

1079
B.E. (Computer Science and Engineering)
Fifth Semester
CS-502: Computer Graphics

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

- I. Attempt the following:-
- Why we use 3×3 coordinate system for general transformations? Justify your answer.
 - Write shear transformation in 3-D coordinate system.
 - Discuss the resolution and refresh rate.
 - What are the RGB and true color monitors?
 - What is the importance of spline curves?

(5x2)

UNIT - I

- II. a) Perform a 45 degree rotation of a triangle A (0, 0), B(1,1), C(1,2) About origin and about pivot point P(-1, -1) (2x2½)
- b) Differentiate among LCD and CRT monitors based on different parameters. (5)
- III. a) Explain in detail the line clipping algorithm with suitable example for each case.
- b) What is the significance of window to viewport transformation? (7,3)
- IV. a) Write algorithm for midpoint circle generation.
- b) Consider the axis of ellipse as 8 and 6. Give pixel locations (xi, yi) in the first quadrant of the circle covering both regions 1 and 2 and create table as:

i	pi	xi+1, yi+1
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(5,5)

UNIT - II

- V. a) What is the parallel projection? Give the transformation equation for orthographic and oblique parallel projection. (5,5)
- b) Explain the rotation transformation in 3-D coordinate system.

P.T.O.

(2)

VI. Write note on the following:-

- a) Beizer curve and their properties
- b) B-spline curves

(10)

VII. a) Differentiate among Z-buffer and A- buffer. Explain their terminology in steps.

b) Explain the basic steps used in computer animation

(6,4)

x-x-x