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[5152]-169

S.E. (Computer Engineering) (Second Semester)

EXAMINATION, 2017

COMPUTER GRAPHICS AND GAMING

(2012 PATTERN)

Time : Two Hours

Maximum Marks : 50

N.B. :— (i) Answer total *four* questions. Q. No. **1** or Q. No. **2**, Q. No. **3** or Q. No. **4**, Q. No. **5** or Q. No. **6**, Q. No. **7** or Q. No. **8**.

(ii) Neat diagrams must be drawn wherever necessary.

(iii) Figures to the right indicate full marks.

- 1.** (a) Write Bresenham's line drawing algorithm. [6]
(b) Explain any *three* character generation methods. [6]

Or

- 2.** (a) Write Bresenham's circle drawing algorithm. [8]
(b) Define the following terms : [4]
(1) Raster Scan Display
(2) Frame Buffer

- 3.** (a) Write matrices for 3-D object Scaling, Rotation about X-axis, Rotation about Y-axis. [6]

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(b) Write and explain scan line algorithm for polygon filling. [6]

Or

4. (a) What is inside test ? Write significance of it. Explain winding number method for inside test. [6]

(b) Derive matrix for rotation about arbitrary point. Also rotate point (3, 3) with respect to (1, 1) by 90 degree. [6]

5. (a) Explain RGB and HIS color model. [6]

(b) Write short notes on the following back face removal algorithm. [4]

(i) Painter's algorithm

(ii) Z-buffer

(c) Explain point source illumination and diffused illumination. [3]

Or

6. (a) Enlist and explain any *two* color models. [4]

(b) Write short notes on : [9]

(i) Bezier Curve

(ii) B-splines

(iii) Transparency

7. (a) Explain significance of NVIDIA workstation in gaming. [4]

(b) Explain the features of computer graphics and animation software. [4]

(c) Explain a segment table with an example along with data structure used to implement are segment table ? [5]

Or

8. (a) Write any *two* algorithms for segment operation. [6]
(b) Explain methods of controlling animation. [3]
(c) Compare and contrast conventional and computer based animation. [4]