MCA-II/M-Sc. C.S.(SW)-II

DMCA/M-16 **10775**

COMPUTER GRAPHICS

Paper : CS-DE-21

Time : Three Hours]   [Maximum Marks : 80

Note : Attempt *five* questions in all. Question Number 1 is compulsory. Attempt *four* more questions selecting *one* question from each unit. All questions carry equal marks.

Compulsory Question

1.   Answer the following in brief:

   (a)   What is a Cartesian coordinate system?

   (b)   What is the advantage of interlacing in CRT?

   (c)   Write down the equation of ellipse that is used in the polynomial method.

   (d)   What do you mean by Anti-Aliasing?

   (e)   What will be the composite transformation for mirror reflecting a point with respect to an arbitrary line?

   (f)   Write down the parametric form of equations of a line as used in the Liang-Barsky line clipping algorithm..

   (g)   What is animation?

   (h)   What is the role of gravity field in picture construction?

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UNIT-I

2. (a) What is Graphical User Interface (GUI)? Explain the working of one Input device that is most suitable and is commonly used with GUI.

   (b) How can a look up table contribute in storage efficiency of frame buffer?

3. Describe the following in the context of display devices:

   (a) Color CRT.

   (b) Non-emissive display devices.

UNIT-II

4. What is the advantage of Bresenham's drawing algorithm over other algorithms for drawing lines? Justify your answer with a suitable example.

5. Describe the following in brief:

   (a) Output primitives.

   (b) Loading frame buffer.

UNIT-III

6. Compare mid point subdivision line clipping algorithm with Cohen Sutherland line clipping algorithm.

7. Consider a square with diagonal vertices at (2,2) and (6,6). What will be the new coordinates of the vertices of the square if it is scaled to 2 times its original size keeping its centre fixed?

UNIT-IV

8. (a) Which projection is suitable if realism is to be retained after projection? How is that projection carried out?

   (b) What is the underlying concept of depth sort algorithm?

9. Distinguish between :

   (a) Rubber-band technique and dragging.

   (b) Flood fill and boundary fill algorithms.

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