



THE INSTITUTE OF COST AND MANAGEMENT ACCOUNTANTS OF BANGLADESH  
CMA DECEMBER, 2016 EXAMINATION  
PROFESSIONAL LEVEL-III  
SUBJECT : 302. ADVANCED COST ACCOUNTING.

Reading Time: 15 minutes

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.**

ABC Limited manufactures a product '2X' by using the process normally R. T. for the month of May 2015, the following data is available. 30 Process R. T.

Material Introduced	16,000 units
Transfer to next process	14,000 units
Work-in-Process	4,000 units
At the beginning of the month (4/5 completed)	3,000 units
At the end of the month(2/3 completed)	

**Cost records:**

Work-in-Process at the beginning of the month	Material Rs. 30,000
Conversion cost	Rs. 29,200
Cost during the month	
Materials	Rs. 1,20,000
Conversion cost	Rs. 1,60,800

Normal spoiled units are 10% of goods finished output transferred to next process. Defects in these units are identified in their finished state. Materials for the product is put in the process at the beginning of the cycle of operation, whereas labour and other indirect cost flow evenly over the year. It has no realizable value for spoiled units.

**Required:**

- (i) Statement of equivalent production (average cost method);
- (ii) Statement of cost and distribution of costs;
- (iii) Process accounts.

[Marks: (8+8+4) = 20]

**Q. No. 2.**

(a) Budget and actual data for the last quarter of this year include:

	<u>Anti-ageing Cream</u>		<u>Facial Masks</u>		<u>Collage Fillers</u>	
	<u>Budget</u>	<u>Actual</u>	<u>Budget</u>	<u>Actual</u>	<u>Budget</u>	<u>Actual</u>
Sales (units)	240,000	250,000	280,000	260,000	120,000	140,000
Gross profit per unit	TK.34.00	TK.33.20	TK.20.00	TK.20.60	TK.22.00	TK.20.20

Calculate the following variances for the last quarter:

- (i) Sales mix gross profit variance
  - (ii) Sales quantity gross profit variance
  - (iii) Explain the meaning of the sales mix gross profit variance and why its calculation provides useful information for the company. You should use the figures calculated in above (i), (ii) to illustrate your answer
- (b) "Environmental costing is an important part of a company's environmental management system. Management needs to be aware of the extent of environmental costs if these are to be effectively managed".

**Required:**

Explain THREE benefits that may arise for a company that uses an environmental costing system.

Marks: (5+4+5) +6 = 20]

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**Q. No. 3.**

- (a) Starmark Limited is interested in cutting the amount of time between when a customer places an order and the order is completed. For the first quarter of the year, the following data were reported:

Inspection Time	0.5 days
Process Time	2.8 days
Wait Time	16.0 days
Queue Time	4.0 days
Move Time	0.7 days

**Required:**

- Compute the throughput time. Or velocity of production;
  - Compute the manufacturing cycle efficiency (MCE) for the quarter;
  - What percentage of the throughput time was spent in non-value-added activities?
  - Compute delivery cycle time;
  - If by use of JIT all queue time can be eliminated in production, what will be new MCE?
- (b) Describe the four costs of quality and segregate the following costs into those segments.

SL	Costs
A	Inspection
B	Quality Engineering
C	Depreciation f Test Equipment
D	Rework Labor
E	Statistical Process Control
F	Cost of Field Servicing
G	Supplies used in testing
H	System Development
I	Warranty Repairs
G	Loss due to Scraps
K	Producing testing
L	Product Recalls
M	Costs of disposal of defective products

**[Marks: (14+6) = 20]**

**Q. No. 4.**

- (a) Three products P, Q and R are produced together in a common process. Products P and Q are sold without further processing, but product R requires an additional process before it can be sold.

No inventories are held. There is no loss of volume in the additional process for product R.

The following data apply to March.

Output	Product P	3,600 litres
	Product Q	4,100 litres
	Product R	2,800 litres

Selling prices	Product P	£4.60 per litre
	Product Q	£6.75 per litre
	Product R	£10.50 per litre

Costs incurred in the common process	£42,500
Costs incurred in the additional process for R	£19,600

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

**Required:**

Calculate the value of the common process costs that would be allocated to product R using the sales proxy method (notional sales value method).

- (b) A newly formed engineering company has just completed its first three months of trading. The company manufactures only one type of product. The external accountant for the company has produced the following statement to present at a meeting to review performance for the first quarter.

**Performance report for the quarter ending 31 October 2016**

	<b>Budget</b>	<b>Actual</b>	<b>Variance</b>
Sales units	12,000	13,000	1,000
Production units	14,000	13,500	(500)
	<b><u>TK.000</u></b>	<b><u>TK.000</u></b>	<b><u>TK.000</u></b>
<b>Sales</b>	<b>360</b>	<b>385</b>	<b>25</b>
Direct materials	70	69	1
Direct labour	140	132	8
Variable production overhead	42	43	(1)
Fixed production overhead	84	85	(1)
Inventory adjustment	<u>(48)</u>	<u>(12)</u>	<u>(36)</u>
<b>Cost of sales</b>	<b><u>288</u></b>	<b><u>317</u></b>	<b><u>(29)</u></b>
<b>Gross profit</b>	<b><u>72</u></b>	<b><u>68</u></b>	<b><u>(4)</u></b>

The external accountant has stated that he values inventory at the budgeted total production cost per unit.

**Required:**

- (i) Produce an amended statement for the quarter ending 31 October 2016 that is based on a flexed budget.  
 (ii) Explain ONE benefit and ONE limitation of the statement you have produced.

**[Marks: 6+(10+4) = 20]**

**Q. No. 5.**

The First Renewable Energy Company (FRECL) makes two types of solar panels at its manufacturing plant: large panels for commercial customers and small panels for domestic customers. All panels are produced using the same materials, machinery and a skilled labour force. Production takes place for five days per week, from 7 am until 8 pm (13 hours), 50 weeks of the year. Each panel has to be cut, moulded and then assembled using a cutting machine (Machine C), a moulding machine (Machine M) and an assembly machine (Machine A).

As part of a government scheme to increase renewable energy sources, FRECL has guaranteed not to increase the price of small or large panels for the next three years. It has also agreed to supply a minimum of 1,000 small panels each year to domestic customers for this three-year period. Due to poor productivity levels, late orders and declining profits over recent years, the finance director has suggested the introduction of throughput accounting within the organisation, together with a 'Just in Time' system of production.

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Q. No. 5. (cont'd.....)

Material costs and selling prices for each type of panel are shown below.

	Large panels (BDT)	Small panels (BDT)
Selling price per unit	12,600	3,800
Material costs per unit	4,300	1,160

Total factory costs, which include the cost of labour and all factory overheads, are BDT 12 million each year at the plant.

Out of the 13 hours available for production each day, workers take a one hour lunch break. For the remaining 12 hours, Machine C is utilised 85% of the time and Machines M and A are utilised 90% of the time. The unproductive time arises either as a result of routine maintenance or because of staff absenteeism, as each machine needs to be manned by skilled workers in order for the machine to run. The skilled workers are currently only trained to work on one type of machine each. Maintenance work is carried out by external contractors who provide a round the clock service (that is, they are available 24 hours a day, seven days a week), should it be required. The following information is available for Machine M, which has been identified as the bottleneck resource:

	Hours per unit	
	Large panels	Small panels
Machine M	1.4 hours	0.6 hours

There is currently plenty of spare capacity on Machines C and A. Maximum annual demand for large panels and small panels is 1,800 units and 1,700 units respectively.

**Required:**

- (i) Calculate the throughput accounting ratio for large panels and for small panels and explain what they indicate to FRECL about production of large and small panels.
- (ii) Using throughput accounting, prepare calculations to determine the optimum production mix and maximum profit of FRECL for the next year.

**[Marks: (14+6) = 20]**

**= THE END =**