

S.No. : 190

BCA2512

No. of Printed Pages : 04

Following Paper ID and Roll No. to be filled in your Answer Book.

PAPER ID : 21155	Roll																			
	No.																			

BCA Examination 2018-19

(Fifth Semester)

COMPUTER GRAPHICS

Time : Three Hours]

[Maximum Marks : 60

Note : Attempt all questions.

SECTION 'A'

1. Attempt all parts of the following : $1 \times 8 = 8$
- Define clipping.
 - What is line segments?
 - Define implicit and explicit form of the equation of a plane.
 - Differentiate convex polygon and concave polygon.
 - What is segment table?

[P. T. O.

- (f) Write a 2×2 transformation matrix for the following rotation about the origin (1) counter clockwise by π .
- (g) Define viewing transformation.
- (h) Consider a raster system with resolution of 1024×1024 . What is the size of raster (In bytes) needed to store 4 bits per pixel.

SECTION 'B'

Note : Attempt any two parts of the following : $6 \times 2 = 12$

- 2. (a) (i) Rasterize the line from (0, 0) to (4, 6) using DDA algorithms.
- (ii) Write steps required to draw a line from point (X_1, Y_1) to (X_2, Y_2) using Bresenham's line drawing algorithm.
- (b) Describe the DVST and plazma display pannel with advantage and disadvantage.
- (c) Consider two roster systems with resolutions of 640 by 480 and 1280 by 1024. How many pixels could be accessed per second in each of these systems by a display controller that refreshes the screen at a rate of 60 frames per second? What is the access time per pixel in each system?

- (d) What is inside and outside testing? Describe the difference between even-odd and winding-number method with example.

SECTION 'C'

Note : Attempt all question from this section. Attempt any two question : $8 \times 5 = 40$

3. (a) What are the component of computer graphics? Describe each of them in details.
- (b) Describe the advantage and characteristic of computer graphics.
- (c) Write short note on the following :
- (i) Beam penetration CRT
 - (ii) Shadow-mask CRT
4. Attempt any two question :
- (a) Differentiate between Boundary fill and flood fill algorithms.
- (b) Describe various operations carried out on the segments.
- (c) Deffereniate between midpoint subdivision and cohen-Sutherland line clipping algorithm.

[P. T. O.

5. Attempt any two question :

- (a) Describe the features for a multimedia system.
- (b) Describe the different architecture used in multimedia systems.
- (c) Differentiate between MPEG and H. 323 multimedia file formats.

6. Attempt any two question :

- (a) Perform a 60° rotation of a triangle A (0, 0), B (1, 1) and C (-1, -1) about the origin.
- (b) What is transformation. How many types of transformation are? Describe each of them in details.
- (c) Give the explicit form of the 3×3 matrix representing the transformation. Scaling by factor of 2 in the x-direction and then rotating about (2, 1).

