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BME-013

03113

BACHELOR OF TECHNOLOGY IN MECHANICAL ENGINEERING (COMPUTER INTEGRATED MANUFACTURING)

Term-End Examination

December, 2012

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. Define and explain Product layout and Process layout with suitable sketches. Compare their advantages and disadvantages. Also mention their suitability of application. **10**

2. (a) Distinguish between the features of CPM and PERT. Give few applications of CPM and PERT. **5**

   (b) A project is composed of seven activities whose time estimates are as follows. **5**

Activity		1 - 2	1 - 3	1 - 4	2 - 5	3 - 5	4 - 6	5 - 6
Time in weeks	t_o	2	2	4	1	3	2	4
	t_m	2	5	6	1	6	6	8
	t_p	8	8	20	1	15	10	16

(i) Draw a PERT Network diagram.

(ii) Identify critical path, (calculate)

(iii) Find the duration of the project.

(iv) Calculate variance of critical path.

3. (a) Give various applications of Cost - Volume Profit Analysis. Describe how this analysis is conducted. **5+5**

(b) Discuss the term Break Even Point (BEP).

4. A TV manufacturer uses simple exponential smoothing with $\alpha = 0.1$ to forecast demand. For the first week of March, the forecast was 400 units while the actual demand turned out to be 370 units. **10**

(a) Forecast the demand for the second week of March.

(b) If the actual demand for 2^{nd} week turned out to be 417 units, forecast the demand for 3^{rd} week. Continue the forecasting for the subsequent four weeks. You may take actual demands for the subsequent weeks as 409, 388, 377, 445 and 410 units.

5. (a) List out the objectives of MRP. How MRP can reduce the inventory and increase the plant operating efficiency. **5**

(b) Discuss the terms "Bill of Materials (BOM)" and "Master Production Schedule (MPS)" with suitable examples. **5**

6. (a) Discuss the concept of EOQ. What are the assumptions of EOQ. 5

(b) A company uses 10000 units of an item per year. The purchase price is ₹ 1 per item. Ordering cost is ₹ 25 per order. Carrying cost per year is 12% of the inventory value. Find 5

(i) EOQ

(ii) The number of orders per year, and

(iii) If the lead time is 4 weeks and assuming 50 weeks per year, find the re - order point.

7. Explain the concepts involved in TOC. What are the different steps involved in TOC ? Give the flow chart using these steps. 10

8. Describe the objectives of supply chain. Explain the performance attributes of a supply chain. Explain the three critical components (Supply, Demand and Logistics) of Supply Chain Management. 10

9. (a) ABC insurance company wants to design a control chart to monitor if claim forms are correctly completed. The incomplete forms among the 300 inspected during the past 10 days are found to be 10, 8, 9, 13, 7, 7, 6, 11, 12 and 8. Draw a suitable control chart and calculate the control limits. 5

(b) Distinguish between control limits and Tolerance limits. 5

10. Write short notes on **any two :** **10**

(a) ERP

(b) JIT

(c) Time study