C 80857 (Pages : 2) Name.....

Reg. No.....

FOURTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION APRIL 2020

B.C.A.

BCA 4C 08—COMPUTER GRAPHICS

(2017 Admissions)

Time : Three Hours Maximum : 80 Marks

Section A

Answer **all** *the questions.*
Each question carries 1 *mark.*

1. Define Persistence.
2. What is the importance of resolution ?
3. Give the syntax to load a specified color into the frame buffer at a position corresponding to column along scan line y.
4. Write a short note on polygon filling.
5. What is a pixel ?
6. What are transformations ?
7. What is the significance of a region code in clipping ?
8. What is a viewport ?
9. What is a GIMP ?
10. What are the main components of GIMP window ?

(10 × 1 = 10 marks)

Section B

Answer **all** *the questions.*
Each question carries 2 *marks.*

11. Distinguish between horizontal retrace and vertical retrace.
12. What is beam penetration method ?
13. Give the homogenous representations of 2D transformations.
14. Explain reflection.
15. What is clipping ? Give Examples.
16. Why homogeneous coordinates are used in graphics ?

Turn over

17. Express the conversion from RGB to CMY color model.

18. How to remove parts of an image in GIMP ?

(8 × 2 = 16 marks)

Section C

Answer any **six** *questions.*
Each question carries 4 *marks.*

19. Explain Random scan displays.

20. What is the principle behind LCD monitors ?

21. Given a circle radius = 10, determine the circle octant in the first quadrant from $x = 0$ to $x = y$.

22. What are the disadvantages of DDA line drawing algorithm ?

23. Explain the sequence of transformations in windowing.

24. Explain the 2D viewing transformation pipeline.

25. What are the strategies used in Sutherland Hodegeman polygon clipping ?

26. Explain the various color model applications.

27. Explain the applications of GIMP.

(6 × 4 = 24 marks)

Section D

Answer any **three** *questions.*
Each question carries 10 *marks.*

28. Explain the working of Refresh CRT.

29. Explain Bresenham's circle generating algorithm.

30. Describe various 2D transformations with examples.

31. Explain Cohen Sutherland line clipping algorithm in detail.

32. Write short notes on the color models RGB. CMY, YIQ.

(3 × 10 = 30 marks)