

**INTERACTIVE COMPUTER GRAPHICS**

**Paper-CSE-404**

*Time allowed : 3 hours]*

*[Maximum marks : 100*

*Note : Attempt five questions in all, selecting at least one question from each unit. All questions carry equal marks.*

**Unit-1**

1. (a) What do you mean by display processors ? Explain the concepts of character generator ? 10
- (b) Compare and contrast the working of raster scan and random scan display systems. 10
2. Discuss the functioning of monochrome and color display techniques ? 20

**Unit-2**

3. (a) Explain the DDA line drawing algorithm. What are the advantages and disadvantages of DDA algorithm. Implement the DDA algorithm to draw a line from (0,0) to (6,6). 10
- (b) What do you mean by 2-D transformation ? Explain translation, shearing and rotation in 2-D transformation. 10
4. (a) Explain midpoint circle drawing algorithm, plot a circle by using midpoint algorithm whose radius is 10 units. 10
- (b) Explain screen co-ordinates and user co-ordinates. 10

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### Unit-3

5. (a) Write short note on mouse programming and interactive graphical techniques. 10
- (b) Explain zooming and clipping positioning techniques. 10
6. Explain different pointing and positioning devices. 20

### Unit-4

7. Discuss 3-D transformations and explain different 3-D geometric transformations. 20
8. (a) Explain the concept of projection. What do you mean by parallel projection? 10
- (b) Give brief description of hidden lines and surfaces. Discuss any one algorithm used for removal of hidden lines and surfaces. 10