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Total No. of Pages : 02

Total No. of Questions : 08

**M.Tech. (Electrical Engineering) (Power Systems and Renewable Energy) (Sem.-3)**

**Production Planning and Control**

**Subject Code : MTME-213**

**M.Code : 93204**

**Date of Examination : 03-01-23**

**Time : 3 Hrs.**

**Max. Marks : 60**

**INSTRUCTIONS TO CANDIDATES :**

**1. Attempt any FIVE questions out of EIGHT questions.**

**2. Each question carries TWELVE marks.**

1. (a) Discuss the functions of Production Planning & Control. 6  
(b) Explain the salient characteristics of job shop and batch production systems and state their applications also. 6
2. (a) Discuss how a change in a product design could produce a change in the design of a planning and control system? 6  
(b) Discuss systems approach to process planning and design. Explain the steps to follow for a successful process planning. 6
3. (a) What are seasonal variations? Why they are important for sales forecasting? 6  
(b) Why you should use aggregate planning in your business? Explain the guidelines for aggregate planning. 6
4. (a) What is capacity planning? How do you measure capacity? Explain the effect of cyclic and random variation on capacity planning. 6  
(b) Name various charts used in production planning and control. Explain the format and use of **any two** of these. 6
5. (a) Discuss the benefits of computerized techniques for layout planning. Explain the procedure of developing plant layout using CRAFT (Computerized Relative Allocation of Facilities Techniques) algorithm. 6  
(b) Define plant layout. Describe the group technology layout with a neat sketch and state its advantages and limitations. 6

6. (a) What do you mean by Manufacturing Resource Planning (MRP II)? Differentiate between MRP & MRP II. Explain the benefits offered by MRP II. 6
- (b) What are the steps in the project scheduling process? 6
7. (a) What is the Kanban process? What are the 6 rules of Kanban? Explain different types of Kanban. 6
- (b) What do you understand by Enterprise resource planning? Explain the various modules of ERP system. 6
8. (a) Explain the terms:
- i) Opportunity cost,
  - ii) Buffer stock,
  - iii) Risk level.
- State various reason which may lead to uncertainties element in inventory management. 6
- (b) Alpha industry estimates that it will sell 12000 units of its product for the forthcoming year. The ordering cost is Rs. 100 per order and the carrying cost per unit per year is 20% of the purchase price per unit. The purchase price per unit is Rs. 50. 6
- Find:**
- i) Economic Order quantity
  - ii) No. of orders per year
  - iii) Time between successive orders.

**NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.**