0 DEC 2016 16051(D)   - 0 DEC 2016

B. Tech 3rd Semester Examination

Computer Graphics (NS)

IT-213

Time : 3 Hours   Max. Marks : 100

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt five questions in all, selecting one question from each sections A, B, C and D. Section E is compulsory.

SECTION - A

1. What do you mean by computer graphics? What is Interactive and Non-interactive computer Graphics? What are the applications of computer graphics? Explain. (20)

2. What is a Beam penetration method? Explain shadow masking technique used in computer graphics display devices. (20)

SECTION - B

3. What do you understand by term scan conversion? Write Midpoint circle drawing algorithm. Explain the working of Midpoint circle generating algorithm by drawing a circle of radius 10 and origin at (0,0). (20)

4. What is transformation? What are the different types of transformation used in Computer Graphics? Determine the expression for rotation transformation of an object by specifying rotation axis and rotation angle. (20)

SECTION - C

5. Write Cohen Sutherland Clipping Algorithm. Use the Cohen Sutherland algorithm to clip line P1 (60,20) and P2(100,30) against a window lower left hand corner (40,10) and upper right hand corner (90,40). What are the limitations of Cohen Sutherland Clipping Algorithm? (20)

6. Explain two dimensional viewing transformation pipeline. Derive an expression for mapping the clipping window into a Normalized viewport. (20)

SECTION - D

7. (a) Explain Scan-Line Method for identifying visible surfaces. What are the limitation of this method? (10)

   (b) Write a note on Phong shading. (10)

8. (a) What is animation? Explain traditional animation techniques used in computer graphics. (10)

   (b) Write a short note on different color model used in computer Graphics (10)

SECTION - E

9. (a) Explain the merits and demerits of Plasma panel display.

   (b) Define Convex and concave polygon. Explain Vector method used to split a concave polygon with the help of suitable example.

   (c) Write a note on surface rendering.

   (d) Explain Z-buffer algorithm.

   (e) Define resolution. How Many k bytes does a frame buffer need in a 600 × 400 pixel? (5×4=20)