The Institute of Chartered Accountants of Pakistan

Cost Accounting

Intermediate Examination	7 March 2014
Spring 2014	100 marks - 3 hours
Module D	Additional reading time - 15 minutes

Q.1 (a) What is 'opportunity cost'? Give two practical examples of opportunity cost. **(04)**

(b) A company annually produces 600 units of a product. Each unit requires 6 kg of material Y. The costs related to material Y are as follows:

Cost per kg.	Rs.	16,000
Inspection charges per order	Rs.	20,000
Transportation cost per trip (upto 400 units per trip)	Rs.	25,000
Annual warehousing cost per unit	Rs.	100
Financing cost		15%

Required:

(i) Economic Order Quantity for material Y. **(05)**

(ii) Total ordering and holding costs, if each order is based on EOQ and the company maintains a safety stock of 30 units. **(04)**

Q.2 Alpha Limited is preparing its departmental budgets and product cost estimates for the next year. The costs and related data for the year ending 31 December 2014 have been estimated as follows:

	Machining	**Assembly**	**Finishing**	**Maintenance**	**Total**
Costs:			**Rs. in 000**		
Direct wages	274	146	328	-	748
Indirect wages	46	27	36	137	246
Direct materials	365	46	18	-	429
Indirect materials	68	18	36	91	213
Power	-	-	-	-	465
Light and heat	-	-	-	-	46
Depreciation	-	-	-	-	108
Rent and rates	-	-	-	-	114
Warehousing cost	-	-	-	-	98
Other data:					
Direct labour hours	12,000	8,000	16,000	6,000	42,000
Machine hours	40,000	2,000	3,000	-	45,000
No. of employees	6	4	8	3	21
Floor area (m^2)	1,000	400	300	300	2,000
Net book value of fixed assets (Rs. 000)	20,000	8,000	3,000	4,000	35,000

80% of the maintenance department's time is used in the maintenance of machines whereas the remaining time is consumed in cleaning and maintenance of factory buildings.

Required:

Calculate appropriate overhead absorption rates for the machining, assembly and finishing departments. **(12)**

Q.3 (a) The following information relates to a week's work for three employees:

	Employee		
	A	B	C
Output (units)	160	276	68
Time allowed (hours per unit)	0.5	0.25	0.75
Basic hourly wage rate (Rupees)	80	100	70
Hours worked as direct labour	48	54	30
Hours worked as indirect labour	-	-	12

The normal working week is 42 hours. For the first six hours, overtime is paid at 50% above the normal rate. Any further overtime is paid at double the normal rate. Bonus is paid at three-fifth of the normal rate for the hours saved.

Required:
Using the information given above, calculate the total wages earned by each employee. **(08)**

(b) The following is a summary of payroll of LMN Factory Limited for the month of February 2014:

	Rupees
Basic salary	420,000
Allowances	147,000
Gross salary	567,000
Deductions :	
Loans to staff	(13,000)
Income tax	(15,500)
Employees' provident fund contribution	(35,000)
Net salary	503,500

The company is also required to pay the following:

- Company's contribution to the provident fund which is equal to employees' contribution
- 5% of the basic salary to a government organisation

Required:
Pass journal entries to record the payroll cost for the month of February 2014. **(06)**

Q.4 XY Limited manufactures and sells a single product. The selling price and costs for the year ended 31 December 2013 were as follows:

	Rs. per unit
Selling price	1,600
Direct material	630
Direct labour	189
Production overheads (40% fixed)	220
Selling and distribution overheads (60% fixed)	165

Other information is as follows:

(i) During the year, 12,000 units were produced.
(ii) The opening and closing stocks were 4,000 and 3,000 units respectively
(iii) Fixed overhead cost per unit is based on normal capacity which is 15,000 units.
(iv) Overhead costs have increased by 10% over the previous year and raw material and labour by 5%.
(v) The company uses FIFO method for costing its inventory.

Required:

(a) Profit and loss account for the year ended 31 December 2013 under absorption costing and marginal costing. **(14)**

(b) Reconciliation of profit worked out under the two methods. **(02)**

Q.5 ABC Limited deals in manufacturing and marketing of perfumes. The company has three brands to cater for different classes of customers. The selling prices and contribution margins for the year 2013 were as follows:

	A	B	C
	-------------Rs. per unit-------------		
Sale price	10,000	8,000	5,000
Contribution margin	5,000	3,000	2,000

Total sale for the year 2013 was Rs. 15,600 million and sales volume ratio for A, B and C was 2:3:5 respectively.

The following estimates pertain to the year ending 31 December 2014:

- The average sale prices and variable costs for the next year are expected to increase by 14% and 8% respectively.
- The normal market growth is estimated at 5% per annum. However, the company plans to launch an aggressive marketing campaign for which additional advertising budget of Rs. 250 million has been approved. With increased advertisement, increase in sales volume for A, B and C has been forecasted at 15%, 12% and 10% respectively.

Required:

Compute the projected contribution margin for the year 2014 and the impact of advertising on profit of the company. **(13)**

Q.6 Orient Stores Limited (OSL) operates retail outlets at various petrol pumps across the city. The average monthly performance of these outlets is as under:

	Rs. in '000
Sales	1,500
Rent expense	50
Other fixed costs	150

OSL earns contribution margin of 15% on items on which retail prices are printed. These items constitute 40% of the total sales. All other items are sold at the contribution margin of 25%.

Sohaib Enterprises (SE) has offered OSL to establish an outlet at one of its petrol pumps located in a posh area of the city. OSL's planning department estimates that:

- At the proposed location, the sales volumes would be 20% lower than average.
- Being a posh area, OSL would be able to charge 10% higher prices on items on which retail prices are not printed.
- Other fixed costs would be the same as the average of the existing outlets.

Required:

(a) Determine the break-even sales under the assumptions that SE would monthly charge:
Option I : rent of Rs. 75,000
Option II : rent of Rs. 50,000 plus 5% commission on total sales. **(14)**

(b) Which of the above options would you recommend and why? **(02)**

Q.7 The following projections are contained in the budget of Scientific Chemicals Limited for the year ending 31 December 2014:

(i) Annual local and export sales

	Product C031		**Product D032**	
	Rs. per unit	**Units**	**Rs. per unit**	**Units**
Local sales	1,965	40,000	1,410	50,000
Export sales	2,100	25,000	1,500	24,000

(ii) Raw material and labour per unit

		Product C031	**Product D032**
Raw material-A at Rs. 25 per kg.	**(Kg.)**	4.0	3.0
Raw material-B at Rs. 60 per kg.	**(Kg.)**	3.5	2.6
Skilled labour hours at Rs. 250 per hour	**(Hours)**	2.4	2.0
Semi-skilled hours at Rs. 120 per hour	**(Hours)**	5.0	2.5

(iii) Variable overheads for each unit of product C031 and D032 are estimated at Rs. 125 and Rs. 60 respectively.

(iv) Fixed overheads including admin & selling overheads would amount to Rs. 3 million per month.

The company is faced with the under-mentioned constraints:

- The supplier of material-B can supply 27,700 kg. per month only.
- Only 35 skilled workers will be available for each shift of 8 hours while factory will be operated for 25 days in a month on 3 shift basis.

Required:
Determine optimal production plan for the next year assuming that the company cannot afford to terminate the export sales contract because of the heavy damages payable in case of default. **(16)**

(THE END)