



PAPER IC

B. Tech.

(SEM. V) (ODD SEM.) EXAMINATION, 2009-10

COMPUTER GRAPHIC

Time : 3 Hours]

[Total Marks : 100

Note : Answer **all** questions.

1 Attempt any **two** of the following : **10x2=20**

- (a) List and explain some applications for large-screen displays.
- (b) Define the following terms :
 - (i) Primitive devices
 - (ii) Display file structure
 - (iii) Display control text.
- (c) Set up a parallel version of Bresenham's algorithm for straight lines of any slope.

2 Attempt any **two** of the following : **10x2=20**

- (a) Discuss various methods of storing the edge list and their relative merits for pattern filling.

EE-1073]

1

[Contd...

- (b) Explain the following :
- (i) Segments
 - (ii) Segment Table
 - (iii) Creating, deleting and renaming segments.
- (c) Write a procedure to compute the elements of the matrix for transforming object descriptions from one Cartesian coordinate system to another. The second coordinate system is to be defined with an origin point P_0 and a vector V that gives the direction for the positive y' axis of this system.

3 Attempt any **two** of the following : **10x2=20**

- (a) Prove the assertion that the transformation of a line between two points A and B is equivalent to the line between the transform of A and the transform of B. Consider only the translation, rotation, and scaling transformations.
- (b) Find out the sequence of basic transformations which are equivalent to y-direction shearing.
- (c) Explain multiple windowing in detail.

4 Attempt any **two** of the following : **10x2=20**

- (a) What is the necessity for 3-D clipping algorithm? Explain any one 3-D clipping algorithm.
- (b) Explain event handling echoing.
- (c) Derive the 3-D transformation matrix for reflecting a point about a plane.

5 Attempt any **two** of the following : **10x2=20**

- (a) Explain scan line algorithm for hidden surface removal.
 - (b) Discuss the properties of the Bezier and B-spline curves.
 - (c) Explain Rendering and Illumination.
-