

YMCA UNIVERSITY OF SCIENCE & TECHNOLOGY, FARIDABAD

MCA (UNDER CBS)(SCHEME 2016) REAPPEAR

COMPUTER GRAPHICS AND MULTIMEDIA(MCA-16-106)

Time: 3 Hours

Max. Marks:60

- 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)