

Roll No.

CS-504(O)

B. E. (Fifth Semester) EXAMINATION Dec., 2009

(Old Scheme)

(Computer Science & Engg. Branch)

COMPUTER GRAPHICS AND MULTIMEDIA

[CS-504(O)]

Time : Three Hours

Maximum Marks : 100

Minimum Pass Marks : 35

- Note :** (i) Attempt *one* question from each Unit.
(ii) All questions carry equal marks.

Unit—I

1. (a) Explain the working of raster refresh display tube.
How different gray levels are incorporated in it ? 10
(b) Explain the following terms : 10
(i) Refreshing
(ii) Flickring
(iii) Interlacing

Or

2. (a) Describe the working principles of digitisers and image
scanners. 10
(b) Explain rubber band technique and dragging with
examples. 10

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Unit – II

3. (a) Write Bresenham's scan converting line drawing algorithm. Compare it with DDA line drawing algorithm. 10
- (b) What is aliasing and antialiasing ? Explain with suitable example. Give *one* method of antialiasing. 10

Or

4. (a) What do you mean by B-splines and Bezier curves ? Discuss the properties of Bezier and B-spline curves. 10
- (b) Write midpoint algorithm for scan converting a circle. 10

Unit – III

5. (a) What is meant by geometric transformation ? Discuss various transformations with suitable examples. 10
- (b) Find out the co-ordinates of a figure bounded by (0, 0), (1, 5), (6, 3), ($-3, -4$) when reflected along the line whose equation is $y = 2x + 4$ and sheared by 2 units in x -direction and 2 units in y -direction. 10

Or

6. (a) What do you mean by projection ? Discuss different types of projections. 10
- (b) Write an algorithm to display a cube on the screen and rotate it through any angle. The distortion of the image should be minimum before and after rotation. 10

Unit – IV

7. (a) Explain midpoint line clipping algorithm. Compare it with Cohen-Sutherland algorithm. 10
- (b) Use the Cohen-Sutherland outcode algorithm to clip two lines $p_1(70, 20) - p_2(100, 10)$ against a window $a(50, 10), c(80, 40)$, 10

Or

8. (a) Describe the phongs specular reflection model with Fresnel's law of reflection. 10
(b) What are various colour models ? Explain about each one of them. 10

Unit – V

9. (a) Discuss in brief about multimedia hardware. 10
(b) Write in brief about the following : 10
(i) RTF
(ii) TIFF

Or

10. (a) Discuss about various authoring tools. 10
(b) Describe the architecture of multimedia system. 10