

Printed Pages – 4

Roll No. :

C022531(022)

B. Tech. (Fifth Semester) Examination, Nov.-Dec. 2021

(CSE Branch)

COMPUTER GRAPHICS

Time Allowed : Three hours

Maximum Marks : 100

Minimum Pass Marks : 35

Note : Attempt all questions. Attempt any two parts from (a), (b) and (c) of each unit. Each part carries 10 marks.

Unit-I

1. (a) Explain DDA algorithm for drawing line. Also calculate all the point in the path of the line using P1 (1, 1) and P2 (10, 7) respectively. 10

[2]

- (b) Explain storage tube graphics display in detail with its advantages and disadvantages. 10
- (c) Explain Boundary fill algorithm and Flood fill algorithm with example. Also differentiate between Boundary fill algorithm and Flood fill algorithm. 10

Unit-II

2. (a) What is 3-D transformation? Write homogeneous 3-D transformation matrix for translation, rotation and reflection. 10
- (b) Translate the square ABCD whose coordinate A (0, 0) B (3, 0) C (3, 3) and D (0, 3) by 2 unit in both the direction and then scale it by 1.5 unit in X-direction and 0.5 unit in Y-direction. 10
- (c) Define the term "windows" and "viewport". Also explain window to viewpoint transformation in detail. 10

Unit-III

3. (a) What do you mean by Radiometry? Explain the difference between Radiometry and Photometry in detail. 10

C022531(022)

[3]

- (b) Write short notes on : 10
- (i) Colorimetry
- (ii) Color spaces
- (c) Explain Canonical View Volume (CVV) in detail with example. 10

Unit-IV

4. (a) Explain characteristics of B-spline curves. Also explain Knot values of B-Spline curve and generate question for blending function for the cubic Spline considering $d = 3$ 10
- (b) Find out any 5 points of a Bezier curve where control points are A (1, 1) B (2, 3) C (4, 3) and D (6, 4). 10
- (c) Explain Painter's algorithm with example. How the depth of a polygon is determined by Painter's algorithm? 10

Unit-V

5. (a) Explain Ray Tracing method with its intersection with a generic plane and an object using appropriate equation. 10

C022531(022)

PTO

- (b) What do you mean by Animation? Write different kinds of techniques of Animation. 10
- (c) What do you mean by Fractals? Explain Koch curves in detail. 10