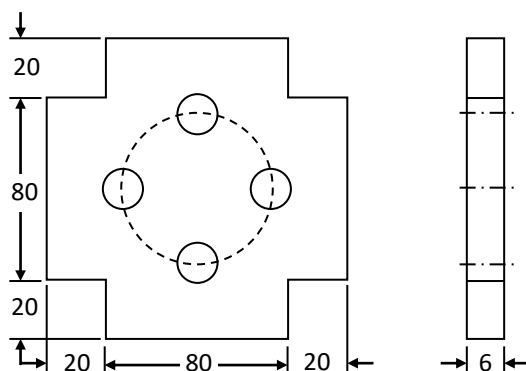


August 2021

**CAD-CAM & AUTOMATION***Time Allowed: 1 Hour**Full Marks: 35***Answer to Question No. 1 is compulsory and Answer any two questions from the rest.**

1. A. Choose the correct answer (any five): 5x2
- i) RAM stands for – (a) Read only memory (b) Random access memory (c) Restricted access memory (d) All of above.
  - ii) In the following geometric modelling technique which is not a 2D modelling (a) Drafting (b) Wireframe modelling (c) solid modelling (d) Line modelling.
  - iii) Co-ordinate systems of robot (a) Cartesian (b) Polar (c) Spherical (d) All of above.
  - iv) FMS stands for (a) Full material system (b) Flexible manufacturing system (c) Flexible material system (d) Full manufacturing system.
  - v) DNC stands for (a) Dedicated numerical control (b) Direct numerical control (c) Distance numerical control (d) None of above.
  - vi) Printer is a (a) Input device (b) Output device (c) Storage device (d) None of the above.
  - vii) CAM software is used in (a) NC machine tool (b) CNC machine tool (c) Conventional machine tool (d) All of above.
- B. Answer the following questions (any five): 5x2
- i) Give classification of surfaces.
  - ii) Explain Bezier curve with neat fig.
  - iii) Explain B-splines curve with neat fig.
  - iv) Draw various solid modelling primitives.
  - v) What are different types of memories used in computing system?
  - vi) Explain method of CSG modelling.
  - vii) Draw block diagram of computer assistance for design cycle.
  - viii) What is requirement of geometric modelling?
2. Prepare manual part program for machining the component with 4 holes of 10 mm diameter on 60 mm p.c.d. as shown in figure below using ISO code. Do not use G41 or G42. 7.5



3. Define CAD, CAM and CIM. Why they are considered as important in manufacturing? 4+3.5
4. What do you understand by Geometric molding? Classify the type of Geometric molding. 4+3.5
5. What is point to point control system and continuous numerical control system? Explain. 4+3.5
6. What is CNC Machine? What is the advantage and disadvantage of CNC machine? 2+5.5
7. How an industrial robot can be defined? Explain some of the desirable and useful qualities of robot. 2+5.5
8. What is FMS? What is its application? 3.5+4
9. What is Automation? How it helps in manufacturing? 3.5+4
10. a) Write short note on APT.  
 b) Prepare manual part programming for turning the component shown in figure below on CNC lathe using ISO code. Assume the tool tip radius is 2 mm. 3.5+4

