Reg. No ..... Name **23U610**

B. Sc. DEGREE END SEMESTER EXAMINATION : MARCH 2023

SEMESTER 6 : COMPUTER APPLICATION

COURSE : **19U6CRCAP11 : COMPUTER GRAPHICS**

(For Regular - 2020 Admission and Supplementary - 2019 Admission)

Time : Three Hours Max. Marks: 75

PART A

Answer All (1 mark each)

1. Explain windowing transformation.
2. What are the rigid body transformation?
3. What does composite transformations mean?
4. Write the 3D translation vector.
5. What do you mean by Computer Graphics?
6. What are the basic geometric transformations?
7. What is interlacing in CRT?
8. What is subtractive modeling?
9. What is planar polygon?
10. List one circle drawing algorithm.

(1 x 10 = 10)

PART B

Answer any 8 (2 marks each)

11. How image is represented in computer graphics?
12. Represent window to viewport mapping equation.
13. If an image has a height of 2 inches and an aspect ratio of 1.5, what is its width?
14. Define view volume.
15. Explain problem of approximation.
16. Explain the advantages of A-buffer method.
17. Write the 3D scaling matrix
18. What are the various applications of computer graphics?
19. Differentiate rotation and reflection.
20. List the applications of computer graphics.

(2 x 8 = 16)

PART C

Answer any 5 (5 marks each)

21. Explain Display monitor.
22. Explain 3D translation with diagram.
23. Write shortnote on different flat panel displays.
24. Which are the steps involved in window to viewport co-ordinate transformation in 3D?
25. State two successive rotation are additive.

26. Briefly explain Cohen Sutherland line clipping.

27. Differentiate between the object space and image space method for the hidden surface removal of an image.

(5 x 5 = 25)

PART D
Answer any 2 (12 marks each)

28. Explain 2D basic transformation with neat diagram.

29. 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. Also explain the tests to identify overlapping surfaces.

30. What are the different types of projections? Explain each in detail.

31. Given a triangle A(20,10),B(80,20),C(50,70) .
Find the co-ordinate of vertices after each of the following transformation.
a)Reflection about the line x=y
b)Rotation of the traingle ABC about vertex A in clockwise direction for an angle 90°
c)Shear about x axis.

(12 x 2 = 24)