Reg. No. : | | | | | | | | | | |

Question Paper Code: 47704

B.E. / B.Tech. DEGREE EXAMINATION, NOV 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. Scaling objects makes them

   (a) Bigger (b) Smaller (c) It only stretches them (d) Both Bigger and Smaller

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. In ring network communication the individual stations are connected in a

   (a) Discontinuous ring (b) Copper ring

   (c) Continuous ring (d) Polymer ring

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. CAPP integrates and optimizes system performance into

(a) The inter-organizational flow (b) The work flow

(c) The process flow (d) The inter-material flow

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. Technology that is peripheral to the actual creation of goods and services is sometimes called

(a) Indirect process technology (b) Direct process technology

(c) Focused process technology (d) Complementary process technology

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. Lean manufacturing is a (n):

(a) Fad (b) Method for reducing labour

(c) Way to improve customer value (d) Efficiency improvement technique

PART - B (5 x 2 = 10 Marks)

11. Mention the important applications of CIM in manufacturing control..

12. Define OSI.

13. Define Group Technology (GT).

14. List the different phases of Shop Floor Control

15. What is meant by material requirements planning?

PART - C (5 x 16 = 80 Marks)

16. (a) Briefly discusses the steps involved in designing and manufacturing a product (16)

Or

(b) What are commonly used geometrical models? Explain in detail. (16)

17. (a) Briefly discuss the major elements of CIM systems. (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) Elaborate the different stages in Group Technology (6)

(ii) Elaborate the benefits of CAPP over manual process (10)

19. (a) Classify and discuss the five different categories of FMS layout.. (16)

Or

(b) (i) Briefly discuss the elements of bar code readers. (8)

(ii) Explain the various techniques used in the Factory Data Collection System (8)

20. (a) (i) Write a short note on effective inventory management and inventory transactions (8)

(ii) Classify the types of production manufacturing system and also write its advantages and limitations. (8)

Or

(b) What are the scopes of MRP in manufacturing? Explain in detail. (16)