[Total No. of Questions - 9] [Total No. of Printed Pages - 2]
(2066)

16056(J) J-16

B. Tech 4th Semester Examination

Computer Graphics (NS)

CS-224

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 : Attempt one question each from Section A, B, C, and D. Section E is compulsory.

SECTION - A

1. What is Computer Graphics? What are various applications of computer graphics? Explain the various output devices used in Computer Graphics. (20)

2. What is pixel? Explain how images are represented and stored on computer? Explain Raster Scan Systems. (20)

SECTION - B

3. What is scan conversion? Give Comparison of different line drawing algorithms in computer graphics. Give Bresenham's line drawing algorithm with its implementation in C language. (20)

4. Differentiate between concave and convex polygon. Explain Winding number method used in area fill. Develop a flood-fill algorithm to fill the interior of any specified area. (20)

SECTION - C

5. What is Clipping? Explain two dimensional viewing transformation pipeline with the help of suitable example. Give only the subroutine for line clipping using midpoint subdivision algorithm. Give steps for line. (20)

[P.T.O.]

6 (a) Give different types of curve generations. Describe B-Spline method for curve generation. (10)

(b) Explain different types of Projection used in computer graphics. (10)

SECTION - D

7. (a) What is Computer Animation? Explain the basic animation techniques used in computer graphics. (10)

(b) Explain Constant-Intensity Shading. (10)

8. (a) Give Painters Algorithm. Also explain its advantages and disadvantages. (10)

(b) What are different color model used in computer graphics? Explain most commonly used color model used. (10)

SECTION - E

9. (a) How category of a line is find out for its visibility using region codes in Cohen - Sutherland line clipping algorithm?

(b) Describe any one graphics standard.

(c) Find out the final co-ordinates of a figure bounded by the co-ordinates (2,2), (5,6), (7,9) and (12,5) when scaled by two units in X direction and three unit in Y direction.

(d) Write C code for drawing circle using mid-point circle generation algorithm.

(e) Explain text clipping. (5×4=20)