

**INDUSTRIAL ENGINEERING**  
(Mechanical Engineering)

Time: 3 hours

Max. Marks: 70

**PART - A**

(Compulsory Question)

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- 1 Answer the following: (10 X 02 = 20 Marks)
- (a) Define: Industrial management.
  - (b) State the responsibilities of line manager.
  - (c) Mention the types of plant layout.
  - (d) List any four material handling equipments.
  - (e) Name the charts used in motion study.
  - (f) Define time study.
  - (g) Mention the various types of inventory.
  - (h) Define safety stock.
  - (i) State the assumptions made in control charts.
  - (j) Define the terms population and a sample.

**PART - B**

(Answer all five units, 5 X 10 = 50 Marks)

**UNIT - I**

- 2 Discuss about decentralization merits and demerits.

**OR**

- 3 "F.W Taylor proposed to modify the functions of foremen". Explain.

**UNIT - II**

- 4 Compare rural and urban sites with reference to selection of cement manufacturing industry.

**OR**

- 5 Discuss about the types of production with example.

**UNIT - III**

- 6 Discuss the procedure to establish standard time for completion of a job by stopwatch time study and explain various allowances given in time study.

**OR**

- 7 Explain about the process charts and flow diagrams.

**UNIT - IV**

- 8 An item is produced at the rate of 128 units per day. The annual demand is 6400 units. The setup cost for each production run is Rs.24 and inventory carrying cost is Rs.3 per unit per year. There are 250 working days for production each year. Develop an inventory policy for this item.

**OR**

- 9 For one of the brought out items, the following are the relevant data: Ordering cost = Rs.500, holding cost = 40%, cost per item = Rs.100, annual demand = 1000. The purchase manager placed five orders of equal quantity in one year, in order to avail the discount of 5% on the cost of items. Work out the gain or loss to the organization due to his ordering policy for this item.

**UNIT - V**

- 10 Describe the role of quality circle in leather manufacturing industry for quality improvement.

**OR**

- 11 Discuss the key steps of the process of getting registered to ISO 9000 certification.

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