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BT-8/D-13   **8802**

INTERACTIVE COMPUTER GRAPHICS

CSE-404

Time : Three Hours]   [Maximum Marks : 100

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

Unit I

1. (a)   Describe working principle of DVST.

    (b)   Explain the construction and working of Raster Scan Display.

2. Explain the following :

    (a)   Colour Printer

    (b)   High Speed Drawing.

Unit II

3. (a)   Distinguish between screen coordinate and user coordinate.

    (b)   What are Homogeneous Coordinates ? Explain their uses.

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4. (a) Describe the 2-D transformation matrix for rotation about arbitrary point.

(b) Write down and explain the Bresenham's circle drawing algorithm.

Unit III

5. (a) Explain window, view port and window-to-view port transformation.

(b) Differentiate between pointing and positioning devices ? Explain the working of light pen.

6. Explain the following techniques used in interactive graphics :

(a) Panning

(b) Scissoring.

Unit IV

7. (a) Explain the concept of parallel projections in 3D.

(b) Explain the Painter's algorithm for the elimination of Hidden surfaces.

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8. (a) Explain the 3-d transformation for translation, rotation, scaling ? Write the matrix representation for these transformations. **10**

(b) Write and explain shading algorithm. **10**