

5E1754

Roll No. _____

Total No. of Pages: **3****5E1754****B. Tech. V - Sem. (Main) Exam., February - 2023****Artificial Intelligence and Data Science****5AID4-04 Computer Graphics & Multimedia****CS, IT, AID, CAI****Time: 3 Hours****Maximum Marks: 70***Instructions to Candidates:*

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

Schematic diagrams must be shown wherever necessary. Any data you feel missing may 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)

1. NIL2. NIL**PART - A****(Answer should be given up to 25 words only)****[10×2=20]****All questions are compulsory**

Q.1 What is resolution?

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Q.2 Write applications of computer graphics.

Q.3 Differentiate random and raster scan system.

Q.4 What is inside-outside test in filling algorithm?

Q.5 What are homogeneous coordinates?

- Q.6 Write advantages and disadvantages of DDA algorithm.
Q.7 What do you understand by composite transformations?
Q.8 Compare RGB colour model with CMY colour model.
Q.9 What is morphing?
Q.10 What is ray tracing? Give an example.

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PART – B

(Analytical/Problem solving questions)

[5×4=20]

Attempt any five questions

- Q.1 Scan convert a straight line using DDA Algorithm, where end points of line are (5, 10) and (15, 35).
✓ Q.2 What is Aliasing? Explain any two Anti-Aliasing techniques.
✓ Q.3 What is viewing pipeline? Explain window - to - viewport transformation.
Q.4 Prove that two successive translations are additive.
✓ Q.5 Explain parametric function. Discuss properties of Bezier curves.
✓ Q.6 What are halftone patterns? Explain dithering techniques.
✓ Q.7 What are key frames? Explain Tweening.

PART – C

(Descriptive/Analytical/Problem Solving/Design Questions)

[3×10=30]

Attempt any three questions

- Q.1 What is frame buffer? Calculate size of frame buffer for a display device (CRT) supporting true colors and has 1024×1024 pixels on the screen, if size of screen is $9'' \times 12''$, calculate resolution and aspect ratio also.
✓ Q.2 What is projection? Explain parallel and perspective projection in detail.

- ✓ Q.3 Explain Cohen-Sutherland line clipping algorithm.
- Q.4 Show rotation of a 2D box represented by (5, 5) to (10, 15) with respect to (5, 5) by 90° in anticlockwise direction.
- ✓ Q.5 Write the limitations of 4-connected fill method. How it is removed in 8-connected fill method? Why these methods are called seed-fill methods?

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