**Registration no:** | | | | | | | | | | |

**Total Number of Pages: 01**



**MCA**
**MCC402**

**4th Semester Regular/Back Examination 2016-17**
**COMPUTER GRAPHICS & MULTIMEDIA**
**Branch: MCA**
**Time: 3 Hours**
**Max Marks: 70**
**Q.CODE:Z457**

**Answer Question No.1 which is compulsory and any five from the rest.**
**The figures in the right hand margin indicate marks.**

Q1 **Answer the following questions:** (2x10)

a) Define Multimedia ? What are its applications ?
b) List the properties of B-Spline Curve.
c) What are the drawbacks of DDA line drawing algorithm ?
d) Give a brief difference between parallel and perspective projection.
e) Explain the merit and demerit of DVST.
f) What do you mean by fractal geometry ? Explain
g) What is stair step effect ?
h) Define scan conversion and discuss its advantages ?
i) Discuss self similar and self affine fractals.
j) Define the term "Pixel". What are its measurement criteria ?

Q2 a) Discuss the working principles of CRT with proper diagram. (5)

b) Explain the Cohen Sutherland line clipping Algorithm. (5)

Q3 a) Given input ellipse parameters $R_x$=10, and $R_y$=8, Illustrate the steps in the midpoint ellipse algorithm and calculates the points of the 1st octant for the ellipse. (5)

b) A mirror is vertically placed such that it passes through (20,0) & (0,20). Find the reflected view of a triangle with vertices (30,40), (50,50)& (40, 70) in this mirror. (5)

Q4 a) Find a matrix for parallel projection onto a plane 3x+y +4z +1=0 when orthographic projection is used. (5)

b) What is Raster Scan ? How it is different from Random Scan ? (5)

Q5 a) Triangle ABC whose vertices are at A(0,0), B(5,1), & C(3,4). Rotate it by $90^0$ (i) at origin (ii) At point (2 , 3). Explain the importance of Homogeneous coordinate. (5)

b) Find the normalization transformation N which uses the rectangle A(1,1), B(5,3), C(4,5)& D(0,3) as a window & the normalized device screen as the viewport. (5)

Q6 a) A clipping window ABCD is located as A(100,10) B(160,10) C(160,40) D(100,40). Test for visibility of line segment (50,0) & (70,80), (120,20) & (140,80). (5)

b) Find equation of Bezier curve which passes through points (0,0) and (-2,1) and is controlled through points (7,5) and (2,0). (5)

Q7 a) What is antialiasing technique ? What are its applications ? Explain. (5)

b) Discuss about lossless and lossy compressions. (5)

Q8 **Short Note on** (5 x 2)



a) Z-Buffer algorithm.
b) Flood-fill and boundary fill algorithms