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**Question Paper Code: 47704**

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

Seventh Semester

Mechanical Engineering

14UME704- COMPUTER INTEGRATED MANUFACTURING

(Regulation 2014)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. The system environment in a mainframe computer consists of
  - (a) central processing
  - (b) storage devices
  - (c) printers and plotters
  - (d) both central processing and storage devices
2. The basic geometric building blocks provided in a CAD/CAM package are
  - (a) Points, lines, and circles
  - (b) Rectangles and squares
  - (c) Semi circles and squares
  - (d) Rectangles and semi circles
3. This process recognizes the inherent interrelationships between design and manufacturing
  - (a) Design for manufacture
  - (b) Design for manufacture and assembly
  - (c) Design for concurrent engineering
  - (d) Design for assembly
4. The linking of computer with a communication system is called
  - (a) networking
  - (b) pairing
  - (c) interlocking
  - (d) assembling

5. Which one does not relate to designing process layouts?
- (a) Minimizing transportation costs                      (b) Minimizing distance traveled  
(c) Focusing on closeness ratings                      (d) Equalizing times of work stations
6. Cellular manufacturing is also known as
- (a) Manufacturing technology                      (b) Production technology  
(c) Group technology                      (d) None of the above
7. The systems that accomplish the production planning, development of master schedule, capacity planning and materials requirement planning is called
- (a) Material flow control                      (b) Shop floor control  
(c) Control of process flow                      (d) Machine control
8. Which one is type of FMS?
- (a) Flexible machining group                      (b) Flexible material group  
(c) Flexible manufacturing group                      (d) Flexible process group
9. Cost of product failure, error prevention and appraisals can be classified under
- (a) stocking costs                      (b) stock-out costs  
(c) costs of quality                      (d) shrinkage costs
10. Computer will perform the data processing functions in
- (a) NC                      (b) CNC                      (c) DNC                      (d) None of the mentioned

PART - B (5 x 2 = 10 Marks)

11. Differentiate clockwise and counter clockwise rotation matrix.
12. Define OSI.
13. Define Group Technology (GT).
14. How FMS is classified based on the level of flexibility?
15. What is meant by material requirements planning?

PART - C (5 x 16 = 80 Marks)

16. (a) Explain CIM. What are the components of CIM? Discuss with neat diagram or flow chart. (16)

Or

- (b) What are commonly used geometrical models? Explain in detail. (16)
17. (a) Explain the nature and role of the elements of CIM system. (16)
- Or
- (b) Describe briefly Manufacturing Automation Protocol (MAP) and Technical and Office Protocol (TOP). (16)
- 18.(a) What are the three general methods for solving part families grouping? Describe in detail. (16)
- Or
- (b) (i) Why we need process planning in CAD/CAM? (6)
- (ii) What are the emergences of CAPP? Explain. (10)
19. (a) Write a brief notes on the factory data collection system in Shop floor. (16)
- Or
- (b) (i) Classify and discuss the five different categories of FMS layout. (8)
- (ii) Write the functions and applications of FMS.. (8)
20. (a) Classify the types of production manufacturing system and also write its advantages and limitations (16)
- Or
- (b) What are the scopes of MRP in manufacturing? Explain in detail. (16)

