May 15-16

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]