

BT-5 / D-17

**INDUSTRIAL ENGINEERING
(COMMON WITH AUTO)**

Paper-ME-307 E

Time allowed : 3 hours]

[Maximum marks : 100

Note : Attempt only five questions, selecting one question from each unit. All questions carry equal marks.

Unit-I

- 1. (a) Industrial engineering has the sole objective of 'Productivity Improvement.' Discuss how? 10
- (b) What is 'Micro-motion Study'? Discuss various steps involved, advantages and applications of 'Micro-motion Study'. 10
- 2. (a) What is 'Performance Rating'? How is it used for estimating 'Standard Time' of a job? 10
- (b) Describe the technique of 'Work Sampling' with a suitable example. 10

Unit-II

- 3. (a) What is Gantt chart? Discuss its importance from 'Production Planning & Control' viewpoint. 10
- (b) Briefly discuss important stages involved in 'Product Development & Design'. 10
- 4. (a) Discuss and differentiate 'Line' and 'Line & Staff organizations with suitable sketches. 10

- (b) Discuss and differentiate 'Preplanning' and 'Planning' of production. 10

Unit-III

- 5. (a) What is 'Sales Forecasting'? Discuss the basic steps involved in a forecasting task. 10
- (b) What do you mean by the term 'Inventory Control Model'? How are these models classified? 10
- 6. (a) The following data gives the sales of a product for the last five years. Fit the straight line. Forecast the sales for the year 1996 and 1997. 12

Year	1991	1992	1993	1994	1995
Sales	35	56	79	80	40

- (b) Derive an expression for EOQ stating the conditions presumed. 8

Unit-IV

- 7. (a) Discuss the importance of 'Value Engineering' in different stages of life cycle of a product. 10
- (b) What are the characteristics of a good incentive plan? List different incentive plans. 10
- 8. (a) How Ergonomics, Working Environment and Productivity are related? Discuss. 10
- (b) Write short notes on 'Supply Chain Management' and 'Just-in-Time'. 10