

**Q 8133**

M.E. DEGREE EXAMINATION, MAY/JUNE 2006.

Second Semester

CAD/CAM

ED 1725 — INTEGRATED MANUFACTURING SYSTEMS

(Common to M.E. Engineering Design)

(Regulation 2005)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List the objectives of an integrated manufacturing system.
2. What is the need for linking manufacturing strategy and systems?
3. Define a part family.
4. Name any FOUR part coding system.
5. State the function of shop floor control.
6. Give any FOUR technologies of automatic identification system.
7. State the objective of a supervisory computer control.
8. Name any FOUR types of non-contact inspection methods.
9. What is meant by head changing FMS?
10. What is rapid prototyping?

PART B — (5 × 16 = 80 marks)

11. (i) Briefly explain the classifications of production systems with examples. (8)
- (ii) Write a note on the analysis of manufacturing operations showing an example of a simple shaft. (8)

12. (a) Explain the parts classification methods in Group Technology. (1)

Or

(b) Discuss the process of Computer-Aided Process Planning (CAPP), based on computer generated time standards. (16)

13. (a) (i) Describe the working of a Materials Requirement Planning system. (8)

(ii) Write a note on the automated data collection system. (8)

Or

(b) Explain the fundamentals of bar code technology of the automatic identification system. Use examples. (16)

14. (a) (i) Explain the various types of production monitoring system. (10)

(ii) Briefly explain the need and role of computers in quality control. (6)

Or

(b) Explain the types, features and applications of a Computerised Co-ordinate Measuring Machine (CCMM). (16)

15. (a) Discuss about the machine tools, materials handling systems and the computer control systems used in integrated manufacturing systems. (16)

Or

(b) (i) Write a critical note on the FMS workstations. (8)

(ii) With an application example, briefly explain the role of Artificial Intelligence and Expert System in computer integrated manufacturing. (8)