Total No. of Questions—8]   [Total No. of Printed Pages—3

Seat
No.

[4657]-578

S.E. (Computer) (Second Semester) EXAMINATION, 2014

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** and Q. No. **7** *or* Q. No. **8**.

(*ii*)   Neat diagrams must be drawn whenever necessary.

(*iii*)   Assume suitable data, if necessary.

1.   (*a*)   What is computer graphics ? State the applications of computer
graphics.   [6]

(*b*)   Explain Bresenham's line algorithm and find out which pixels
would be turned on for the line with end points (5, 2) to
(8, 4) using the same.   [6]

Or

2.   (*a*)   Explain TIFF file organization with block diagram.   [6]

(*b*)   What is aliasing and anti-aliasing ? List and explain **2** anti-
aliasing techniques.   [6]

P.T.O.

3. (*a*) Explain the different methods for testing a pixel inside a polygon. [5]

(*b*) Explain the concept of 3D rotation about an arbitrary axis with an example. [7]

Or

4. (*a*) Write transformation matrix for Scaling and Rotation and scale the polygon with co-ordinates A(4, 5), B(8, 10) and C(8, 2) by 2 units in x-direction and 3 units in y-direction. Find the transformed A, B and C points. [6]

(*b*) Explain Sutherland-Hodgeman clipping algorithm with example. [6]

5. (*a*) Explain the light, reflectivity, color and shading in computer graphics. [5]

(*b*) Define Bezier curve. State its properties. Derive blending function of Bezier curve. [8]

Or

6. (*a*) Explain and compare shading algorithms. [6]

(*b*) Describe any *two* hidden face removal algorithm with diagram. [7]

7. (*a*) What is a segment ? Give its structure and also describe various operations carried out on the segment. [7]

(*b*) Write a short note on 3D MaxStudio or Maya. [6]

Or

8. (*a*) Draw block diagram of i860. [6]

(*b*) What is the difference between conventional and computer based animations ? What are the various methods of controlling animation ? [7]