The Institute of Chartered Accountants of Pakistan

Certificate in Accounting and Finance Stage Examination

4 March 2021
3 hours – 100 marks
Additional reading time – 15 minutes

Cost and Management Accounting

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

Q.1 Mehnat Limited (ML) manufactures a product KLM which goes through two processes, Process A and Process B. Following information pertains to process A for the month of February 2021:

	kg	Rs. in '000
Opening work in process (80% complete)	2,000	5,000
Materials added during the month	18,000	36,000
Conversion costs		12,000
Transferred to Process B	16,000	-
Closing work in process (60% complete)	3,000	-

Additional information relating to Process A:

(i) Costs of opening work in process consisted of Rs. 3,600,000 as to material and Rs. 1,400,000 as to conversion costs.
(ii) Materials are added at the start of the process and conversion costs are incurred evenly throughout the process.
(iii) Process loss is determined on inspection which is carried out at 75% of completion.
(iv) Process loss is estimated at 12% of the input which is sold as scrap at Rs. 400 per kg.
(v) Inventory is valued using weighted average method.

Required:
(a) Prepare a statement of equivalent production units. **(04)**
(b) Compute the costs of finished goods, closing work in process and production gain/loss. **(07)**
(c) Prepare journal entries to record production gain/loss of process A for the month. **(02)**

Q.2 (a) What do you understand by the term 'Sustainability Reporting'? List any **three** external benefits of sustainability reporting. **(05)**

(b) Platinum (Private) Limited (PPL) has recently obtained a loan of Rs. 500 million from Gold Enterprises (GE) for 2 years. The loan carries a floating rate of interest payable annually. The existing rate of interest is 10%.

PPL's treasury department expects increase in interest rate in the coming monetary policy. In order to avoid any losses in this respect, PPL has entered into an agreement with Metallic Investments (MI) to buy an interest rate cap at 14% and they also agreed to a floor at 8%.

Required:
(i) Briefly explain the terms cap, floor and collar. **(02)**
(ii) Compute the interest which PPL would pay to GE and the amounts which PPL and MI would pay to settle their obligations towards each other, if the interest rate on the due date is:

- 15% per annum
- 9% per annum **(04)**

Q.3 Elements Limited (EL) is in the process of launching a newly developed product 'Lotus'. Manufacturing facility has been commissioned and production would commence from 1 July 2021. In this respect, a cash budget for the six months ending 31 December 2021 is under preparation and following information has been gathered:

(i) At 100% capacity utilisation of the facility, Lotus's annual production is 800,000 units. Considering market demand, EL plans to operate the plant at 60% capacity in the first quarter ending 30 September 2021 and at 75% capacity in the subsequent quarters.

(ii) Lotus's cost per unit is estimated as under:

Direct material	1.5 kg at Rs. 360 per kg **(inclusive of normal loss)**
Direct labour	1.2 hours at Rs. 240 per hour
Factory overheads – variable	Rs. 180 per direct labour hour
Operating expenses – variable	Rs. 94 per unit produced

(iii) Direct material would be added at start of the manufacturing process. Normal loss is estimated at 10% of the input. 60% of the loss would result in solid waste which would be sold for cash at Rs. 500 per kg. Sale proceeds from the waste would be credited to cost of production.

Direct material inventory would be maintained for average 15 days' consumption of current quarter based on budgeted production, whereas finished goods inventory would be maintained for average 30 days' budgeted production of the next quarter.

(iv) Fixed factory overheads of Rs. 1,000,000 (including depreciation of Rs. 450,000) would be incurred every month.

(v) In addition to the above, following expenses would be incurred:

- Lotus is an outcome of a research carried out by Humble Research Institute (HRI). As per the agreement, a fixed amount of Rs. 2,800,000 is payable to HRI on the date of commencement of production of Lotus. In addition, a royalty of Rs. 40 per unit sold would also be payable.
- Administrative expenses would amount to Rs. 1,200,000 per month. This amount would be inclusive of allocated head office salaries of Rs. 250,000.
- A sales promotion campaign has been planned from 1 July 2021 at a cost of Rs. 6,000,000. In this respect, 20% of the cost would be paid in June 2021 and the remaining amount would be payable in two equal instalments on 1 October 2021 and 15 January 2022.

(vi) Unless otherwise specified, payments would be made as detailed under:

- Direct material purchases within 50 days;
- Direct labour on 25th of each month; and
- All other expenses within 30 days.

(vii) Lotus would be sold at a contribution margin of 20% and 25% for cash and credit sales respectively. Cash sales is estimated to be 25% of the credit sales. Credit customers are expected to pay within 40 days of the sales.

Other information:

- EL uses marginal costing and follows FIFO method for valuation of inventory.
- All the transactions would occur evenly throughout the period unless otherwise specified.
- Consider 30 days in a month.

Required:

Prepare cash budget for the six months ending 31 December 2021. ***(Month-wise/quarter-wise cash budget is not required)*** **(20)**

Q.4 Standard Limited (SL) is in the business of buying and selling electric ovens. It follows perpetual inventory system and uses weighted average method for valuation of inventory. Following information is extracted from SL's records for the month of February 2021:

(i) Opening inventory consisted of 220,000 units having average cost of Rs. 7,000 per unit.

(ii) 280,000 units were purchased on 5 February 2021, at Rs. 7,200 per unit.

(iii) 180,000 units were sold to Khurram Limited (KL) on 10 February 2021.

(iv) 5,000 defective units were returned by KL on 12 February 2021.

(v) 30% of the defective units returned to SL, had a manufacturing fault and were returned to the supplier on 15 February 2021. Remaining defective units were damaged due to mishandling at the warehouse. These units were disposed of as scrap on 20 February 2021 for Rs. 2,000 per unit.

(vi) 5,000 units were sent to KL on 22 February 2021 in replacement of the defective units returned.

(vii) 150,000 units were sold on 25 February 2021.

On 28 February 2021, a physical stock count was carried out and the following was discovered:

- 4,500 units were identified as obsolete having net realizable value of Rs. 6,000 per unit.
- 500 units were found missing.

Required:
Prepare necessary journal entries to record the above transactions relating to inventory. **(09)**

Q.5 Bright Limited (BL) is engaged in the manufacturing of two products, Shine and Glow. Both these products are processed through two production departments, A and B, while department X and Y provide services to both the production departments. Below is a summary of the indirect costs incurred by BL for manufacture of 100,000 units of Shine and 60,000 units of Glow during the year ended 31 December 2020:

	Rs. in '000
Salaries and wages	115,000
Depreciation of machinery	80,000
Building insurance	25,000
Electricity	60,000
	280,000

Other information related to the four departments is given below:

	Department A	**Department B**	**Department X**	**Department Y**	**Total**
Cost of machinery **(Rs. in '000)**	250,000	150,000			400,000
Floor Area **(square feet)**	15,000	6,000	6,000	3,000	30,000
No. of employees	150	50	25	25	250
Services provided by					
– Department X	80%	20%			
– Department Y	75%	15%	10%		

The overhead absorption rates used by BL for allocation to Shine and Glow are Rs. 1,800 and Rs. 1,700 per unit respectively. Any under/over absorbed overheads are adjusted to cost of sales.

Required:
(a) Compute product-wise actual overheads for Shine and Glow. **(08)**
(b) Compute the product-wise under/over absorbed production overheads. **(02)**

Q.6 Bounce Enterprises (BE) manufactures and sells customized products. To utilise its idle facilities, BE is working on a three-year proposal received from Joy Limited to manufacture and supply a product 'Crystal' at Rs. 3,600 per unit. Details of the proposal and relevant information are summarised as under:

(i) In the first year, BE would supply 10,000 units of Crystal that would increase annually by 1,000 units.

(ii) A specialised machine for refining and finishing of Crystal would be purchased at a cost of Rs. 8 million. The machine can be disposed of at 30% of its cost at the end of third year.

(iii) BE depreciates its plant and machinery at 25% using reducing balance method.

(iv) One unit of Crystal would require 2 kg of a raw material Z-plus which is available in the market at Rs. 1,000 per kg.

Presently, 12,000 kg of a raw material Z1 is available with BE which was purchased at Rs. 400 per kg for manufacture of a product which is now discontinued. Currently Z1 has no use. Available quantity of Z1 can be converted into 8,000 kg of Z-plus at a processing cost of Rs. 550 per kg of input. Alternatively, Z1 can be sold back to the supplier at 40% of its cost.

(v) Crystal would be produced in batches of 1,000 units each and the first batch would require 2,500 skilled labour hours. Learning curve effect is estimated at 90% but that would remain effective for the first nine batches only. At 90%, the index of learning curve is –0.152.

BE hires skilled labour at a rate of Rs. 260 per hour. It is expected that if the project is not accepted then there would be 2,200 idle labour hours available for each year.

(vi) BE would also require 1,200 semi-skilled labour hours per batch which is available at a cost of Rs. 150 per hour. Alternatively, this work can be outsourced at a cost of Rs. 195 per unit.

(vii) Variable overheads would be charged at Rs. 140 per skilled labour hour. Fixed costs associated with the proposal (other than depreciation) is expected to be Rs. 3.2 million per annum, 25% of which would be allocated overheads.

(viii) Inflation is estimated at 5% per annum on sales revenue and all costs, with effect from year one.

Required:

(a) Determine year-wise relevant cost of:

- raw material
- direct labour
- overheads **(15)**

(b) BE evaluates its projects using a cost of capital of 15%. Tax rate applicable on BE is 30% and tax is payable/refundable in the year in which liability arises. Tax depreciation is assumed to be the same as accounting depreciation.

Using the cost worked out in part (a) above, compute feasibility of this proposal for BE. ***(Assume that except where stated otherwise, all cash flows would arise at the end of the year)*** **(10)**

Q.7 Fine Limited (FL) is involved in manufacturing and distribution of various consumer products. Following information pertains to one of its products, FGH for the year ended 31 December 2020:

	Rs. in '000
Sales (500,000 units)	56,000
Material (Rs. 30 per kg)	(22,500)
Skilled labour (Rs. 125 per hour)	(10,000)
Semi-skilled labour (Rs. 100 per hour)	(5,000)
Production overheads (50% variable)	(4,500)
Gross profit	**14,000**

The management of FL has decided to take following measures with respect to production of FGH for the next year:

(i) Increase production volume by 10% to take advantage of increase in demand. Currently the plant for FGH is operating at 80% of its capacity.
(ii) Purchase 60% of the material from FL's associated company that has offered a bulk discount of 5%. Additional wastage from this material is expected to be 1%.
(iii) Replace 40% of the skilled labour with semi-skilled labour. It is estimated that semi-skilled labour will take 30% more time to do the work of skilled labour.

Impact of inflation on all costs would be 10%.

FL's management also wants to maintain the same gross profit margin in 2021 as the previous year.

Required:
Compute the selling price per unit of FGH for the next year. **(12)**

(THE END)