

22658

24225

3 Hours / 70 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
  - (2) Answer each next main Question on a new page.
  - (3) Figures to the right indicate full marks.
  - (4) Assume suitable data, if necessary.
  - (5) Use of Non-programmable Electronic Pocket Calculator is permissible.
  - (6) 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) Define the term CIM.
- (b) Define Concurrent engineering.
- (c) Enlist two applications of ERP.
- (d) Enlist types of network topologies.
- (e) Enlist different strategies of automation system.
- (f) Enlist various types of automation.
- (g) Enlist various degrees of freedom with respect to a robot.

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

**12**

- (a) State advantages and limitations of product cycle.
- (b) Compare between CAD and CAM.
- (c) Explain with neat sketch BUS topology.
- (d) Explain various elements of a robotic system with a neat sketch.



- 3. Attempt any THREE of the following : 12**
- (a) Write advantages & disadvantages of Group technology.
  - (b) Explain major elements of FMS.
  - (c) Compare between programmable and flexible automation.
  - (d) Explain various robotic joints.
- 4. Attempt any THREE of the following : 12**
- (a) Enlist advantages and limitations of CIM.
  - (b) Explain relational data base management architecture with a block diagram.
  - (c) Explain various layouts used in FMS.
  - (d) Explain : (i) Integration of operations (ii) Online inspection with respect to automation.
- 5. Attempt any THREE of the following : 12**
- (a) Differentiate between Automation & Mechanisation. (Any 4 points)
  - (b) Explain PLC elements with a neat sketch.
  - (c) Write advantages of PLC system.
  - (d) Classify actuators and explain in brief.
- 6. Attempt any TWO of the following : 12**
- (a) Describe role of supply chain management in business with suitable example.
  - (b) Draw the diagram showing rectangular configuration of a robot. What is work envelope ?
  - (c) Draw point to point and multidrop network wirings.
  - (d) Explain CAD/CAM-CMM interface with a neat sketch.
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