

MAY 2015

P/ID 16171/PIE12

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Time : Three hours

Maximum : 100 marks

PART A — ( $6 \times 5 = 30$  marks)

Answer any SIX questions each in 200 words.

1. What is refresh buffer? Identify the contents and organization of the refresh buffer for the case of raster display and vector display.
2. It is desired to draw a line starting at  $A(3,6)$  and ending at  $B(6,2)$  on a graphics monitor. Use generalized Bresenham's algorithm to determine the pixels that would be put on.
3. What is the homogeneous equation of a line? Write the formula for the intersection of two lines specified in homogeneous form. What is the homogeneous equation of a plane?
4. Write short notes on Text clipping.
5. What are the conditions to clip a point within a window? Give one example.
6. Write necessary steps in order to describe a method of reflection of a three dimensional figure about an arbitrary plane in terms of matrix operations.

7. Write the pseudocode for generating Bezier curve.
8. Discuss with suitable example how the control points affect the overall shape of a curve.

PART B — (7 × 10 = 70 marks)

Answer any SEVEN questions each in 500 words.

9. Explain in detail about Ellipse generating algorithms.
10. Distinguish between Raster scan systems and Random scan systems.
11. Describe the basic concepts for composite transformation.
12. Discuss about parallel projection with example.
13. Illustrate Hidden surface algorithm with suitable example.
14. Write short notes on three dimensional object representation.
15. Mention an interactive picture construction methods in 2-D.
16. How will you implement the three dimensional operations? Explain in detail.
17. Write the procedure for representing splines in 3-D.