The Institute of Chartered Accountants of Pakistan

Cost and Management Accounting

Certificate in Accounting and Finance
Model Paper 100 marks – 3 hours

Q.1 Jalal (Private) Limited is engaged in the supply of a specialized tool used in the automobile industry. Presently, the company is incurring high cost on ordering and storage of inventory. The procurement department has tried different order levels but has not been able to satisfy the management.

The Chief Financial Officer has asked you to evaluate the current situation. He has provided you the following information:

(i) The annual usage of inventory is approximately 8,000 cartons. The supplier does not accept orders of less than 800 cartons. The cost of each carton is Rs. 2,186.
(ii) The average cost of placing an order is estimated at Rs 14,000 and presently two orders are placed in each quarter.
(iii) The sales are made on a regular basis and on average, half of the quantity ordered is held in inventory. The cost of storage is considered to be 16% of the value of inventory.

Required:
(a) Determine the following:
- Economic Order Quantity (EOQ). **(02)**
- Number of orders to be placed, based on EOQ. **(02)**

(b) Compute the ordering costs and storage costs in the existing situation. How much cost can be saved if quantity ordered is equal to EOQ as determined in (a) above. **(06)**

Q.2 Hamid Limited (HL) produces certain chemicals for textile industry. The company has three production departments. All materials are introduced at the beginning of the process in Department-A and subsequently transferred to Department-B. Any loss in Department-B is considered as a normal loss. Following information has been extracted from the records of HL for Department-B for the month of August 2013:

Opening work in process (Litres)	Nil
Closing work in process (Litres)	10,500
Units transferred from Department-A (Litres)	55,000
Units transferred to Department-C (Litres)	39,500
Labour (Rupees)	27,520
Factory overhead (Rupees)	15,480

Materials from Department-A were transferred at the cost of Rs. 1.80 per litre. The degree of completion of work in process as to cost originating in Department-B were as follows:

WIP	Completion %
50% units	40%
20% units	30%
30% units	24.5%

Required:
Prepare cost of production report for Department-B for the month of August 2013. **(15)**

Q.3 Nasir Limited (NL) manufactures two joint products Alpha and Beta and a by-product Zeta from a single production process. Following information is available from NL's records for the month of February 2013:

Direct material	25,000 kg. @ Rs. 25 per kg.
Direct labour @ Rs. 15 per hour	Rs. 432,000
Normal process loss	20% of the material consumed

Overheads are allocated to the products at the rate of Rs. 10 per direct labour hour. The normal loss is sold as scrap at the rate of Rs. 8 per kg.

Following data relates to the output from the process:

Product	Output ratio	Selling price per kg. (Rs.)
Alpha	75%	95.0
Beta	15%	175.0
Zeta	10%	52.5

Alpha is further processed at a cost of Rs. 30 per unit, before being sold in the market. Joint costs are allocated on the basis of net realisable value.

Required:
Compute the total manufacturing costs for February 2013. Also calculate the profit per kg. for Alpha and Beta. **(10)**

Q.4 Tariq Limited (TL) is the manufacturer of consumer durables. Diamond Limited, one of the major customers, has invited TL to bid for a special order of 150,000 units of product Beta.

Following information is available for the preparation of the bid.

(i) Each unit of Beta requires 0.5 kilograms (kg) of material "C". This material is produced internally in batches of 25,000 kg each, at a variable cost of Rs. 200 per kg. The setup cost per batch is Rs. 80,000. Material "C" could be sold in the market at a price of Rs. 225 per kg. TL has the capacity to produce 100,000 kg of material "C"; however, the current demand for material "C" in the market is 75,000 kg.

(ii) Every 100 units of product Beta requires 150 labour hours. Workers are paid at the rate of Rs. 9,000 per month. Idle labour hours are paid at 60% of normal rate and TL currently has 20,000 idle labour hours. The standard working hours per month are fixed at 200 hours.

(iii) The variable overhead application rate is Rs. 25 per labour hour. Fixed overheads are estimated at Rs. 22 million. It is estimated that the special order would occupy 30% of the total capacity. The production capacity of Beta can be increased up to 50% by incurring additional fixed overheads. The fixed overhead rate applicable to enhanced capacity would be 1.5 times the current rate. The utilized capacity at current level of production is 80%.

(iv) The normal loss is estimated to be 4% of the input quantity and is determined at the time of inspection which is carried out when the unit is 60% complete. Material is added to the process at the beginning while labour and overheads are evenly distributed over the process.

(v) TL has the policy to earn profit at the rate of 20% of the selling price.

Required:
Calculate the unit price that TL could bid for the special order to Diamond Limited. **(12)**

Q.5 Riaz Industries Limited is currently negotiating a contract to supply its products to C-Mart, a large chain of departmental stores. C-Mart finally offered to sign a one year contract at a lump sum price of Rs. 19,000,000.

The Cost Accountant of Riaz Industries Limited believes that the offered price is too low. However, the management has asked you to re-assess the situation. The cost accountant has provided you the following information:

Statement of Estimated Costs (Project: C-Mart)

	Notes	Rupees
Material:		
X (at historical cost)	(i)	1,500,000
Y (at historical cost)	(ii)	1,350,000
Z	(iii)	2,250,000
Labour:		
Skilled	(iv)	4,050,000
Unskilled	(v)	2,250,000
Supervisory	(vi)	810,000
Overheads	(vii)	8,500,000
Total cost		**20,710,000**

You have analysed the situation and gathered the following information:

(i) Material X is available in stock. It has not been used for a long time because a substitute is currently available at 20% less than the cost of X.
(ii) Material Y was ordered for another contract but is no longer required. Its net realizable value is Rs. 1,470,000.
(iii) Material Z is not in stock.
(iv) Skilled labour can work on other contracts which are presently operated by semi-skilled labour who have been hired on temporary basis at a cost of Rs. 325,000 per month. The company will need to give them a notice of 30 days before terminating their services.
(v) Unskilled labour will have to be hired for this contract.
(vi) Two new supervisors will be hired for this contract at Rs. 15,000 per month. The present supervisors will remain employed whether the contract is accepted or not.
(vii) These include fixed overheads absorbed at the rate of 100% of skilled labour. Fixed production overheads of Rs. 875,000 which would only be incurred if the contract is accepted, have been included for determining the above fixed overhead absorption rate.

Required:
Prepare a revised statement of estimated costs using the opportunity cost approach, for the management of Riaz Industries Limited and state whether the contract should be accepted or not. **(13)**

Q.6 Kashan Limited (KL) is considering to set-up a plant for the production of a single product IGM3. The initial capital investment required to set up the plant is Rs. 15 billion. The expected life of the plant is 5 years with a residual value of 20% of initial cost.

The plant will have an annual production capacity of 1.0 million tons. A local group has offered to purchase all the production for Rs. 8,000 per ton in year 1 and thereafter at a price to be increased 5% annually. Other relevant information is as under:

(i) In year 1, operating costs (other than depreciation) per annum would be Rs. 2,000 per ton which are expected to increase 6% per annum.
(ii) The tax rate applicable to the company is 30% and the company can claim normal tax depreciation at 20% per annum under the reducing balance method. Assume that all cash flows would take place at the end of the year using a discount rate of 10%.

Required:
Calculate the net present value of the project. **(12)**

Q.7 Ghafoor Limited produces and markets a single product XY-2. The company uses a standard costing system. Following is the standard material mix for the production of 400 units of XY-2.

	Weight (Kg.)	**Standard rate per Kg. (Rs.)**
Material A	30	240
Material B	25	320

Actual costs on the production of 192 units of XY-2 for the month of August 2013 were as follows:

	Weight (Kg.)	**Actual rate per Kg. (Rs.)**
Material A	16	230
Material B	13	308

Required:
Calculate the following material variances from the above data:
(i) Cost variance (ii) Price variance (iii) Mix variance
(iv) Yield variance (v) Usage variance **(15)**

Q.8 Shoaib Limited has two divisions each of which makes a different product. The budgeted data for the next year is as under:

	Product A	**Product B**
	Rupees	
Sales	200,000,000	150,000,000
Direct material	45,000,000	30,000,000
Direct labour	60,000,000	45,000,000
Factory overheads	35,000,000	15,000,000
Price per unit	20	25

Details of factory overheads are as follows:
(i) Product A is stored in a rented warehouse whose rent is Rs. 0.25 million per month. Product B is required to be stored under special conditions. It is stored in a third party warehouse and the company has to pay rent on the basis of space utilized. The rent has been budgeted at Rs. 0.12 million per month.
(ii) Indirect labour has been budgeted at 20% of direct labour. 70% of the indirect labour is fixed.
(iii) Depreciation for assets pertaining to product A and B is Rs. 6.0 million and Rs. 2.0 million respectively.
(iv) 80% of the cost of electricity and fuel varies in accordance with the production in units and the total cost has been budgeted at Rs. 4.0 million.
(v) All other overheads are fixed.

Required:
Compute the break-even sales assuming that the ratio of quantities sold would remain the same, as has been budgeted above. **(13)**

(THE END)