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| Register Number:  Date: |



**ST JOSEPH’S COLLEGE (AUTONOMOUS), BANGALORE-27**

**BSc – IV SEMESTER**

**SEMESTER EXAMINATION APRIL-2020**

(Examination conducted in July 2022)

**CS 6215 - Computer Graphics**

**Time – 2 ½ hrs MaxMarks-70**

**The question paper has one printed page**

**PART A**

**I Answer the following question 2\*10=20**

1. What is computer graphics? List any two applications of computer graphics.
2. Define transformation. List all the types of transformation.
3. Write the advantages of DDA line algorithm over Bresenham’s line algorithm.
4. Expand DDA, CRT.
5. Write the metric’s notation for composite translation and composite rotation.
6. What is clipping? What is its type?
7. List the difference between MOUSE and trackball.
8. What is horizontal and vertical retrace?
9. What is the difference between parallel and perspective projection?
10. What is reflection? Give the matrix representation of 3D reflection.

**PART B**

**II Answer any FIVE question 5\*6=30**

1. Write an algorithm to demonstrate the working of bresnham’s line drawing algorithm.
2. Explain the working of RGB color format.
3. What is composite scaling? Give the matrix representation of composite scaling. Illustrate with an example.
4. Write an algorithm to demonstrate the working of flood fill algorithm.
5. What are the steps involved in text clipping? Illustrate with an example.
6. List the difference between parallel and perspective projection.
7. Explain octrees in detail.

**PART C**

**III Answer any TWO question 2\*10=20**

1. A) Write a program to demonstrate the working of DDA line algorithm.

b) A line has a starting point (1,7) and ending point (11,17). Apply the Digital Differential Analyzer algorithm to plot a line.

1. In detail explain the working of cohen sutherland line clipping algorithm.
2. What is 3D transformation? Explain the different types of 3D transformation in detail.