Seat No.	

T.E. (Computer Science & Engineering) (Semester - V)
Examination, April - 2019
COMPUTER GRAPHICS
Sub. Code : 66293

Day and Date :Thursday, 25 - 04 - 2019   **Total Marks : 50**
Time : 02.30 p.m. to 04.30 p.m.

Instructions :
1) Q. No. 3 and Q. No. 6 are compulsory. Attempt any one from Q. No. 1 and Q. No.2 and any one from Q. No.4 and Q. No.5.
2) Figures to the right indicate full marks.
3) Assume suitable data if necessary.

Q1) a) Derive the transformation matrix for reflecting the object through an arbitrary plane in a three dimensional space. **[6]**

    b) What is scan conversion. Explain real time scan conversion using sorted active edge list method. **[6]**

Q2) a) Explain Bresenham's incremental circle generation algorithm for first quadrant. **[6]**

    b) Describe the process of window to viewport transformation. **[6]**

Q3) a) Consider the clipping window $X_L = -1$, $X_R = +1$, $Y_B = -1$ and $Y_T = +1$ and the line From $P_1(-3/2,-1)$ to $P_2(3/2,2)$. Clip the line using Sutherland cohen subdivison algorithm. **[7]**

    b) Explain Orthographic projections in detail. **[6]**

Q4) a) Explain the Warnock algorithm with example. **[6]**

    b) Explain the methods for controlling motion in computer animation. **[6]**

Q5) a) What is halftoning? Explain halftone approximation method for a 3 by 3 pixel grid on a bi-level system. **[6]**

    b) Explain Gouraud Shading method for rendering a polygon surface. **[6]**

Q6) a) Given B0[1,1], B1[2, 3], B2[4 ,3], B3[3, 1] the vertices of a Bezier polygon, determine points on the curve for t = 0, 0.35, 0.85,1. **[7]**

    b) What is Animation sequence? Explain its four components. **[6]**

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