

Total No. of Questions—8]

[Total No. of Printed Pages—3

Seat No.	
-------------	--

[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]