2004 CENTRE FOR DEVELOPMENT OF ADVANCED COMPUTING(C-DAC) M.C.A

End-Term Examination
Second Semester [MCA] – DEC 2004
COMPUTER SYSTEM ARCHITECTURE

Paper Code: MCA-106
Time: 3 Hours
Marks: 60

Q. 1 (a) Explain Bresenham's line drawing algorithm. Give the advantages of this algorithm over DDA algorithm. 7

(b) Compute the intermediate prints on the line drawn from (0,0) to (5, 10) using Bresenham's algorithm. 5

Q. 2 (a) Explain Cyrus-Beck parameter line clipping algorithm. 6

(b) Compute coordinate of points of circle drawn with centre at (0,0) and radius 6, using mid point circle algorithm. 6

Q. 3 (a) Define window to viewport transformation. 6

(b) Compute 2D transformation matrix for rotating a point (12, 6) about the point (3, 2) by an angle 300 in clockwise direction. 6

Q. 4 (a) Explain YIQ color model. How it can be obtained from RGB model? and why is it used in commercial color television broadcasting?

(b) Explain the design and working of a color shadow marks CRT. 6

Q. 5 (a) Give the comparison of Gourands Phoring Shading Techniques. 6

(b) Explain 2 buffer algorithm per hidden surface removal. 6

Q. 6 (a) Write a program to display parametric cubic curves using forward differences and recursive sub division. 6

(b) Explain principle of working of Roster Scan display system. 6

Q. 7 (a) Explain Multipass Transformation and its application in image processing. 7
(b) What is image filtering? Why is it required? 5

Q. 8 Write notes on any two :-
(a) Solid modeling (b) Volume Rendering (c) Fractul models. 12