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19/11/13 FN

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**Question Paper Code : 81149**

M.E. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2013.

First Semester

CAD/CAM

CC 9211/CC 911/ 10222 CD 105 — COMPETITIVE MANUFACTURING SYSTEMS

(Common to M.E. Computer Integrated Manufacturing)

(Regulation 2009/2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Why are the manufacturing processes increasingly being automated?
2. What is the importance of design for design for disassembly?
3. What is a part family?
4. How is knowledge represented in knowledge based scheduling?
5. When is simulation preferred in manufacturing?
6. What are the contents of FMS database?
7. What are the different wastes minimised in lean manufacturing?
8. Can KAIZEN be practiced in all aspects of manufacturing?
9. What is the origin of JIT?
10. What are the types of kanbans?

PART B — (5 × 16 = 80 marks)

11. (a) (i) What are the basic elements of an automated system? (8)  
(ii) What are the effects of introducing CNC machines in production? (8)

Or

- (b) (i) What are the automated material handling systems used in modern production floors? (8)  
(ii) Discuss the applications and advantages of flexible fixtures. (8)

12. (a) (i) What are the objectives of group technology? (8)  
(ii) Discuss matrix formulation to group parts with a simple example. (8)

Or

- (b) (i) What are the functions performed by computer to control a real-time process? (8)  
(ii) What are the functions of a supervisory computer of an FMS? (8)
13. (a) Discuss the following functions performed by FMS software  
(i) Process planning (5)  
(ii) Tool Management (5)  
(iii) Machine Diagnostics. (6)

Or

- (b) What is the role of manufacturing Data System (MDS)? What are its interfaces? What feedback is given by MDS?
14. (a) (i) How is 'Customer Focus' actually practiced in modern organizations? (8)  
(ii) What are the benefits reported by organizations practicing '5 S' principles? (8)

Or

- (b) (i) What are the principles of JIT? How do they contribute to business success? (8)  
(ii) Discuss Hoshin planning system with an example. (8)
15. (a) (i) What are the effects of introducing 'small lot sizes' in JIT environment? (8)  
(ii) Why does JIT environment need 'flexible work force'? How does it contribute to the efficiency of production system? (8)

Or

- (b) (i) What is line flow strategy? What are the expected outcomes of such arrangements? (8)  
(ii) What are the implementation issues of JIT? How are they overcome? (8)