M.Tech.

COMPUTER AIDED DESIGN METHODS

SUBJECT CODE: CE-507

Paper ID: [E0854]

[Note: Please fill subject code and paper ID on OMR]

Time: 03 Hours
Maximum Marks: 100

Instruction to Candidates:

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

Q1) (a) What are the rules designed for implementing a graphics package.
     (b) Explain Characteristics of a Graphics Package.

Q2) Why we apply hidden surface algorithm? Explain Depth-Buffer algorithm with its limitations. On which approach does this algorithm work?

Q3) (a) Derive two dimensional transformation matrices for rotation, scaling and translation.
     (b) Develop the transformation for finding the reflection of a point with respect to the line \( ax + by + c = 0 \).

Q4) (a) What do you mean by raster scan systems? Explain the working of a color CRT monitors.
     (b) Explain Characteristics of Raster Graphics Systems.

Q5) (a) Derive 3D transmissions for translation, scaling and rotation.
     (b) Explain the concept of Homogeneous coordinates.

Q6) (a) Explain the operating characteristics of graphic screen digitizer.
     (b) List and explain different applications of computer graphics.

Q7) (a) What do you understand by CAD? Discuss its usage and application in detail?
     (b) Write a computer program for design detailing of RCC slab?

Q8) Explain the following:
     (a) Matrix methods for structural analysis.
     (b) Solution of equilibrium equations.