

**Roll No.**

**Total No. of Pages : 02**

**Total No. of Questions : 08**

**M.Tech. (Mechanical Engineering) (Manufacturing Engineering & Automation) (Sem.-3)**

## PRODUCTION PLANNING AND CONTROL

**Subject Code : MTME-213**

**M.Code : 92843**

**Date of Examination : 02-01-23**

**Time : 3 Hrs.**

**Max. Marks : 100**

**INSTRUCTIONS TO CANDIDATES :**

1. Attempt any FIVE questions out of EIGHT question.
2. Each question carry TWENTY marks.

1.
  - a) Discuss in detail the characteristics of various production systems. Also, enlist their advantages and applications.
  - b) Differentiate between production planning and production control. What are the objectives of production control?
2.
  - a) How do organizations plan the following aspects while planning and designing products?
    - (i) Product characteristics. (ii) Ergonomic aspects
  - b) What is the significance of Standardization, Simplification, and Specialization in product design and development? Discuss with appropriate examples.
3.
  - a) Write a short note on the followings:
    - (i) Types of process design (ii) Process planning aids.
  - b) Write down various Quantitative and Qualitative forecasting techniques. Briefly explain any one quantitative forecasting technique with a suitable example.
4.
  - a) What is aggregate Planning? Discuss the various methods of aggregate planning.
  - b) What is a master production schedule (MPS)? Elaborate main functions of a master production schedule.
5.
  - a) What is Capacity Planning? Elaborate in detail on the objectives and functions of Capacity Planning.
  - b) Define the term facility location. Discuss in detail the numerous factors affecting Facility Location.

6. a) What is meant by Scheduling? Discuss Loading and Scheduling as an essential part of production control.
- b) **Explain the followings:**
- (i) Sequencing of many jobs on a single machine.
  - (ii) What is Gantt Chart? Explain its use in Loading and Scheduling.
7. a) A company needs 2000 units per month. The cost of placing an order is Rs. 40. In addition to Rs. 0.50, the carrying costs are 10% per unit of average inventory per year. The purchase price is Rs. 10.00 per unit. Find the economic lot size to be ordered and the total minimum cost.
- b) (i) Does JIT bring in a reduction in the (a) Machinery and Manpower cost? Explain.
- (ii) What is the Kanban and Pull system? Discuss.
8. a) What is inventory control? Derive an expression for Economic Order Quantity (EOQ) for the quantity discount.
- b) **Briefly explain the followings:**
- (i) MRP-I & MRP-II.
  - (ii) Deterministic inventory models.

**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.**