(Pages : 4) **K – 3711**

Reg. No. : .....

Name : .....

Fifth Semester B.Sc. Degree Examination, February 2021.

Career Related First Degree Programme under CBCSS

Group 2(b) – COMPUTER SCIENCE

Core Course

CS 1541 – COMPUTER GRAPHICS

(2018 Admission Regular)

Time : 3 Hours Max. Marks : 80

SECTION – A

(Very short answer type)

One word to maximum of **one** sentence. Answer **all** questions.
Each question carries **1** mark.

1. Explain Aspect ratio.
2. What are Fractals?
3. What is resolution?
4. Name any one of the clipping algorithm.
5. Name any one of the visible surface detection algorithm.
6. What is a window?

P.T.O.

7. What is persistence?

8. What do you mean by scan conversion?

9. Explain Shearing.

10. What you mean by Inside-outside Test?

(10 × 1 = 10 Marks)

SECTION – B

(Short answer type)

Not to exceed **one** paragraph. Answer any **eight** questions.
Each question carries **2** marks.

11. Explain 3D Scaling.

12. Explain raster scan system?

13. Explain the advantages and disadvantages of DDA algorithm.

14. Explain Windows –to-Viewport mapping.

15. List the applications of fractals.

16. What are homogeneous co-ordinates?

17. Write a note on boundary fill algorithm.

18. What is Bitmap Graphics? Explain its disadvantages.

19. Differentiate between window and viewport.

20. What are the important properties of Bezier Curve?

21. What is 2D Translation?

22. What is clipping? And types of clipping.

23. Explain Parametric Curves?

24. What is scan-line algorithm?

25. Explain the two types of parallel projection.

26. What is frame buffer?

(8 × 2 = 16 Marks)

SECTION – C (Short Essay)

Not to exceed **120** words. Answer any **six** questions. Each question carries **4** marks.

27. Digitize a line from (10,12) to (15,15) on a raster screen using Bresenham's straight Line algorithm.

28. Explain about Bresenham's circle generating algorithm.

29. Explain 2D Shear.

30. Explain any one of the 3D transformations with suitable examples.

31. Explain any one of the hidden surface removal algorithm.

32. Explain Composite transformation.

33. What is the use of clipping? How will you clip a point?

34. Differentiate parallel projection from perspective projection.

35. Explain B-Spline curves.

36. Explain Back face detection.

37. Explain parametric curve.

38. Explain z-buffer method.

(6 × 4 = 24 Marks)

SECTION – D (Short essay)

Answer any **two** questions. Each question carries **15** marks.

39. Explain any four input devices.

40. Explain the DDA line drawing algorithm with example.

41. What are the applications of computer graphics? Explain it.

42. Explain Sutherland-hodgeman polygon clipping algorithm with suitable example

43. Explain the various geometric transformations in detail.

44. Explain the concept of projection.

(2 × 15 = 30 Marks)
