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Seat No.	
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[4957]-1079

S.E. (Computer Engg.) (Second Semester) EXAMINATION, 2016
COMPUTER GRAPHICS AND GAMING
(2012 PATTERN)

Time : Two Hours

Maximum Marks : 50

- N.B. :—** (i) Attempt 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.
(iv) Assume suitable data, if necessary.

1. (a) Write and explain any four state of the applications of Computer Graphics. [4]
(b) Explain significance of error term in Bresenham's circle drawing algorithm. Explain its mathematical derivations. [8]

Or

2. (a) A write Bresenham's line drawing algorithm. Compare pixel values for line P(0, 0) Q(6, 6). [6]
(b) Write short notes on : [6]
(i) Frame Buffer
(ii) Display Devices
(iii) Character Generation Methods.

P.T.O.

3. (a) What is inside test ? Explain even odd method in detail. [6]
(b) Write and explain with an example Cohen-Sutherland line clipping algorithm. [6]

Or

4. (a) What is homogenous coordinate system ? Derive transformation matrix for rotation about arbitrary point. [8]
(b) Write matrices in homogenous coordinate system for the following transformations : [4]
(i) 3-D rotation with respect to Y-axis
(ii) 3-D scaling
(iii) 2-D reflection with respect to origin
(iv) 2-D Y-shear.

5. (a) Explain RGB and HIS color model. [4]
(b) Explain diffused illumination and point source illumination. [3]
(c) Explain reflections, shadows, ray tracing. [6]

Or

6. (a) Explain interpolation and B-splines for curve generation. [4]
(b) Write short notes on : [6]
(i) Painter's algorithm
(ii) Warnock algorithm
(iii) Z-buffer.
(c) Explain fractal lines with an example. [3]

7. (a) What is segment ? Explain transformation operation on segment. [3]
- (b) Explain in brief : [8]
- (i) NVIDIA workstation
- (ii) Methods for controlling animation.
- (c) Explain significance of Open GLES. [2]

Or

8. (a) Write basic guidelines for animation and gaming technology. [4]
- (b) What is segment and segment table ? [3]
- (c) Explain i860 with a block diagram. [6]

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