12425

3 Hours / 70 Marks Seat No.

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) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE : **10**

(a) Name the two approaches of CAPP system.

(b) State the names of two Softwares of CAE.

(c) State the role of CRM (Customer Relationship Management) in business organization.

(d) Enlist the different types of CIM networking.

(e) Define Group Technology.

(f) Define Automation. State its types.

(g) Give two robot applications in automotive industry.

2. Attempt any THREE : **12**

(a) Explain Traditional product cycle and show all elements on it.

(b) What is conventional sequential design process & how this process is modified when we use CAD process ?

(c) Describe with neat sketch Bus Topology.

(d) What are the basis elements of Industrial robot ?

3. **Attempt any THREE :** 12

   (a) Compare geometric modeling & finite element analysis tools used in CAD.

   (b) Explain loop type FMS layout.

   (c) State and explain various reasons for automating production.

   (d) What are the uses of sensors in robotics ?

4. **Attempt any THREE :** 12

   (a) What is the role of CAD/CAM/CIM in manufacturing industry ?

   (b) Explain object oriented data base management.

   (c) Explain important factors to be considered in planning of fully automated FMS.

   (d) Differentiate between Automation & Mechanisation. (4 points)

5. **Attempt any THREE :** 12

   (a) What are the current production needs of an industry ?

   (b) Prepare the procedure to construct a rectangular block of 100×80 mm having centrally holed dia ϕ 8 mm by using geometric modeling tool.

   (c) What are different types of automated flow lines, explain In-line inspection strategy of automation.

   (d) Describe the purpose of end-effectors used in robots.

6. **Attempt any TWO :** 12

   (a) What is the role of PLM in business ? State its benefits & applications.

   (b) Draw the diagram of Star and Ring topology & label the parts.

   (c) Explain the various FMS Layout giving their typical application areas.

   (d) Draw the diagram showing Cartesian configuration of robot and show work volume for it.

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