

Paper ID [PE505]

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M.Tech. (Sem. - 1st)**COMPUTER AIDED DESIGN AND MANUFACTURING (PE - 505)****Time : 03 Hours****Maximum Marks : 100****Instruction to Candidates:**

- 1) Attempt any **Five** questions.
- 2) All questions carry equal marks.

Q1) With the help of mathematical model, explain the difference between CAD/CAM and Automation.

Q2) (a) What is the importance of standards in CAD/CAM?

(b) How Initial Graphics Exchange Specification (IGES) is differing from Graphical Kernel System (GKS)?

Q3) (a) Compare 2-dimensional and 3-dimensional wire frame models.

(b) Describe the importance of curve and surface modeling in computer aided graphics and design.

Q4) Describe briefly the following methods of surface modeling with two application examples:

- (a) Revsurf
- (b) Tabcyl

Q5) What is meant by sweep? Discuss in detail the various types of sweep techniques available for 3D geometric construction.

Q6) A scaling factor of 2 is applied in Y direction and while no scaling is applied in X direction to the line whose end points are at coordinates (1, 3) and (3, 6). The line is to be rotated subsequently through 30° in the counter clockwise direction. Determine the necessary transformation matrix for the operation and the new coordinates of the end points.

Q7) Differentiate between numeric control (NC), computer numerical control (CNC) and direct numerical control (DNC) systems of CAM.

Q8) Write short note on any two of the following:

- (a) Fixed and floating zero
- (b) Assembly and Tolerancing
- (c) Operating system

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