------	
Sales	1,200	1,000
Cost of sales		
Material	500	400
Direct labour	300	270
Factory overheads		
Indirect labour	40	30
Fuel and power	50	40
Repairs & maintenance	20	10
Other FOH (25% are fixed)	60	54
Administration expenses (Fixed)	180	150
Total expenses	1,150	954
Net profit	**50**	**46**

After preparing the budget, the price of the raw material used in Cee, increased unexpectedly by 60%. The management believes that sale price of Cee cannot be increased by more than 5% as presently the market is experiencing a surplus of Cee. Therefore, the management is considering to stop the production of Cee for about one year, after which, the production may resume as the competition is expected to subside and price increase would become possible.

The following information is available for making this decision:

(i) Cee is also used internally for the production of Dee. One unit of Cee is consumed in producing 5 units of Dee, besides other raw materials. An alternative material, available at Rs. 4,500 per unit, can be used in place of Cee. In the budget, internal transfer of Cee for the production of Dee has been recorded at the normal selling price of Cee and is included in the units sold of Cee.

(ii) Direct labour is paid at Rs. 250 per hour, and each labour works on an average of 200 hours per month. According to the union agreement, Rs. 50,000 are payable to each labour upon termination of their services.

(iii) 80% of indirect labour represents the salaries of labour supervisors. One labour supervisor is required for every 10 direct labours. Services of a labour supervisor can be terminated upon payment of Rs. 100,000. All remaining indirect labour is fixed.

(iv) 90% of fuel and power is variable, as the remaining fuel and power is used for air-conditioning and other similar activities.

(v) 60% of repairs and maintenance pertain directly to machines. Out of remaining amount, 30% is fixed.

(vi) Assume that direct labour and labour supervisors required for one product cannot be utilized for another product within the company.

Required:
On the basis of the financial information given above, compute the change in overall net profit in each of the following situations:

(a) If JAL continues the production of Cee **(03)**
(b) If JAL discontinues the production of Cee **(12)**

Q.8 Sarzameen Company Limited (SCL) uses a single raw material for its manufacturing operations. It follows perpetual inventory system for recording and applies the weighted average method for valuing its raw material.

The following is a schedule of purchases and consumption of raw material for the month of February 2025:

Date	Description	Notes	Quantity (kg)	Rate	Amount
				----------Rupees----------	
1.2.2025	Opening inventory		6,000	1,600	9,600,000
6.2.2025	Shipment received	(i)	24,000	1,725	41,400,000
12.2.2025	Issued for consumption	(ii)	(22,000)	1,700	(37,400,000)
18.2.2025	Shipment received	(iii)	25,000	1,766	44,150,000
24.2.2025	Issued for consumption	(ii)	(25,500)	1,750	(44,625,000)
25.2.2025	Issued for consumption	(iv)	(500)	1,750	(875,000)
28.2.2025	**Closing inventory**	(v)	**7,000**	**1,750**	**12,250,000**

Notes:

(i) Insurance in transit of Rs. 91,800 was incurred on shipment received on 6 February 2025 which was incorrectly debited to factory overheads.

(ii) On 12 February 2025, 1,000 kg of raw material issued for consumption exceeded the requirement. The production department returned this excess quantity to the warehouse on the same day. This returned quantity was subsequently reissued on 24 February 2025, in addition to issuance of 25,500 kg of raw material. No adjustment was made for subsequent issuance of these 1,000 kg as no entry was made on the return of these quantities.

(iii) On 18 February 2025, 2,000 kg of raw material were lost during transit. However, the recording in the inventory system was made based on the supplier's invoice, which listed the full quantity. SCL received Rs. 3,350,000 from the insurance company for the transit loss, which was credited to other income net of insurance in transit cost of Rs. 150,000. No further adjustments were made in the records to account for this shortfall.

(iv) On 25 February 2025, 500 kg of raw material was moved to another warehouse but was erroneously recorded as consumption.

(v) A physical stock check of raw material at all warehouses was carried out on 28 February 2025 which revealed the following:

Good quantity	kg	5,000
Damaged quantity	kg	400

Damaged quantity of raw material can be sold for Rs. 1,000 per kg.

SCL accounts for adjustments for inventory excess/shortage, net realisable value, and insurance shortfalls in the Profit and Loss Account.

Required:

(a) Prepare a revised schedule for February 2025. **(11)**

(b) Record necessary journal entries for notes (i) to (v). **(07)**

Q.9 Panther Limited (PL) is engaged in the production and sale of industrial chemicals. Below is the information related to one of its products, 'Panther Premium', for the month of February 2025:

Standard cost per batch:

Cost component	Amount (Rs.)	Rate (Rs.)
Raw material A	70,000	200 per kg
Raw material B	21,000	140 per kg
Direct labour	60,000	300 per hour
Factory overheads (25% fixed)	120% of direct labour cost	

Actual results for February 2025:

Cost component	Amount (Rs.)	Quantity consumed
Raw material A	26,106,000	137,400 kg
Raw material B	7,084,000	46,000 kg
Direct labour	23,000,000	-
Fixed overheads	7,800,000	-
Variable overheads	7% over standard cost per unit	

Additional information:

(i) Each batch produces 100 units of Panther Premium.
(ii) Direct labour rate increased by 5% due to inflation.
(iii) PL produced 37,500 units of Panther Premium, which were 1,500 units over its budgeted quantities.

Required:
Calculate the following:

(a) Material price, mix and yield variances **(06)**
(b) Direct labour rate and efficiency variances **(03)**
(c) Variable overhead expenditure and efficiency variances **(03)**
(d) Fixed overhead expenditure, efficiency and capacity variances **(05)**

(THE END)