19U427S (Pages: 2) Name: …….

Reg. No……...

FOURTH SEMESTER B.C.A. DEGREE EXAMINATION, APRIL 2021

(CUCBCSS-UG)

CC17U BCA4 C08 - COMPUTER GRAPHICS

(Computer Application - Complementary Course)

(2017, 2018 Admissions – Supplementary/Improvement)

Time: Three Hours Maximum: 80 Marks

PART A

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

1. What is the aim of electron gun in CRT?
2. What is scan conversion?
3. What is the need of homogeneous coordinates?
4. What is point clipping?
5. Brief on the governing equation of a circle.
6. What is purity of light?
7. Write any four input devices that are used in the graphics field.
8. What are the different types of clipping?
9. Write the matrix equation of translation.
10. What is the file formats supported in GIMP?

(10 × 1 = 10 Marks)

PART B

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

11. Give the initial decision parameter equation for Bresenham's line drawing algorithm.
12. What is aspect ratio?
13. Explain resolution.
14. Write the equation for 2D rotation with respect to pivot point.
15. Convert the given color value to CMY color mode where R=0.23 G=0.57 and B=0.11
16. Compare exterior and interior clipping.
17. List out any four applications of computer graphics.
18. What is additive and subtractive color model?

(8 × 2 = 16 Marks)

PART C

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

19. Apply the DDA line drawing algorithm to find the intermediate pixel values for the following lines A (15, 20) and B (13, 18).
20. Give a brief idea of CRT monitors.
21. What are the stages involved in 2D viewing transformation pipeline? Explain briefly about each stage.
22. Explain how we save a selected sub image to a file in GIMP.
23. Compare and contrast shadow mask method and beam penetration method.
24. Discuss the working of 2D Scaling with respect to origin and with respect to fixed (pivot) point.
25. Explain the procedure to check the position of a point with respect to the clip window.
26. Explain about window to viewport coordinate transformations.
27. Differentiate between random scan and raster scan display systems.

(6 × 4 = 24 Marks)

PART D

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

28. What is clipping? Explain the Sutherland Hodgeman polygon clipping algorithm in detail.
29. Write and explain Bresenham's line drawing algorithm and trace the algorithm for the given points (2, 1) to (10, 12).
30. Discuss the following color models with suitable diagram and equations: RGB, CMY, YIQ models.
31. Explain the various two dimensional basic transformations with suitable figures.
32. Describe the functionalities of Refresh Cathode Ray Tube with suitable diagram.

(3 × 10 = 30 Marks)

****