Reg. No ..... Name **25U610**

B. Sc. DEGREE END SEMESTER EXAMINATION - MARCH 2025

SEMESTER 6 : COMPUTER APPLICATION

COURSE : **19U6CRCAP11 ; COMPUTER GRAPHICS**

(For Regular 2022 Admission and Supplementary 2021/2020/2019 Admissions)

Time : Three Hours Max. Marks: 75

PART A

Answer All (1 mark each)

1. What is the pitch of a color CRT?
2. Which is the most commonly used boundary representation for a 3D graphic object?
3. Define Resolution.
4. Which color represents (1,0,1) in RGB color model?
5. List the different ways of representing wireframe models.
6. What is planar polygon?
7. Write the 2D rotation equation in the matrix form.
8. Which of the following orthographic parallel projection is called as a plan view?
9. Define viewport.
10. Define 2D viewing.

(1 x 10 = 10)

PART B

Answer any 8 (2 marks each)

11. Explain printer.
12. Define view reference point.
13. Explain scan converting a rectangle.
14. Explain pivot-point scaling.
15. Differentiate between rotation and reflection.
16. Differentiate object space methods and image space methods.
17. Explain transforming curves and surfaces.
18. Write the 3D scaling matrix.
19. Explain Color Display monitor.
20. List the applications of computer graphics.

(2 x 8 = 16)

PART C

Answer any 5 (5 marks each)

21. Which are the steps involved in window to viewport co-ordinate transformation in 3D?
22. Show that the composition of two successive rotations are additive
    i.e. R(Θ1).R(Θ2) = R(Θ1+ Θ2).
23. Explain RGB color model.
24. Explain scan line method.
25. Write the 3D scaling matrix with respect to a fixed point(xf,yf,zf).
26. Explain scan-converting a character.
27. Explain 2D viewing pipeline.

(5 x 5 = 25)

PART D
Answer any 2 (12 marks each)

28. Explain 3D transformations with neat diagram.
29. Explain composite transformation. Explain any two with example and diagram.
30. List all types of clipping and explain any three in detail with examples.
31. a) List out the differences between z-buffer method and A-buffer method for determining the visible surfaces.
    b) Describe about the depth-sorting method to display the visible surfaces of any given object with plane faces. Explain the tests to identify overlapping surfaces.

(12 x 2 = 24)