

**B.Tech. MECHANICAL ENGINEERING
(COMPUTER INTEGRATED
MANUFACTURING)**

00408

Term-End Examination

June, 2014

BME-013 : PRODUCTION MANAGEMENT

Time : 3 hours

Maximum Marks : 70

*Note : Answer any **seven** questions. All questions carry equal marks. Use of scientific calculator is allowed.*

1. (a) Describe various methods for evaluating a location. 5
- (b) Raj Electricals Ltd., has fixed costs of ₹ 6,00,000 this period. Variable costs include labour charges of ₹ 100 per unit and material cost of ₹ 200 per unit. Selling price of the product is ₹ 500 per unit. Calculate the BEP. 5

2. Describe the features of a network of project. The following table gives crash information of a project.

Activity	Normal Duration (Days)	Normal Cost (₹)	Crash Duration (Days)	Crash Cost (₹)
1 – 2	9	8,000	7	10,000
1 – 3	5	5,000	3	8,000
2 – 3	7	7,000	5	8,600
2 – 4	8	6,000	6	7,000
3 – 4	6	9,000	4	11,000

The overhead costs are ₹ 1,300 per day. Determine the optimum cost and duration of the project.

10

3. Classify various methods of forecasting. Discuss any one method and its merits and demerits in detail.

10

4. (a) Discuss the inputs and outputs of MRP. 5

- (b) Describe the steps in ERP implementation. What are the reasons for implementation failures? 5

5. (a) Derive the expression for EOQ. What are its limitations? 5

- (b) The Production department of a company needs 3600 kg of raw materials per year. It has been estimated that the cost of placing order is ₹ 36 and the cost of carrying inventory is 25% of investment. The price is ₹ 10 per kg. The purchase manager wishes to determine the operating doctrine in terms of optimal lot size, number of orders, when to order, total costs, etc. Help him. 5
6. Discuss the importance of inbound and outbound logistics in supply chain, with the help of suitable examples. 10
7. Explain the (nine) rules for Bottleneck Scheduling in TOC. 10
8. (a) Distinguish between variables and attributes and discuss the suitable control charts for them. 5
- (b) An insurance company wishes to design a control chart to monitor the claim form if they are filled correctly. The incomplete or incorrect among 300 inspected during the past 15 days are found to be 10, 8, 9, 13, 7, 7, 6, 6, 8, 8, 7, 6, 11, 12 and 8. Calculate the control limits and construct suitable control chart. 5

9. What are the assumptions for sequencing of 2 machines \times n jobs ? Find the sequence that minimizes the total elapsed time in days required to repair and test the following jobs. Also draw Gantt chart. 10

Activity	1	2	3	4	5	6	7
Repairing Time in days	3	5	9	9	6	3	3
Testing Time in days	4	5	1	6	3	3	4

10. Write short notes on any *five* of the following : $2 \times 5 = 10$

- (a) Manufacturing Resource Planning (MRP-II)
- (b) Cellular layout
- (c) Balanced Score Card
- (d) Work Sampling
- (e) Bill of Materials and Product Structure Tree
- (f) A-B-C Analysis
- (g) Margin of Safety and Opportunity Cost