

C 21255

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Name.....

Reg. No.....

FOURTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION, APRIL 2022

B.C.A.

BCA4C08—COMPUTER GRAPHICS

(2017—2018 Admissions)

Time : Three Hours

Maximum : 80 Marks

**Part A***Write short answer on all questions.**Each question carries 1 mark.*

1. What is aspect ratio ?
2. What is a bitmap ?
3. What is random scan ?
4. What is a pixel ?
5. What do you mean by horizontal retrace ?
6. What is world co-ordinate system ?
7. What is a frame buffer ?
8. Name two types of beam refreshing in raster scan.
9. Mention 2 popular algorithms for generating circles.
10. Name the 2D transformation in which the object is rotated 180°.

(10 × 1 = 10 marks)

**Part B***Write a paragraph on all questions.**Each question carries 2 marks.*

11. Distinguish between uniform scaling and differential scaling.
12. What are output primitives ?
13. Explain the concept of point clipping.

**Turn over**

14. What is YIQ ?
15. Mention any two advantages of shadow mask CRT.
16. Differentiate between window port and view port.
17. What do you mean by scan converting a straight line ?
18. Draw the representation of 9 regions using 4 bits in Cohen Sutherland line clipping.

(8 × 2 = 16 marks)

### Part C

*Write short essay on any **six** questions.  
Each question carries 4 marks.*

19. Explain 2D composite transformations.
20. Explain the working of liquid crystal display.
21. Explain raster scan displays.
22. Explain the concept of boundary fill algorithm.
23. Write the matrices for all two-dimensional transformation in homogeneous co-ordinate.
24. How CMY color model differ from RGB color model ?
25. Explain the use of GIMP crop for images.
26. Explain different types of shearing.
27. How composition of 2 scaling can be represented ?

(6 × 4 = 24 marks)

### Part D

*Write essays on any **three** questions.  
Each question carries 10 marks.*

28. Explain Bresenham's line drawing algorithm.
29. Explain the working of CRT with a diagram.

30. Briefly explain Sutherland Hodgeman polygon clipping algorithm.

31. Explain the following 2D transformations :—

- a) Translation.
- b) Rotation.
- c) Scaling.
- d) Reflection.

32. Explain the features of GIMP.

(3 × 10 = 30 marks)