FINAL EXAMINATION

June 2015 *F–P15(EPM)*
Syllabus 2008

Management Accounting—Enterprise Performance Management

Time Allowed: 3 Hours Full Marks: 100

The figures in the margin on the right side indicate full marks.

Attempt **Question No. 1** *(carrying 25 marks), which is compulsory and* **any five** *more questions (each carrying 15 marks) from the rest.*

Please: (i) Answer all part of a question at one place only.
(ii) Open a new page for answer to a new question.

1. (a) State whether the following statements given below are 'True' or 'False'. If True, simply rewrite the given statement (= 1 mark). If False, state it as False (= ½ mark) and rewrite the correct statement (= ½ mark): 1×5=5

(i) A 'level strategy', one of Aggregate Planning strategies, implies matching demand and capacity, period by period.
(ii) 'Effector' is another name for Management Information System (MIS).
(iii) Value chain concepts and the value-added concepts are fundamentally same.
(iv) The term 'Cybernetics' is derived from the Latin word 'Kybernetes'.
(v) Collaborative tools can consist of software only.

(b) Out of the different options given against each of the following statements, only one is the most appropriate option. You are required to write it down. 2×5=10

(i) ANU Ltd., is preparing a quotation for a new product. The time taken for the first unit is 30 hrs. The Company expects 85% learning Curve (Index is-0.2345). The Company desires that the quotation should be based on the time taken for the final output within the learning period, which is expected to end after the Company has produced 200 units. The time per unit of product to be used for the quotation is

A. 6.67 hours B. 13.34 hours C. 25.50 hours D. None of these.

[Given: $198^{-0.2345} = 0.2893$, $199^{-0.2345} = 0.2890$, $200^{-0.2345} = 0.2887$]

(ii) The information relating to the direct material cost of ASTRO Ltd., is as under:

Standard Price per unit	₹ 3.60
Actual quantity purchased in units	2400
Standard quantity allowed for actual production in units	2175
Material Price Variation on Purchase (Favourable)	₹ 360

What is the actual purchase price per unit?

A. ₹ 3.06 B. ₹ 3.10 C. ₹ 3.45 D. ₹ 3.70

(iii) AMTEK Ltd., makes and sells a single product. The Selling Price and Marginal Revenue equations are:
Selling Price = ₹ 75 – ₹ 0.002 x
Marginal Revenue = ₹ 75 – ₹ 0.003x

Where x is the number of Product in units, the Company makes
The Variable Costs amount to ₹ 30 per unit and the fixed costs are ₹ 1,50,000.
In order to maximize the profit, the Selling Price should be:

A. ₹ 55 B. ₹ 45 C. ₹ 35 D. ₹ 30

(iv) AMBA Ltd., operates throughput Accounting System. The details of a product per unit are as under:

Selling Price	₹ 85
Material Cost	₹ 40
Conversion cost	₹ 25
Time on bottleneck resources	15 minutes

The return per hour for the product is:

A. ₹ 270 B. ₹ 180 C. ₹ 120 D. Insufficient information

(v) The Selling of Product M, produced by AKIN Ltd., is set at ₹ 1200 for each unit and sales for the coming year are expected to be 500 units. If the Company requires a return of 12% in the coming year on its investment of ₹ 15 Lakhs in Product-M. The TARGET COST for each unit for the coming year is:

A. ₹ 630 B. ₹ 830 C. ₹ 840 D. ₹ 990

(c) Define the following terms in one/two sentences: 1×5=5

(i) Query tools
(ii) Talent Drain
(iii) Data Mining
(iv) Esteem Value
(v) Reverse Engineering

(d) Expand the following abbreviations: 1×5=5

(i) UCL
(ii) CONC
(iii) QFD
(iv) CWTQM
(v) SCP

2. (a) R.K. & Sons engaged in manufacturing plastic container is working at 40% capacity and produces 10,000 container per annum. The present cost break-up for one container is as under:

Material	₹ 10
Labour Cost	₹ 3
Overheads	₹ 5 (60% Fixed)

The Selling Price is ₹ 20 per container. If it is decided to work the factory at 50% capacity, the selling price falls by 3%. At 90% capacity, the selling price falls by 5%, accompanied by a similar fall in the prices of material. As a management accountant, you are required to:

(i) Calculate the profit at 50% and 90% capacities
(ii) Calculate the Break-even point for capacity production. 5+5=10

(b) What do you mean by Back flushing in JIT System? Explain briefly the problems with Back flushing, which must be corrected/addressed for the effective functioning of the system. 1+4=5

3. (a) What are the options for demand stimulation? How would you adjust capacity to match current demand? 4+4=8

   (b) A firm manufactures and sells two products viz., Alpha and Beta. Each unit of Alpha requires 1 hour of machining and 2 hours of skilled labour, whereas each unit of Beta uses 2 hours of machining and 1 hour of labour. For the coming month, the machine capacity is limited to 720 machine hours and the skilled labour is limited to 780 hours. Not more than 320 units of Alpha can be sold in the market during a month. Unit Contribution from Alpha is ₹ 6 and from Beta is ₹ 4.

   You are required to develop a suitable LPP model that will enable determination of the optimal product-mix. You **do not solve the LPP.** 7

4. Bajrangbali Public Health Centre runs an Intensive Medical Care unit. For this purpose, it has hired a building at a rent of ₹ 50,000 per month, with an understanding that it would bear the repairs and maintenance charges also. The unit consists of 25 beds and 5 more beds can be comfortably accommodated when the occasion so demands.

   The permanent staff attached to the unit is as follows:

   2 Supervisors, each at a salary of ₹ 5,000 per month.

   4 Nurses, each at a salary of ₹ 3,000 per month.

   2 Ward boys, each at a salary of ₹ 1,500 per month.

   Though the unit is open for the patients for all the 365 days in a year, scrutiny of accounts in 2014 revealed that only for 120 days in the year, the unit had the full capacity of 25 patients per day and for another 80 days, it had on an average of 20 beds only occupied per day. But there were also occasions, when the beds were full, extra beds were hired at a charge of ₹ 50 per bed per day and this did not come to more than 5 beds extra above the normal capacity on any one day. The total hire charges for the extra beds incurred for the whole year amounts to ₹ 20,000.

   The unit engaged expert doctors from outside to attend on the patients and the fees were paid on the basis of the number of patients attended and the time spent by them and on an average worked out to ₹ 1,00,000 per month in 2014. The other expenses for the year were as under:

	₹
Repairs & Maintenance	36,000
Foods supplied to patients	4,44,000
Sweepers and other services (variable)	1,25,000
Laundry charges for Patients' bed-linen	2,80,000
Medicines supplied	3,50,000
Cost of Oxygen, X-ray etc. (Fixed)	5,40,000
General Administrative charges allocated to unit	4,95,500

   (i) If the unit recovered an overall amount of ₹ 1,000 per day on an average from each patient, what is the profit per patient day made by the unit in 2014?

   (ii) The unit wants to work on a budget for 2015 but the number of patients requiring intensive medical care is a very uncertain factor. Assuming that the same revenue and expenses prevails in 2015, in the first instance, work out the number of patient days required by the unit to break-even. 15

5. (a) What is 'Quality Circle'? What is the structure of the Quality Circle? 2+3=5

(b) Day-Night Travelling Agency deals with numerous personal callers each day and prides itself on its level of service. The time to deal with each caller depend on the client's requirements which range from, say, a request for a brochure to booking a round-the-world-cruise.

The time taken by the officer of the Agency to deal with clients and the arrival pattern of clients follow the distribution as given below:

Time to deal with clients	Minutes	2	4	6	10	14	20	30
	Probability	0.05	0.10	0.15	0.30	0.25	0.10	0.05
Time elapsing between arrivals	Minutes	1	8	15	25			
	Probability	0.20	0.40	0.30	0.10			

You are required to simulate the arrival and serving of 10 clients by taking the following Random Numbers and

(i) Indicate which of the clients will wait for how many minutes and

(ii) Calculate the probability of time office being idle.

Take the starting time as 10 AM.
Random Numbers to be used are:

Arrival Pattern:	02	48	43	75	89	36	96	47	36	61
Serving Pattern:	60	73	61	35	28	16	80	46	60	11

10

6. (a) Avneet Ltd., has developed a new cabin cruiser which they have earmarked for the medium to large boat market. A market analysis has a 30% probability of annual sales being 5,000 boats, a 40% probability of 4,000 annual sales and a 30% probability of 3,000 annual sales. This company can go into limited production, where variable costs are ₹ 10,000 per boat and fixed costs are ₹ 8,00,000 annually. Alternatively, they can go into full scale production, where variable costs are ₹ 9,000 per boat and fixed costs are ₹ 50,00,000 annually. If the new boat is to be sold for ₹ 11,000, should the company go into limited or full scale production, when their objective is to maximize the expected profits? As a Cost and Management Accountant, please advise the company.

10+1=11

(b) Explain the four basic principles of TQM? 4

7. XYZ Ltd., manufactures by mixing three raw materials. For every 100 kg of the mix, 125 kg of raw materials are used. In April, 2014, 60 batches were prepared to produce an output of 5,600 kgs of the mix. The Standard and the Actual particulars for April, 2014 are as under:

	Standard Data		**Actual Data**		
Raw material	Mix %	Price per kg. ₹	Mix %	Price per kg. ₹	Quantity of raw materials purchased in kg.
A	50	20	60	21	5,000
B	30	10	20	8	2,000
C	20	5	20	6	1,200

Calculate:

(i) Material Cost Variance
(ii) Material Price Variance
(iii) Material Usage Variance
(iv) Material Mix Variance
(v) Material Yield Variance 3×5=15

8. Write Short Notes on *any three*: 5×3=15
(i) Theory of Constraint (TOC)
(ii) Optimized Production Technology (OPT)
(iii) BSC as a Performance management and Strategy deployment methodology
(iv) ISO 9001-2000 is based on eight quality management principles