



THE INSTITUTE OF COST AND MANAGEMENT ACCOUNTANTS OF BANGLADESH
CMA DECEMBER, 2018 EXAMINATION
PROFESSIONAL LEVEL-III
SUBJECT: 302. ADVANCED COST ACCOUNTING

Time: Three hours

Full Marks: 100

- ❖ All questions are to be attempted.
- ❖ Show computations, where necessary.
- ❖ Answer must be brief, relevant, neat and clean.
- ❖ Start answering each question from a fresh sheet.

Q. No. 1

Centeon Pharma produces sleeping pills that passes through two department: Department-A and Department-B. The cost of production data for the month of July, 2018 are as follows:

Production Data	Department-A	Department-B
Production statistics:		
Units in process July 1	5,000	14,500
Units in process, July 31	4,000	3,000
Units started and from preceding Deptt.	10,000	11,000
Units completed & transferred/shipped	11,000	22,000

Percentage of completion of WIP:	<u>Department-A</u>		<u>Department-B</u>	
	Oct'01	Oct'31	Oct'01	Oct'31
Direct Materials	70%	50%	0%	0%
Direct Labour	50%	30%	70%	65%
Factory overhead	50%	30%	70%	65%

Cost Data:

Work in process July 01:

	<u>Department-A</u>	<u>Department-B</u>
Cost from preceding department	-	Tk.30,100
Direct materials	Tk. 2,950	-
Direct labour	Tk. 950	Tk.750
Factory overhead	Tk. 700	Tk. 1,000

Cost added during July:

Direct materials	Tk. 10,050	Tk. 2,200
Direct labour	Tk. 5,350	Tk. 4,860
Factory overhead	Tk. 3,980	Tk. 5,490

Materials are added at various stages in the Department-A. In the Department-B the materials are added at the end of Finishing Operation, which is just the middle of the process, exactly one half of the labour and overhead costs apply to the finishing operation. Inspection is also occurred at the end of finishing process and packing process begins with the units that have proved good at the inspection. The company uses the average costing method.

Required:

- (i) Units lost, if any, for each department during July.
- (ii) The equivalent production for the calculation of unit costs for each department for July.
- (iii) A cost of production report for July.

[Marks: (4+4+12) = 20]

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Q. No. 2

- (a) What is Kaizen costing and how does it differ from target costing?
(b) How is target costing useful in assessing a product's total life cycle cost?
(c) The accountant of Bright Eyes Inc. has gathered the following January 2018 information about quality costs for the production of heavy-duty sunglasses:

	<u>Taka</u>
Total defective units	12000
Number of units reworked	2400
Number of defective units returned	800
Total prevention cost	170000
Total appraisal cost	27200
Cost of warranty work	10000
Profit per good units produced and sold	80
Profit per defective units sold	50
Cost to rework a defective unit	25
Cost to process a returned unit	20
Litigation related to product failure	140000
Opportunity cost of lost customers while litigation is being settled	100000

Required:

- (i) Profit lost by selling un-reworked defects.
(ii) Total rework cost
(iii) Cost of processing customer returns
(iv) Total failure cost and
(v) Total quality cost.

[Marks: (5+5+10) = 20]

Q. No. 3

- (a) Discuss potential benefits of tolerance limits to an organization.
(b) Lafarge Cement Company uses a standard cost system. Cement is produced by mixing two major components. P (lime) and Q (Clay) with water and by adding a third component R quantitatively insignificant.
Standard material and cost for the production of 100 tons of output are :

<u>Component</u>	<u>Ton</u>	Percent of Input		<u>Amount/Taka</u>	
		<u>Cost/Taka</u>	<u>Quantity</u>		
Material P	55	500	50%	27,500	
Material Q	44	350	40%	15,400	
Material R	<u>11</u>	<u>250</u>	<u>10%</u>	<u>2,750</u>	
Input	110		100%	45,650	= Tk. 415.00 per ton
Output	100			45,650	= Tk. 456.50 per ton

The Monthly budgeted factory overhead for a normal level of 16,500 labor hours is as follows:

	<u>Fixed Overhead/Taka</u>	<u>Variable Overhead/Taka</u>
Plant Manager	20,000	-
Supervisors	18,000	-
Indirect Suppliers	22,200	8,100
Power and Light	8,500	20,400
Water	3,000	22,000
Repairs and Maintenance	5,000	12,000
Insurance	4,500	-
Depreciation-Production Facilities	37,750	-
Total	123,750	82,500

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Q. No. 3(cont'd...)

To convert 110 tons of materials into 100 tons of finished cement requires 500 direct labor hours at Tk. 75.00 per hour or Tk. 375.00 per ton. Factory overhead is applied on direct labor hour basis.

Producing 3,234 tons of finished cement in March,2018, the following costs were incurred :

Direct Labor	15,800 hours @ Tk. 79.50
Fixed Factory Overhead	Tk. 110,750
Variable Factory Overhead	Tk. 84,900

	<u>Quantity</u>	<u>Materials Purchased</u> <u>Cost per ton/Taka</u>	<u>Materials Requisitioned</u>
Material P	2,000 tons	540	1,870 tons
Material Q	1,200 ,,	370	100 ,,
Material R	500 ,,	240	440 ,,

There were no inventories of materials or work in process at the beginning of March. The materials price variance is recognized at the time of purchase.

Required:

- Compute materials price, mix and yield variances.
- Compute the direct labor rate, efficiency and yield variances.
- Compute the factory overhead spending, idle capacity, efficiency and yield variances.

[Marks: (2+5+5+8) = 20]

Q. No. 4

PQS Ltd makes and sells two products P and Q, each of which passes through the same automated production process. The following estimated information is available for period X.

- (i) Production data (per unit):

	P	Q
Direct material cost (Tk.)	2	40
Variable manufacturing overhead cost (Tk.)	28	4
Hours required	0.25	0.15

- Production / sales of products P and Q are 120,000 units and 45,000 units respectively. The selling prices per unit for P and Q are Tk. 60 and Tk. 70 respectively.
- Maximum demand for each product is 20% above the estimated sales levels.
- Total fixed manufacturing overhead cost is Tk. 1,470,000. This is absorbed by products P and Q at an average rate per hour based on the estimated production levels.

Required:

- Using net profit as the decision measure, show why the management of PQS Ltd argues that it is indifferent on financial grounds as to the mix of products P and Q which should be produced and sold and calculate the total net profit for period X.
- One of the production operations has a maximum capacity of 3,075 hours which has been identified as a bottleneck which limits the overall production / sales of products P and Q. The bottleneck hours required per unit for product P and Q are 0.02 and 0.015 respectively. All other information detailed in (a) still applies. Calculate the mix (units) of products P and Q which will maximize net profit and the value of the maximum net profit in Tk.
- The bottleneck situation detailed in (b) still applies. PQS Ltd has decided to determine the profit maximizing mix of products P and Q based on the throughput accounting principle of maximizing the throughput return per production hour of the bottleneck resource. This may be measured as:

$$\text{Throughput return per production hour} = (\text{selling price} - \text{material cost}) / \text{bottleneck hours per unit.}$$

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Q. No. 4 (cont'd...)

All other information detailed in (a) and (b) still applies, except that the variable overhead cost as per (a) is now considered to be fixed for the short / intermediate term, based on the value (Tk.) which applied to the product mix in (a).

Calculate the mix (units) of products P and Q which will maximize net profit and the value of that net profit.

[Marks: (6+6+8) = 20]

Q. No. 5

(a) ABC Enterprises has prepared a draft budget for the next year assuming sales of 10,000 units as follows:

	Per Unit (Tk.)	Total (Tk.)
Sales	<u>30</u>	<u>300,000</u>
Variable Expenses:		
Direct Materials	8	80,000
Direct Labor	6	60,000
Variable overhead (2 hrs × Tk. 0.50)	<u>1</u>	<u>10,000</u>
Total Variable Expenses	<u>15</u>	<u>150,000</u>
Budgeted Contribution Margin	<u>15</u>	150,000
Budgeted Fixed costs		<u>140,000</u>
Budgeted Profit		<u>10,000</u>

The Board of Directors is dissatisfied with this budget, and asks a working party to come up with an alternate budget with higher target profit figures. The working party reports back with the following suggestions that will lead to a budgeted profit of Tk. 25,000. The company should spend Tk. 28,500 on advertising, & increase the target sales price up to Tk. 32 per unit. It is expected that the sales volume will also rise, in spite of the price rise, to 12,000 units.

In order to achieve the extra production capacity, however, the work force must be able to reduce the time taken to make each unit of the product. It is proposed to offer a pay and productivity deal in which the wage rate per hour is increased to Tk. 4. The hourly rate for variable overhead will be unaffected.

Required: Ascertain the target labor time required to achieve the target profit.

(b) Cost per unit data throughout five years of a project is computed as below:

Period	Estimated production (units)	Fixed Cost per annum (Tk.)	Variable cost @ Tk. 2	Total cost (Tk.)	Cost per unit (Tk.)
1	10,000	50,000	20,000	70,000	7.00
2	20,000	50,000	40,000	90,000	4.50
3	100,000	50,000	200,000	250,000	2.50
4	30,000	50,000	60,000	110,000	3.67
5	5,000	50,000	10,000	60,000	12.00

The cost per unit varies significantly from year to year because of the impact of fixed cost on production. The company is in a process of pricing the product based on cost per unit. To avoid different pricing in different years, your company has decided to apply life cycle costing concept to compute a single cost per unit data.

Required:

Based on the data given above and your understanding on life cycle costing, compute life cycle cost per unit.

[Marks: (15+5) = 20]

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