



SE-6843

B. E. - III (Sem. V) (I. T.) Examination

April / May - 2011

Multimedia Systems (IT 502 IT)

Time : 3 Hours]

[Total Marks : 100

Instructions :

नीचे दशांशवेक निशानीवाणी विगतो उत्तरवडी पर अवश्य कभवी.  
Fillup strictly the details of signs on your answer book.

Name of the Examination :  
B. E. - 3 (I.T.) (SEM. 5)

Name of the Subject :  
Multimedia Systems (IT 502 IT)

Subject Code No. : 6 8 4 3 Section No. (1, 2,.....) : 1&2

Seat No. :

Student's Signature

1. Use Separate answer sheet for separate Section.
2. Make assumption whenever required.
3. Numbers on the right indicate marks.

Section-I

- 1 (a) Define Following Terms [10]
- (i) Fractal
  - (ii) Frame Buffer
  - (iii) DVST
  - (iv) Viewing Transformation
  - (v) Horizontal Retrace
- (b) Let the display area in a video monitor 12 inches across and 9.6 inch high. If the resolution of the monitor is 1280 \* 1024 and the aspect ratio is 1. What is the diameter of each screen point? [6]
- (c) Explain Difference between Flood Fill & Boundary Fill algorithm. [4]
- 2 (a) Explain DDA line Drawing Algorithm. [10]
- OR
- (a) Explain Ellipse generating algorithm. [10]
- (b) Explain Boundary Fill algorithm. [5]
- 3 (a) Explain Types of Fractels. [7]
- (b) Explain the Cohen-Sutherland Line Clipping Algorithm. [8]
- OR
- (b) Explain any one Polygon Clipping Algorithm. [8]

## Section-II

- 4 A **Do as Directed.** [10]
1. Derive the transformation for reflection along  $y=-x$ . [2]
  2. **Define following terms.** [8]
    - I] Window & Clipping
    - II] Viewing Pipeline
    - III] Homogeneous co-ordinate
    - IV] Foreshortening Factor
- B. Explain Different Projection scheme. [10]
- 5 A. Discuss transformation between co-ordinate systems. [05]
- B. Explain 3D reflection matrix thru arbitrary plane. [10]
- OR
- B. Derive the transformation matrix for 3D rotation about an arbitrary axis. [10]
- 6 Attempt Any Three. [15]
1. Prove that Uniform scaling ( $s_x = s_y$ ) & rotation form a commutative pair of operation but in general scaling & rotation are not commutative operation.
  2. Derive 2D transformation matrix for Zoom-in & Zoom-out operation.
  3. A triangle ABC has a co-ordinate A(1,1),B(4,1),C(3,4) the triangle is first rotated by 90 degree about origin then scale by 2 in Y-direction . Derive the 3\*3 the resulting transformation matrix which perform the above operations.
  4. Derive transformation matrix for 2D rotation about arbitrary point.
  5. Derive the reflection matrix about line  $y=2X+1$ ;