

Total number of printed pages-3

53 (IT 602) CGMM

2014

COMPUTER GRAPHICS AND MULTIMEDIA

Paper : IT 602

Full Marks : 100

Time : Three hours

The figures in the margin indicate full marks for the questions.

Answer any five questions.

1. (a) What is Computer Graphics ? Explain few applications of Computer Graphics. 2+8=10
- (b) What is the difference between Emissive and Non-emissive display ? Explain any non-emissive display technology with a diagram. 2+8=10
2. (a) What is the fraction of the total refresh time per frame spent in retrace of the electron beam for a non-interlaced raster system with a resolution of 1280 by 1024, a refresh rate of 60Hz, a horizontal retrace time of $5\mu\text{s}$, and a vertical retrace time of $500\mu\text{s}$? 5

Contd.

- (b) Define Aspect Ratio. What is the advantage of Bresenham algorithm over DDA line drawing algorithm ? 2+3=5
- (c) Explain with a diagram Boundary Fill algorithm. 10
3. (a) Show that transformation matrix, for a reflection about the line $y = x$, is equivalent to a reflection relative to the X -axis followed by a counter clockwise rotation of 90° . 10
- (b) Explain with a diagram how to generate 3D rotation matrix. 10
4. Explain with an example Sutherland-Hodgman Polygon clipping. 20
5. (a) What is depth cueing? Explain with a diagram Orthogonal Projection Transformation. 2+8=10
- (b) What are the types of visible surface detection algorithm? Explain Depth-Buffer method of visible surface detection. 10

6. What is Computer Animation ? Explain Double Buffering method used in Computer Animation. Explain with diagram Key Frame Animation.

2+6+12=20

7. Write short notes on : 10×2=20

- (a) Three Dimensional Viewing Devices
(b) Inside-Outside Test.