The Institute of Chartered Accountants of Pakistan

Certificate in Accounting and Finance Stage Examination

9 March 2023
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 Ace Contractors Limited (ACL) supplies customized components to various industrial customers. It is considering to bid for a contract for supply of 100,000 units of LM3, to Sarmad Industries. Its technical department has provided the following estimates regarding the production cost of the first batch consisting of 25,000 units of LM3:

	Total costs (Rs. in '000)
Raw material (63,000 kg @ Rs. 600 per kg)	37,800
Labour (4 hours per unit @ Rs. 300 per hour)	30,000
Overheads (Rs. 400 per labour hour)	40,000

Following additional information has also been made available:

(i) LM3's production will be carried out in four batches of 25,000 units each.
(ii) Raw material consumption includes wastage which is estimated at 5% of the actual raw material to form part of the product. However, the wastage is expected to reduce by 10% in each new batch as the production process improves with experience.
(iii) Learning curve effect for labour is estimated at 90%. It is expected to remain effective for the first three batches only. Index of 90% learning curve is –0.152.
(iv) 20% of the overheads are fixed and mostly represent the maintenance and depreciation of factory building and machines.

Required:
Calculate the minimum bid price which ACL should quote to earn a profit of 35% on the quoted price. **(10)**

Q.2 Masroor Limited (ML) uses EOQ model to order one of its raw materials MCRM. The EOQ determined using the existing data is 72,000 units. ML maintains a safety stock equivalent to daily usage of 2,000 units. Presently, 10 orders are placed annually and the lead time is 30 days. The ordering costs are Rs. 86,400 per order.

Recently, ML has faced some shortages due to delays in the procurement time. ML's cost accountant, Noman Shaikh has consulted the procurement and the production teams and has come up with the following analysis:

(i) Probabilities of delay in lead time:
- Delay of 4 days is 0.10
- Delay of 10 days is 0.06

(ii) 3 units of MCRM are required to produce the final product.
(iii) Contribution margin from the final product is Rs. 1,800 per unit.

Based on his analysis, Noman Shaikh has suggested to increase the safety stock.

Required:
Determine whether it would be advisable for ML to increase the safety stock so as to avoid the possibility of a stock-out. **(09)**

Q.3 Faiza Company Limited (FCL) produces office furniture. FCL recently established a management accounting department and hired Salman to lead it. Salman has evaluated the performance of the production department for the last quarter and made his presentation to the Board. Some of the information extracted from his presentation are given below:

Description	Rs. in '000	Effect of variance
Purchase of direct material	22,000	
Direct labour cost	5,000	
Material price variance	2,600	Favourable
Material yield variance	360	Unfavourable
Material mix variance	80	Favourable
Labour rate variance	350	Favourable
Opening and closing inventory of direct material	14,000	

Due to overall favourable variance, Salman has praised the performance of production department. However, FCL's CFO is of the view that the matter needs more analysis to determine the real reasons for the variances, before making a final conclusion with regard to the performance of the production department.

Required:
Briefly discuss the possible reasons because of which the CFO does not seem to agree with Salman and has suggested carrying out of further analysis. **(08)**

Q.4 Discuss the non-financial consequences if safety stock is not maintained by an entity. **(05)**

Q.5 Karsaz Industries (KI) produces three products A, B and C. KI is facing a shortage of labour as some of its experienced labour have moved to other industries which are offering better wages.

Budgeted data of KI which is based on the originally available 200,000 labour hours is as follows:

	A	B	C
Sales quantity (in units)	40,000	30,000	20,000
	---------	Rs. per unit	--------
Selling price	2,000	3,000	5,000
Raw material	600	1,160	1,200
Labour	300	240	900
Variable FOH (Based on labour hours)	480	960	1,440
Fixed FOH (Allocated on the basis of unit price)	100	150	240

Wages are paid at Rs. 240 per labour hour. Due to the shortage of labour, the available labour hours have been reduced to 140,000.

Required:
Determine product wise profit that KI can earn assuming that no other manufacturer of these products is available in the market. **(10)**

Q.6 Using the information provided in **Question 5**, assume that the shortfall would be purchased from an other manufacturer, at a cost of 80% of the current selling prices of the respective products.

Required:
Determine the quantities of each product that should be produced internally by KI so as to maximise the profit. **(07)**

Section B

Q.7 Asghar Ali Associates (AAA) commenced business on 1 January 2023. It manufactures two products X and Y. Following information pertains to its activities during the month of January 2023.

(i) During the month, sales of X and Y were 11,600 units and 9,400 units respectively. Throughout the month, AAA sold these products at 25% above cost.
(ii) Product X requires 6 kg of raw material A and product Y requires 5 kg and 3 kg of raw materials B and C respectively.
(iii) Data relating to raw materials are as follows:

Description		A	B	C	Total
Purchases during the period	**(kg)**	132,000	90,000	50,000	
Invoice value	**(Rs. in '000)**	52,800	43,200	30,000	126,000
Freight-in	**(Rs. in '000)**				21,760
Transit insurance	**(Rs. in '000)**				3,780
Closing inventory	**(kg)**	36,000	20,000	8,000	

(iv) Product X requires 5 labour hours per unit and product Y requires 3 labour hours per unit. The cost of labour is Rs. 300 per hour.
(v) Factory overheads during the period were Rs. 13,320,000.
(vi) Sales includes 200 units of X and 400 units of Y which were returned by the customers because of being damaged. These are with AAA. The defective units need to be reworked by incurring a per unit cost of Rs. 1,500 and Rs. 800 on products X and Y respectively, so they can fetch the current selling price.

Required:
Determine the value of closing finished goods as at 31 January 2023. **(15)**

Q.8 Rafiqi Industry Limited (RIL) produces a product which passes through two departments, A and B. The details relating to its production during the month of February 2023 is as follows:

Description	Department A			Department B		
	Units	Material	Conversion	Units	Material	Conversion
		------- Rs. in '000 -------			------- Rs. in '000 -------	
Opening WIP	20,000	120,000 (100% complete)	32,000 (40% complete)	18,000	144,000 (100% complete)	36,000 (60% complete)
Input during the month	155,000	-	-	-	-	-
Received from A	-	-	-	140,000	?	?
Costs for the month	-	920,400	673,650	-	194,900	445,500
Transferred out	140,000	?	?	120,000	?	?
Closing WIP	25,000	? (100% complete)	? (60% complete)	30,000	? (100% complete)	? (80% complete)

Other information:
(i) RIL uses FIFO method for valuation of its inventories.
(ii) Rejected units are sold on an "as is, where is" basis. During the month, proceeds from sale of rejected units in departments A and B were Rs. 4 million and Rs. 6 million respectively.
(iii) In both departments:

- 100% material is added at the start of the process.
- units are inspected when 90% complete as to conversion.
- normal loss is 5% of units transferred out.

Required:
(a) Compute equivalent production units. **(10)**
(b) Compute the cost of finished goods, closing WIP and abnormal loss/gain. **(10)**

Q.9 Faisal Enterprises Limited (FEL) produces three products A, B and C. Each product is produced in a separate department. There are two service departments i.e. Repair & Maintenance (R&M) and Stores.

Following data is available for the month of February 2023:

	Production Departments			**Service Departments**		**Total**
	A	**B**	**C**	**R&M**	**Stores**	
	------------------- Rs. in '000 -------------------					
Indirect material cost	180	240	120	930	30	1,500
Indirect labour cost	160	210	150	60	20	600
Fuel and electricity						1,520
Air-conditioning and lighting						150
Depreciation & insurance – Machines						665
Depreciation & insurance – Building						50
Other insurance						270

Other information:						
Raw material cost (Rs. in '000)	60,000	45,000	30,000	-	-	135,000
Labour hours (no. of hours)	2,000	3,000	4,000	-	-	9,000
Machine hours (no. of hours)	5,000	6,000	8,000	-	-	19,000
Area (in square meters)	200	300	400	60	40	1,000
% of apportionment of service department's cost:						
▪ R&M	25%	30%	35%	-	10%	
▪ Stores	30%	25%	25%	20%	-	
Equivalent units in process – opening	2,000	2,000	2,500	-	-	
Equivalent units in process – closing	1,500	3,000	2,000	-	-	
Units transferred to finished goods	5,500	5,000	4,500	-	-	

Additional information:

(i) Raw material and labour are consumed evenly during the production process.

(ii) Direct labour is paid @ Rs. 300 per hour.

(iii) FEL uses simultaneous equation method for apportioning service departments' cost to production departments.

Required:

Allocate the factory overheads to the departments, clearly displaying the basis of allocation, and determine the cost of production of each unit. **(16)**

(THE END)