

22658

21222

3 Hours / 70 Marks

Seat No.

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15 minutes extra for each hour

- Instructions :**
- (1) All Questions are *compulsory*.
  - (2) Answer each next main Question on a new page.
  - (3) Illustrate your answers with neat sketches wherever necessary.
  - (4) Figures to the right indicate full marks.
  - (5) Assume suitable data, if necessary.
  - (6) Use of Non-programmable Electronic Pocket Calculator is permissible.
  - (7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

**Marks**

**1. Attempt any FIVE of the following :**

**10**

- (a) List the various elements of CAD/CAM product cycle.
- (b) List various softwares used for geometric modeling.
- (c) Relate any one of the example in mechanical field with finite element analysis.
- (d) Write the functions of Data Base Management System (DBMS) in CIM.
- (e) Name the different elements of FMS and its characteristics.
- (f) Define the term "Automation".
- (g) Enlist any four components of robot.

**2. Attempt any THREE of the following :**

**12**

- (a) Write advantages and limitations of CAD/CAM Product cycle.
- (b) Apply concept of 'Supply Chain Management' for purchasing of mobile set as an example.
- (c) Distinguish between star and ring type network topology with neat sketch.
- (d) Enlist the different applications of Robot in industry and explain any one.

- 3. Attempt any THREE of the following :** **12**
- (a) Differentiate between the terms “Optimization” and “Evaluation” with suitable example for CAD.
  - (b) Classify the FMS based on layouts.
  - (c) Comment on use of automation in industry will affect the cost of product & performance of product.
  - (d) Classify different types of actuators used in robot.
- 4. Attempt any THREE of the following :** **12**
- (a) Describe in details, the following CIM elements :
    - (i) CAD
    - (ii) CAPP
  - (b) Compare network softwares and network hardware with suitable example used in networking.
  - (c) Explain in brief concept of “Group Technology” with its advantages.
  - (d) Differentiate between “Fixed Automation” and “Programmable Automation”.
- 5. Attempt any THREE of the following :** **12**
- (a) Draw block diagram of CAD/CAM product cycle and label the various areas.
  - (b) Explain the variant and generative methods of CAPP.
  - (c) Use “Multiple Operation” as the strategies in automation giving suitable example.
  - (d) Explain any one type of gripper used in robot with neat sketch.
- 6. Attempt any TWO of the following :** **12**
- (a) Classify different computer aided business functions (CABF) and state its purposes (applications).
  - (b) Design “Bus Type” network topology networking for finance department and show by sketch the layout of it.
  - (c) Draw rotary type of layout for flashlight packaging in company and label the different stations.
  - (d) Draw the diagram showing polar (Spherical) configuration of robot, also show the work envelope of it.
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