Sixth Semester B.C.A. Degree Examination, April/May 2019

(CBCS Scheme)

Computer Science

Paper 6.7 – COMPUTER GRAPHICS

Time : 3 Hours]   *[Max. Marks : 90*

Instructions to Candidates : ALL Sections are compulsory.

SECTION – A

Answer any **TEN** questions. Each question carries **1** mark.   **(10 × 1 = 10)**

1.   What is refresh CRT?

2.   Define ellipse.

3.   What is blanking?

4.   What is a viewport?

5.   Define reflection.

6.   What is composite transformation?

7.   What do you mean by device coordinate system?

8.   What is parallel projection?

9.   What is the use of control points?

10. What is intensity cueing?

11. What is constraints?

12. Mention the combinational keys of keyboard.

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SECTION – B

Answer any **FIVE** questions. Each question carries **3** marks. **(5 × 3 = 15)**

13. What are the difference between random and raster displays?

14. Write a program to draw a circle using DDA tech.

15. Explain point clipping.

16. Explain homogeneous transformation.

17. Explain uniform scaling transformation with an example.

18. Explain the properties of curves.

19. Explain basic functions of segments.

SECTION – C

Answer any **SIX** questions. Each question carries **5** marks. **(6 × 5 = 30)**

20. Briefly explain color model.

21. Write an algorithm to draw a straight line using Bresenham's tech and trace with 2 end points (20, 10) and (30, 18).

22. Briefly explain character attributes.

23. Explain Cohen and Sutherland line clipping algorithm.

24. (a) Write a note on Shear transformation

    (b) Explain fixed point scaling transformation. **(2 + 3)**

25. Explain 3D rotational transformation.

26. Write a note on polygon table.

27. (a) Explain rubber band method

    (b) Explain light pen. **(3 + 2)**

SECTION – D

Answer any **FIVE** questions. Each question carries **7** marks.   **(5 × 7 = 35)**

28. Explain ellipse generating algorithm.

29. (a) Write a program to perform scaling transformation. Explain with suitable example.

     (b) Explain properties of line.   **(4 + 3)**

30. Explain Sutherland and Hodgeman polygon clipping.

31. (a) Explain window to viewport transformation carried out.

     (b) Write a program to draw a bar chart.   **(3 + 4)**

32. (a) Write a note on projections.

     (b) Explain Octree.   **(3 + 4)**

33. Explain Z buffer algorithm for hidden surface removal.

34. (a) Explain scan line method.

     (b) Write a program to animate man walk with umbrella.   **(3 + 4)**