THE INSTITUTE OF COST AND MANAGEMENT ACCOUNTANTS OF BANGLADESH
CMA JUNE, 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

(a) Explain the key principles of target costing. State the management accountant role for applying target costing.

(b) Beta Ltd. manufactures a range of electronics products. Technical staff recently developed a design for a new type of in-car music player which can be used to play CDs, digital downloads, and cassette tapes. The board of the company has asked the marketing, financial, and production directors to evaluate the design before a decision is made as to whether to begin production of the music player.

The marketing director has suggested that tk. 90 would be a suitable selling price for the music player and that 6,000 units per annum would be sold at this price. Variable selling costs would amount to Tk. 12 per unit sold.

The financial director has estimated that the new capital equipment required in order to manufacture the music player would cost Tk. 3,000,000. The company requires an annual return on investment (ROI) of 8% on all capital investments.

The production director has not yet finalized her estimate of the cost of manufacturing the music player. However she has commented that the design has certain features which are likely to add to the complexity and cost of the manufacturing process without significantly enhancing the attractiveness of the product to potential customers.

Required:

(i) Using the data provided above, calculate the target cost of manufacturing the music player, and explain fully the significance of this figure.

(ii) Assume now that the production director has estimated the cost of manufacturing the music player (using the recently-developed design) at tk. 55 per unit and has suggested that the company should accept a reduced ROI if necessary. Calculate the ROI if this suggestion is accepted and comment on the production director's suggestion.

(iii) It is often stated that target costing is most likely to be effective when products are still at the design stage (i.e., before any production begins) and when comprehensive information about cost driver rates is available from the company's accounting system. Explain why this is so.

[Marks: {5+(5+5+5)} = 20]

Q. No. 2

Payson Company produces a product that passes through two departments: Mixing and Cooking. Both departments use the weighted average method. In the mixing department, all direct materials are added at the beginning of the progress. All other manufacturing inputs are added uniformly. Payson uses the weighted average method. The following information pertains to the Mixing department for February:

(a) Beginning work in progress (BWIP), February 1: 100, 000 pounds, 100 percent complete with respect to direct materials and 40 percent complete with respect to conversion cost. The costs assigned to this work are as follows:

Direct Material	$ 20,000
Direct labor	10,000
Overhead	30,000

Q. No. 2 (cont'd...)

(b) Ending work in process (EWIP), February 28: 50,000 pounds, 100% complete with respect to direct materials and 60% complete with respect to conversion costs.

(c) Units completed and transferred out: 370,000 pounds. The following costs were added during the months:

Direct materials	$211,000
Direct labor	100,000
Overhead	270,000

Required:

(i) Prepare a physical flow schedule.
(ii) Prepare a schedule of equivalent units.
(iii) Compute the cost per equivalent unit.
(iv) Compute the cost of goods transferred out and the cost of ending work in process.
(v) Prepare cost reconciliation.
(vi) Repeat requirements (b-e) using the FIFO method.

[Marks: (5+5+3+2+5+5) = 25]

Q. No. 3

(a) ST plc is a medium-sized engineering company using advanced technology. It has just implemented an integrated enterprise resource planning (ERP) system in place of an old MRP (manufacturing resource planning) system.
Discuss the changes that are likely to be seen after the implementation of the ERP system in:
  (i) the budget-setting process; and
  (ii) the budgetary control process

(b) 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	Tk. 4·60 per litre
	Product Q	Tk. 6·75 per litre
	Product R	Tk. 10·50 per litre

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

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).

(c) A company is preparing its cash budget for February using the following data. One line in the cash budget is for purchases of a raw material, J. The opening inventory of J in January is expected to be 1,075 units. The price of J is expected to be Tk. 8 per unit. The company pays for purchases at the end of the month following delivery.

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

One unit of J is required in the production of each unit of product 2, and J is only used in this product.

Monthly sales of product 2 are expected to be:

January	4,000 units
February	5,000 units
March	6,000 units

The opening inventory of product 2 in January is expected to be 1,200 units.

The company implements the following inventory policies.

At the end of each month the following amounts are held:

Raw materials: 25% of the requirement for the following month's production

Finished goods: 30% of the following month's sales

Required:

Calculate the value for purchases of J to be included in the cash budget for February.

[Marks: (6+5+4) = 15]

Q. No. 4

Bergen Inc. produces telephone equipment at its Georgia plant. In recent years, the company's market share has been eroded by stiff competition from Asian and European competitors. Price and product quality are the two key areas in which companies compete in this market. Jerry Holman, Bergen's president, decided to devote more resources to the improvement of product quality after learning that his company's products had been ranked fourth in product quality in a 2011 survey of telephone equipment users. He believed that Bergen could no longer afford to ignore the importance of product quality. Jerry set up a task force that he headed to implement a formal quality improvement program. Included on the task force were representatives from engineering, sales, customer service, production, and accounting because Jerry believed that this is a companywide program and all employees should share the responsibility for its success.

After the first task-force meeting, Sheila Haynes, manager of sales, asked Tony Reese, production manager, what he thought of the proposed program. Tony replied, "I have reservations. Quality is too abstract to be attaching costs to it and then to be holding you and me responsible for cost improvements. I like to work with goals that I can see and count! I don't like my annual bonus to be based on a decrease in quality costs; there are too many variables that we have no control over!"

Bergen's quality-improvement program has been in operation for 18 months, and the following cost report was recently issued. As they were reviewing the report, Sheila asked Tony what he thought of the quality program now. "The work is really moving through the production department," replied Reese. "We used to spend time helping the customer service department solve its problems, but these folks are leaving us alone these days. I have no complaints so far. I'll be anxious to see how much the program increases our bonuses."

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

Cost of Quality (COQ) Report by Quarter
(in thousands)

	June 30, 2016	Sept 30, 2016	Dec 31, 2016	Mar 31, 2017	June 30, 2017	Sept 30, 2017
Prevention costs						
Machine maintenance	$215	$215	$202	$190	$170	$160
Training suppliers	5	45	25	20	20	15
Design reviews	20	102	111	100	104	95
	$240	$362	$338	$310	$294	$270
Appraisal costs						
Incoming inspection	$45	$53	$57	$36	$34	$22
Final testing	160	160	154	140	115	94
	$205	$213	$211	$176	$149	$116
Internal failure costs						
Rework	$120	$106	$114	$88	$78	$62
Scrap (net)	68	64	53	42	40	40
	$188	$170	$167	$130	$118	$102
External failure costs						
Warranty repairs	$69	$31	$24	$25	$23	$23
Customer returns	262	251	122	116	87	80
	$331	$282	$146	$141	$110	$103
Total quality cost	$964	$1,027	$862	$757	$671	$591
Total production cost	$4,120	$4,540	$4,380	$4,650	$4,580	$4,510

Required:

(i) Identify at least three factors that should be present for an organization to successfully implement a quality-improvement program.

(ii) By analyzing the cost of quality (COQ) report presented, determine whether Bergen's quality improvement program has been successful. List specific evidence to support your answer.

(iii) Discuss why Tony Reese's current reaction to the quality improvement program is more favorable than his initial reaction.

(iv) Jerry Holman believed that the quality improvement program was essential and that Bergen could no longer afford to ignore the importance of product quality. Discuss how Bergen could measure the opportunity cost of not implementing the quality improvement program.

(v) Comment on the following statement: "COQ reports allow an organization to focus on the reduction or elimination of non-value-added costs of quality."

[Marks: (3+7+5+5+5) = 25)

Q. No. 5

The DT Bangladesh manufactures filing small cabinet in two operations: machining and finishing. It provides following information:

	Machining	Finishing
Annual Capacity	100,000 units	80,000 units
Annual production	80,000 units	80,000 units
Fixed operating costs (Excluding direct materials)	Tk. 64,00,000	Tk. 40,00,000
Fixed Operating cost per unit produce (Tk. 64,00,000/80,000; 40,00,000/80,000)	Tk. 80 per unit	Tk. 50 per unit

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

Each Cabinet sells for Tk. 720 and has direct material costs of Tk. 320 incurred at the start of the machining operation. Danida has no other variable costs. DT can sell whatever output it produces. The following requirements refer only to the preceding data. There is no connection between the requirements.

(1) DT is considering using some modern jigs and tools in the finishing operation that would increase annual finishing output by 1,000 units. The annual cost of these jigs and tools is Tk. 3,00,000. Should DT acquire these tools? Show your calculations.

(2) The production manager of the Machining Department has submitted a proposal to do faster setups that would increase the annual capacity of the machining Department by 10,000 units and would cost Tk. 50,000 per year. Should DT implement the change? Show your calculations.

(3) DT produces 2,000 defective units at the machining operation. What is the cost to DT of the defective items produced? Explain your answer briefly.

(4) DT produces 2,000 defective units at the finishing operation. What is the cost to DT of the defective items produced? Explain your answer briefly.

[Marks: (4+4+4+3) = 15]

= THE END =