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**Presidency University**

**Bengaluru**

**SCHOOL OF CSE & IS**

**MAKE UP EXAMINATION – SEPTEMBER 2023**

**Course Code**: BCA 206

**Course Name**: Computer Graphics

**Program & Sem**: BCA

**Date**: 30.09.2023

**Time**: 01:00 PM – 4:00 PM

**Max Marks**: 100

**Weightage**: 50%

**Instructions:**

1. *Read the all questions carefully and answer accordingly.*
2. *Do not write any matter on the question paper other than roll number.*
3. *Scientific and non-programmable calculators are permitted*
4. *Do not write any information on the question paper other than Roll Number*

**Part A**

**Answer all the Questions. (10Qx 2M= 20M)**

1. Define following terms

a. pixel b. aspect ratio c. display system d. raster scan (CO1)[Comprehension]

2. Give different applications of computer graphics in present world (CO1)[Comprehension]

3. Give matrix to perform rotation. Show how a point is rotated about origin, show with example (CO2)[Comprehension]

4. What do you mean by affine transformation. Explain briefly (CO2)[knowledge]

5. Explain about illumination model. (CO2)[Knowledge]

6. Give any four difference between random scan and raster scan (CO2)[Comprehension]

7. Explain about traditional animation techniques (CO2)[Comprehension]

8. What is the need to detect visible area. (CO2)[Comprehension]

9. Explain working of viewing pipeline (CO2)[Comprehension]

10. List out types of projections (CO2)[Comprehension]

**Part B [Thought Provoking Questions]**

**Answer all the Questions. (4Qx10M=40M)**

1. List and Explain openGL line and point functions and its attributes with example

(CO2)[Comprehension]

1. Write how clipping polygon region fallen outside the window using Hodgeman Sutherland polygon clipping algorithm can be done (CO2)[Comprehension]
2. Show how to draw circle using Bresenham algorithm (CO3)[Comprehension]
3. Explain about any two color models with diagram (CO3)[Comprehension]

**Part C [Problem Solving Questions]**

**Answer all the Questions. (2Qx20M=40M)**

1. Identify the points between the vertices of line segment (0,0) and (5,4) using Bresenhams Algorithm. Draw the diagram and calculate coordinate points (CO4)[Comprehension]
2. Consider the window size as (5,5) and (9,9), clip the line segment (4,12) and (8,8) using cohen Sutherland line clipping algorithm. Draw diagram and show all calculations.

(CO2)[Comprehension]