

Paper Code & Roll No. to be filled in your Answer Book

Roll No.

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BCA V Sem.

Odd Semester Examination-2015

COMPUTER GRAPHICS

Time : 3 Hours]

[Maximum Marks : 70

Unit 1

(2×7=14)

Attempt any two questions:

- Q1. What do you mean by computer graphics? Mention any five applications of computer graphics. Write Short note on Video controller and frame buffer. Explain their working with the help of diagram.
- Q2. Compare and contrast Raster Scan & Random Scan display devices.
- Q3. Derive Bresenham's line generation algorithm for $|M| < 1$. Also explain why it is better than DDA algorithm?

Unit 2

(2×7=14)

Attempt any two questions:

- Q4. Find out the final co-ordinates of a figure bounded by the co-ordinates (1,1), (3,4), (5,7) and (10,3) when scaled by two units in X direction and three unit in Y direction using fix point (1,1).
- Q5. Distinguish between widow and viewport. Also explain their co-ordinate transformation.

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- Q6. Give Sutherland-Hodgeman polygon clipping algorithm and explain with the help of example. What is the drawback of this algorithm?

Unit 3

Attempt any two questions: (2×7=14)

- Q7. Consider the line L and triangle ABC. The equation of line is $y=1/2(x+4)$ and A(2,4), B(4,6), C(2,6). Reflect the triangle about L.
- Q8. Apply Liang barsky line clipping algorithm for calculating the saved portion of line from (2,7) to (8,12) in a window ($x_{wmin} = y_{wmin} = 5$ and $x_{wmax} = y_{wmax} = 10$).
- Q9. Explain window to viewport coordinate transformation.

Unit 4

Attempt any two questions: (2×7=14)

- Q10. Explain 3-D viewing in detail
- Q11. Derive perspective projection Transformation matrix
- Q12. Write short note on
- i.) 3-D clipping
 - ii.) Parallel projection

Unit 5

Attempt any two questions: (2×7=14)

- Q13. Set up equation for Bezier curve and roughly trace it for three control points.(1,1) (2,2) (3,1).
- Q14. Explain Phong model and warn model.
- Q15. Write down the properties of B-spline curve. Also give advantage of B-spline curve over Bezier curve.

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