

[Total No. of Questions - 8] [Total No. of Printed Pages - 2]  
(2123)

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**M. Tech 1st Semester Examination**  
**Computer Aided Design and Manufacturing**

PE-105

Time : 3 Hours

Max. Marks : 100

*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 :** This question paper carries eight questions. Attempt any five questions. All questions carry equal marks.

1. Explain the product life cycle and how it is influenced by CAD/CAM tool? (20)
2. State the function of mass storage devices. Classify the various mass storage devices used in CAD/CAM. Also differentiate between sequential access storage and direct access storage. (20)
3. Differentiate between:
  - (a) Windowing and clipping.
  - (b) Scaling, Translation and Rotation
  - (c) Hidden line removal and shading (20)
4. Explain the various methods used by CAD/CAM systems to create the following wire-frame entities:
  - (a) Point by incremental Cartesian co-ordinates.
  - (b) Line perpendicular to an existing line.
  - (c) Circle from a point and radius.
  - (d) Ellipse from centre along with major and minor axis. (20)

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5. Distinguish clearly between NC, CNC, and DNC. Also give the area of application, its limitations and advantages. (20)
6. State the working principle of analog graphics input devices. Also state the working of Digitiser, tablet and Joy stick. (20)
7. Explain the following:
- (a) Surface of revolution
  - (b) Ruled surface
  - (c) Tabulated Cylinder
  - (d) Bezier Surface
  - (e) B-Spline Surface. (20)
8. Give mathematical representation of following surfaces:
- (a) plane surface,
  - (b) ruled surface,
  - (c) Bezier surfaces. (20)