

5E1354

5E1354

B.Tech. V-Sem. (Back) Examination, January./February. - 2024

Computer Sc. & Engg.

5CS4-04 Computer Graphics & Multimedia

CS,IT

Time : 3 Hours

Maximum Marks : 120

Min. Passing Marks: 42

Instructions to Candidates:

Attempt all ten questions from Part A, five question out of seven from Part B and four questions out of five from Part C.

Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly. Use of following supporting material is permitted during examination. (Mentioned in form No.205)

PART - A

(Answer should be given up to 25 words only)

All questions are compulsory

(10×2=20)

1. What is resolution?
2. Explain Ambient reflection.
3. Describe properties of Koch curve.
4. Define Pirel.
5. Explain scan conversion.
6. What do you mean by clipping?
7. Discuss YIQ color model.
8. Define shearing.
9. What is parallel projection?
10. Define concave polygon.

ersahilkagyan.com

PART - B

(Analytical/Problem solving questions)

Attempt any Five questions

(5×8=40)

1. Explain the application areas of computer graphics in detail.
2. Discuss the cohen-rutherland line clipping algorithm.
3. Explain flood fill algorithm. Differentiate it with boundary fill algorithm.
4. What are the various aspects of illumination of objects?
5. Discuss the Depth Buffer Algorithm to display visible surfaces of polygon.
6. Define Animation Explain principles of animation briefly.
7. Show that the composition of two rotations is additive by concatenating the matrix representation for $R(\theta_1)$ and $R(\theta_2)$ to obtain. $R(\theta_1).R(\theta_2) = R(\theta_1 + \theta_2)$.

PART - C

(Descriptive/Analytical/Problem Solving/Design question)

Attempt any Four questions.

(4×15=60)

1. Write a routine to convert RGB color model to HSV color model. (15)
2. Explain the working of Ray tracing. Calculate rays for rectangular view port also.(15)
3. Explain B-Spline curve and Bazier curve in detail. (15)
4. a) Discuss Random scan system in detail. (8)
b) Draw a line from (10,12) to (20,18) on a raster screen using Bresenham's line algorithm. (7)
5. a) How is Liang-bersky algorithm more efficient than the Cohen Rutherland algorithm ? Explain. (8)
b) Perform 45° rotation of triangle A(0,0), B(1,1), C(5,2) about an arbitrary point (-1,-1) (7)