

B.Voc Production-Tool and Die Manufacturing**Subject: CAD-I****Subject Code: ME-601****Semester: Third****Session: - September 2022****Theory (External): 35 Marks****Time: 03 Hours**

Instructions to the Students

1. This Question paper consists of two Sections. All sections are compulsory.
2. Section A comprises 10 questions of objective type in nature. All questions are compulsory. Each question carries 01 marks.
3. Section B comprises 8 essay type questions out of which students need to do any 5. Each question carries 05 marks.
4. Read the questions carefully and write the answers in the answer sheets provided.
5. Do not write anything on the question paper.
6. Wherever necessary, the diagram drawn should be neat and properly labeled

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SECTION –A (SHORT/OBJECTIVE TYPE QUESTIONS)
(10x 1= 10 Marks)

- A. Enlist the various graphics input devices.
- B. Name the coordinate systems used in CAD graphics transformations.
- C. Write a parametric equation representing a B-spline curve.
- D. Differentiate between solid and wireframe modeling.
- E. Write the basic governing equations for scaling and translation functions.
- F. What do you mean by the synthetic curves?
- G. What are the uses of bezier and b-spline surface functions in any CAD software?
- H. What is a hermite curve and show schematically?
- I. Draw the second order continuity curve.
- J. Differentiate between boundary and sweep representations in solid modeling.

SECTION –B (ESSAY TYPE QUESTIONS)
(5x5=25 Marks)

1. Describe the various typical output devices used in a CAD system.
2. Compare Bezier cubic and Hermite cubic curves and derive an empirical relationship between the end tangent and control points.
3. Enlist the functions of coordinate systems in CAD software. Also, describe a model coordinate system.
4. Describe any two commands used for 2D and 3D graphic transformations in CAD software.
5. What is the need of surface modeling? Explain bezier surface with the aid of schematic diagram and modeling equations.
6. Explain any five solid modeling commands used in typical CAD software.
7. Differentiate between world coordinate system (WCS) and user coordinate system (UCS).
8. A triangle with coordinates as A(10, 10), B(50, 50) and C(100, 10) is to be rotated about point A(10, 10) by 45° clockwise. Find out the transformed coordinates.

===END OF PAPER===