

(Compulsory Question)

9. Answer all the following :  $2 \times 10 = 20$
- (i) What is the difference between Numerical Control and Adaptive Control ?
  - (ii) What are the important properties for curve designing ?
  - (iii) Differentiate between Translation and Planning.
  - (iv) Explain 3D transformation matrix for rotation.
  - (v) What are the limitations of CAD in design ?
  - (vi) Distinguish between G and M function.
  - (vii) What are the various display technologies used in CAD ?
  - (viii) State the different types of modeling in mechanical engineering field.
  - (ix) What do you understand by analytic curves and synthetic curves ?
  - (x) What are the primitive elements in CAD ?

Roll No. ....

Total Pages : 04

**July-22-00337**

**B. Tech. EXAMINATION, 2022**

Semester VI (CBCS)

COMPUTER AIDED DESIGN AND  
MANUFACTURING (CAD/CAM)

ME-601

*Time : 3 Hours*

*Maximum Marks : 60*

---

*The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.*

---

**Note :** Attempt *Five* questions in all, selecting *one* question from each Sections A, B, C and D. Q. No. 9 is compulsory.

**Section A**

1. (a) What are the various display technologies used in CAD ? What are the application areas of CAD ?

5

(b) Distinguish between 2D and 3D wire frame models. 5

2. (a) What is a wireframe model and discuss hidden line removal concept in it ? 5

(b) What is the different modeling technique in CAD ? Explain the various requirements from geometric model. 5

### Section B

3. (a) Enumerate the difference between B spline and Bezier curves. Explain boundary representation method with suitable examples. 5

(b) Find state the properties of Hermite Cubic Splines. How these curves are differ from Bezier curves ? 5

4. (a) Define Bezeir surface. Explain various characteristics of Bezier surface. 5

(b) Explain the following transformation in 2D and 3D concept of computer graphics with an example : 5

(i) Translation

(ii) Scaling

(iii) Rotation.

### Section C

5. (a) Discuss the different types of Numerical Control Techniques and explain their significance. 5

(b) What are the various types of sweeps used in solid modeling ? Explain with example. 5

6. (a) Elaborate concept of computer assisted part programming. 5

(b) Why the solid modelling is necessary ? What are the merits and demerits of surface modelling ? 5

### Section D

7. (a) Differentiate between retrieval type and generative type CAPP systems. List down the merits and de-merits of each type. 5

(b) What is cellular manufacturing ? Describe the various types of GT machine cell. 5

8. What is a part family in Group Technology ? Name three parts classification and coding systems commonly used in GT. Explain any *one* of them in detail with the help of suitable examples. 10