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| **ST. JOSEPH’S COLLEGE (AUTONOMOUS), BANGALORE-27** |
| **B.C.A - IV SEMESTER** |
| **SEMESTER EXAMINATION: APRIL 2018** |
| **CA4115-** **COMPUTER GRAPHICS** |
| **Time- 2 1/2 hrs** |  |  **Max Marks-70** |
| **This paper contains ONE printed pages and three parts** |

PART A

ANSWER ALL QUESTIONS (10\*2=20)

1. Define Computer Graphics. Mention any *two* applications.
2. Differentiate between LCD and PLASMA display.
3. Why is Bresenham’s algorithm better than DDA?
4. Define Aspect Ratio.
5. Define Reflection.
6. What do you mean by 2D line clipping?
7. Define any two Input Devices.
8. What is Parallel Projection?
9. Mention various 3D Transformatios.
10. Define 3D Coordinate System.

PART B

ANSWER ANY 5 (5\*6=30)

1. With a neat diagram explain the working of CRT.
2. Illustrate Bresenham’s line algorithm for a line with end points (30, 10) and (40, 18).
3. What are the various Transformations possible in 2D? Discuss.
4. Explain Boundary Fill algorithm with an example.
5. Explain the general transformation matrix for Window to viewport transformation.
6. Write in detail about Octree search algorithm.
7. Write in detail the various color models .

PART C

ANSWER ANY 2

1. Define projection. Explain various types of Perspective Projection in detail.
2. Explain Cohen-Southerland Line Clipping algorithm. Using this algorithm find out visible portion of line P(40,80), Q(120,30) inside the window. The window is defined as ABCD: A(20,20) , B(60,20), C(60,40), D(20,40).
3. Explain the following techniques:
4. Back Face Removal (5)
5. Depth Buffer Method (5)