

Roll No. _____

22/5064**B.C.A. (Fourth Semester)****Examination, 2022****First Paper****(Computer Graphics & Multimedia Application)***Time : Three Hours**[Maximum Marks : 75***Note :** Attempt any **five** questions. **All** questions carry equal marks.**Note :** The answers to short questions should not exceed **200** words and the answers to long questions should not exceed **500** words.**22/5064**1. ~~(i)~~ Describe the working of any two interactive graphics devices with diagram.

5

~~(ii)~~ What is Scan conversion and why is it needed?

5

~~(iii)~~ Differentiate between Raster Scan display and Random scan (line drawing) display unit.

5

~~2.~~ Write the Bresenham's Algorithm for drawing : $7\frac{1}{2} \times 2 = 15$

(i) A circle in the first quadrant

(ii) A straight line, given the starting and ending coordinates

Explain the working of the algorithm in both the above cases.

~~3.~~ Differentiate between the following with suitable examples : $5 + 5 + 5 = 15$ ~~(i)~~ Graph plotter and Image scanner

~~(ii)~~ Hardware and Software for computer Graphics.

~~(iii)~~ Window and View port

4. Write a short note on the following : $7\frac{1}{2} \times 2$

~~(i)~~ Dream Weaver

~~(ii)~~ Sutherland Cohen Algorithm

5. How are curves and surfaces represented in Computer graphics? Explain briefly how cubic curves and quadric surfaces are used in this representation. 15

~~6~~ (i) What are homogeneous coordinates? How are they used to represent transformations in 2-D and 3-D? 7

(ii) Write down the 3-D transformation matrix for Rotation, Shear, Reflection and Translation. 8

~~7~~ (i) Define multimedia. What are the different types of multimedia.? 4

~~(ii)~~ Differentiate between video and Animation with example. What is morphing? 4

~~(iii)~~ With a diagram, explain how you can set up a multimedia project. What are the different steps in the creation of a multimedia project. 7

~~8~~ Write a short note on any **two** of the following : $7\frac{1}{2} \times 2 = 15$

(i) Solid Modelling

(ii) Cyrus Beck Algorithm

(iii) Plasma Panel Display