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Total No. of Pages : 02

Total No. of Questions : 09

**M.Sc.(Computer Science) (2016 & Onwards) (Sem.–3)**

**INTERACTIVE COMPUTER GRAPHICS**

**Subject Code : MSC-302**

**M.Code : 72104**

**Date of Examination : 14-12-22**

**Time : 3 Hrs.**

**Max. Marks : 60**

**INSTRUCTIONS TO CANDIDATES :**

1. **SECTIONS-A, B, C & D** contains **TWO** questions each carrying **TEN** marks each and students has to attempt any **ONE** question from each **SECTION**.
2. **SECTION-E** is **COMPULSORY** consisting of **TEN** questions carrying **TWENTY** marks in all.

**SECTION-A**

1. What is difference between Random scan display and Raster scan display? Elaborate with the help of block diagram of CRT.
2. Discuss about the various interactive control devices and output devices used in computer graphics.

**SECTION-B**

3. Explain and write down transformation matrix for two dimensional rotation, translation and scaling. Elaborate with suitable example.
4. How do clipping-help-in-viewing? Explain Cohen-Sutherland line clipping algorithm in detail.

**SECTION-C**

5. What is a Projection? List and explain various types of projections.
6. **Briefly explain the following concepts:**
  - a) 3-D Viewing
  - b) 3-D Clipping.

### SECTION-D

7. What is the need for removal of hidden lines and surfaces? What are the different methods used for removal of hidden surfaces? Explain any one algorithm.
8.
  - a) What do you mean by illumination model?
  - b) What are the different types of shading in computer graphics?

### SECTION-E

9. **Attempt the following :**
  - a) Mention various applications of computer graphics.
  - b) List various output devices used in computer graphics.
  - c) Why Bresenham line drawing algorithm is better than DDA?
  - d) How do you apply symmetry concept while drawing circle?
  - e) What is a window and a view port?
  - f) What is the difference between 2D and 3D graphics?
  - g) What is vanishing point in perspective projection?
  - h) How does the painter's algorithm differ from Z buffering?
  - i) What do you mean by Rendering?
  - j) Define Reflection.

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**