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Question Paper Code: 20823

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2018.

Seventh/Eighth Semester

Mechanical Engineering

ME 6703 — COMPUTER INTEGRATED MANUFACTURING SYSTEMS

(Common to : Mechanical and Automation Engineering/Robotics and Automation Engineering)

(Regulations 2013)

(Also common to : PTME 6703 – Computer Integrated Manufacturing Systems for B.E. (Part-Time) – Sixth Semester – Regulations – 2014)

Time: Three hours

Maximum: 100 marks

Answer ALL questions.

PART A — $(10 \times 2 = 20 \text{ marks})$

- 1. What are the major communication used in manufacturing Industry?
- 2. Define automation.
- 3. What are the prerequisites for process planning?
- 4. What are the applications of GT?
- 5. List out the methods for part family formation.
- 6. Name few of the CAPP system.
- 7. What are the Objectives of FMS?
- 8. List any two advantages and disadvantages of FMS implementation.
- 9. Why industrial robots are important?
- 10. What are the two types of Lead through Programming?

PART B — $(5 \times 13 = 65 \text{ marks})$

| 11. | (a) | Explain the basic elements an automated system. | (13) | |
|-----|-----|---|--------------|--|
| | | Or | | |
| | (b) | What are all the nature and role of the elements of CIM system? | (13) | |
| 12. | (a) | Write short notes on the following: | | |
| | | (i) Retrieval-type CAPP systems, | (7) | |
| | | (ii) Generative CAPP systems. | (6) | |
| | | Or | | |
| | (b) | What is MRP? Explain the inputs to MRP and various MRP outputs. list the various benefits of MRP. | Also (13) | |
| 13. | (a) | (i) Enumerate Role of process planning in CAD/CAM integration. | (3) | |
| | | (ii) Enumerate the role of GT in CAD/CAM integration. | (4) | |
| | | (iii) What are all the advantage and disadvantage of varient CAPP? | type (6) | |
| | | Or | | |
| | (b) | Explain D CLASS and OPTIZ coding systems with suitable examples | . (13) | |
| 14. | (a) | Discuss Automated guided vehicle system in detail. | (13) | |
| | (ω) | Or | | |
| | | | of o | |
| | (b) | Discuss the functions, application, advantage and disadvantage FMS. | (13) | |
| 15. | (a) | Explain in details Robot Anatomy and its related attributes. | (13) | |
| | | Or | | |
| | (b) | Explain in details about the types of robot part programming. | (13) | |
| | | PART C — $(1 \times 15 = 15 \text{ marks})$ | | |
| 16. | (a) | Explain Machine Cell design and layout with neat diagram. | (15) | |
| | +0 | Or | | |
| 3 | (b) | With respect to principles, tools and examples explain manufacturing and Just-in-time production systems. | Lean (15) | |