

**Sample Question Paper**  
**Scheme – I**

**22658**

**ProgrammeName : Mechanical Engineering**  
**Programme code : ME**  
**Semester : VI Sem**  
**Course Title : Computer Integrated Manufacturing**  
**Marks : 70**

**Time: 3Hrs.**

**Instructions:**

- (1) All questions are compulsory.
- (2) Illustrate your answers with neat sketches wherever necessary.
- (3) Figures to the right indicate full marks.
- (4) Assume suitable data if necessary.
- (5) Preferably, write the answers in sequential order.

**Q.1) Attempt any FIVE of the following. (10 Marks)**

- a) List the various elements of CAD/CAM product cycle.
- b) State the main purpose of drafting work bench in CAD software.
- c) State the role of ERP in business organization.
- d) Enlist different types of CIM networking and write characteristics of any one of them.
- e) Name the different elements of FMS and write characteristics of any one of them.
- f) Define the term “Automation” with suitable industrial example.
- g) Give two robot applications in automobile industry.

**Q.2) Attempt any THREE of the following. (12 Marks)**

- a) Differentiate between conventional product & CAD/CAM product cycle.
- b) Justify the current essence of computer applications in supply chain management
- c) Describe with neat sketch star type network topology.
- d) Classify different sensors used in robot.

**Q.3) Attempt any THREE of the following. (12 Marks)**

- a) Compare geometric modeling & finite element analysis tools used in CAD.
- b) Explain in brief major elements of FMS with neat sketch.
- c) Comment, use of Automation in industry will affect on employment.
- d) Distinguish between hydraulic and pneumatic actuators used in robot.

**Q.4) Attempt any THREE of the following. (12 Marks)**

- a) Describe the following elements of CIM
  - i) Computer Aided Design (CAD)
  - ii) Computer Aided Manufacturing Control (CAMC)
- b) Write the functions of Data Base Management System (DBMS) in CIM.
- c) Explain in brief the concept of Group Technology and Cellular manufacturing.
- d) Differentiate between Hard Automation & Soft Automation used in industry.

**Q.5) Attempt any THREE of the following. (12 Marks)**

- a) Draw diagram of conventional product cycle and show all elements on it.
- b) Prepare the procedure to construct cylinder and square pocket (axially) in it using geometric modeling tool.
- c) Use any one of strategies in automation with suitable example of it.
- d) Write advantages and limitations of CAD/CAM product cycle.

**Q.6) Attempt any TWO of the following. (12 Marks)**

- a. Classify different Computer aided business functions (CABF) and mention its purpose.
- b. Draw diagram of Bus and Ring network topology and label the parts.
- c. Draw the diagram of FMS and show all elements on it.
- d. Draw the diagram showing cylindrical configuration of robot, also show the work envelope of it.

**Sample Test Paper I**  
**Scheme – I**

**Programme Name : Mechanical Engineering**  
**Programme Code : ME**  
**Semester : Six**  
**Course : Computer Integrated Manufacturing**  
**Marks : 20**

**22658**

**Time: 1 hour**

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**Instructions:**All questions are compulsory

1. Illustrate your answers with neat sketches wherever necessary
2. Figures to the right indicate full marks
3. Assume suitable data if necessary
4. Preferably, write the answers in sequential order

**Q.1 Attempt any FOUR.**

**(8 Marks)**

- a) State disadvantages of conventional product cycle.
- b) Write the applications of Supply Chain Management (SCM) in business.
- c) List different types of network and write characteristics of any one of them.
- d) Write benefits of CIM in business organization.
- e) Differentiate between optimization and evaluation of engineering component.
- f) Explain object oriented data base management.

**Q.2 Attempt any TWO.**

**(12 Marks)**

- a) Draw CAD/CAM product cycle and show all elements of it.
- b) Prepare the procedure to construct square block and square pocket in it using geometric modeling tool.
- c) Draw diagram of star, bus and ring topology and label it.

**Sample Test Paper II**  
**Scheme – I**

**Programme Name : Mechanical Engineering**  
**Programme Code : ME**  
**Semester : Six**  
**Course : Computer Integrated Manufacturing**  
**Marks : 20**

22658

**Time: 1 hour**

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**Instructions:**All questions are compulsory

1. Illustrate your answers with neat sketches wherever necessary
2. Figures to the right indicate full marks
3. Assume suitable data if necessary
4. Preferably, write the answers in sequential order

**Q.1 Attempt any FOUR.**

**(8 Marks)**

- a) State the concept of Group Technology and its benefits.
- b) List different strategies in automation and write characteristics of any one.
- c) Differentiate fixed and flexible automation system.
- d) Explain linear joints in robot with neat sketch.
- e) Describe the purpose of end effectors used in robot.
- f) Write various applications of industrial robot.

**Q.2 Attempt any TWO.**

**(12Marks)**

- a) Draw diagram of in line layout type of FMS and write its main features.
- b) Classify different types of automations with its characteristics.
- c) Draw the diagram showing spherical configuration of robot, also show the work envelope of it.