YMCA UNIVERSITY OF SCIENCE& TECHNOLOGY, FARIDABAD
MCA (UNDER CBS)(SCHEME 2016) REAPPEAR
COMPUTER GRAPHICS AND MULTIMEDIA(MCA-16-106)

Max. Marks:60

Time: 3 Hours

Note:
1. It is compulsory to answer the questions of Part -1. Limit your answers within 20-40 word in this part.
2. Answer any four questions from Part -2 in detail.
3. Different parts of the same question are to be attempted adjacent to each other.
4. Assume suitable standard data wherever required, if not given.

PART -1

Q1 (a) What is anti-aliasing? (2)
(b) What are color and grayscale levels? (2)
(c) What are three major adverse effects of scan conversion? (2)
(d) What is Hyper text, Hyper media and hyper graphics? (2)
(e) What are inside-outside tests? (2)
(f) What are types of computer graphics? (2)
(g) Why text clipping is performed and how? (2)
(h) Differentiate morphing and tweening. (2)
(i) How is text clipping performed? (2)
(j) Give two features of MatLab. (2)

PART -2

Q2 (a) Write an algorithm to scan-convert a rectangle using Bresenham's line drawing algorithm. (5)
(b) Let R be the rectangular window whose lower left-hand corner is at $L(-3,1)$ and upper right-hand corner is at $R(2,6)$. Find the region codes for the end point of following lines : AB,CD,EF,GH,IJ (5)
where
$A=(-4,2)$, $B=(-1,7)$, $C=(-1,5)$, $D=(3,8)$, $E=(-2,3)$, $F=(1,2)$, $G=(1,-2)$, $D=(3,3)$
and also determine which lines will be clipped and why?

Q3 (a) Write a program in C for polygon clipping. (5)
(b) Differentiate raster scan and random scan display systems. (5)

Q4 (a) Find the normalization transformation N which uses the rectangle $A(1,1),B(5,3),C(4,5),D(0,3)$ as a window and the normalized device screen as a viewport. (5)
(b) Explain Boundary fill and flood fill algorithms (5)

Q5 (a) Write the mechanism for audio play backing and recording video. (5)

(b) Perform reflection of a triangle $A(0,0)$, $B(2,0)$ and $C(1,5)$ about the line $y= x +5$. (5)

Q6 (a) What is animation? What are different types of animations? (5)
(b) What is an authoring system? Name all authoring tools with examples. (5)

Q7 (a) Explain Parallel and Perspective projection. (5)

(b) What are Area fill attributes and Bundled attributes? Explain. (5)