Total No. of Questions—**12**] [Total No. of Printed Pages—**4**

Seat No.	

[4957]-213

S.E. (Information Technology) (II Semester)

EXAMINATION, 2016

COMPUTER GRAPHICS

(2008 Course)

Time : Three Hours **Maximum Marks : 100**

N.B. **:—** (*i*) Answer Q. No. 1 or Q. No. 2, Q. No. 3 or Q. No. 4 or Q.6 from Section I and Q. No. 7 or Q. No. 8, Q. No. 9 or Q. No. 10, Q. No.11 or Q. No. 12 from section II.

(*ii*) Answers to the *two* sections should be written in separate answer-books.

(*iii*) Neat diagrams must be drawn wherever necessary.

(*iv*) Figures to the right indicate full marks.

(*v*) Assume suitable data if necessary.

SECTION-I

1. (*a*) Explain the following [9]

(*i*) Frame Buffer

(*ii*) Joystik

(*iii*) Touch Panel

(*b*) Rasterize the line from (3,3) to (9,7) using DDA line drawing algorithm. [7]

P.T.O.

Or

2. (*a*) Explain the difference between random scan and raster scan. [4]

(*b*) Explain Bresenham circle drawing alogrithm. State advantages and limitations of it. [12]

3. (*a*) Explain the following : [12]

(*i*) 2D Scaling

(*ii*) 2D Shearing

(*iii*) Homogenous coordinate system

(*b*) Explain 3D rotation. [4]

Or

4. (*a*) Explain the following : [8]

(*i*) Even-odd method

(*ii*) Winding number method

(*b*) Explain boundary fill polygon filling method. State its limitations. [8]

5. (*a*) Explain Projection taxonomy. [6]

(*b*) Explain Polygon Surfaces. [6]

(*c*) Explain concept of vanishing point. [6]

Or

6. Write short notes on : [18]

(*i*) Paralled projection with mathematical treatment

(*ii*) Parametric cubic curves

(*iii*) B-Spline Curve

SECTION-II

7. (*a*) Explain the following color model : [12]

(*i*) HSV color model

(*ii*) RGB color model

(*iii*) Conversion from HSV to RGB

(*b*) Explain double buffering [4]

Or

8. (*a*) Explain the following : [8]

(*i*) Morphing process

(*ii*) Types of computer animation

(*b*) Explain different steps used in design of animation sequence. [8]

9. (*a*) Explain Phong shading model in detail. State advantages and limitations of it. [8]

(*b*) Explain different components of local illumination model. Explain different basic light sources. [10]

Or

10. (*a*) Explain ray tracing algorithm [8]

(*b*) Explain the following illumination model : [10]

(*i*) Point source illumination

(*ii*) Diffuse reflection

11. (*a*) Explain features of any Graphics tool that you have studied. [8]

(*b*) Explain use of fractals to generate fractal surfaces. [8]

Or

12. Write short notes on : [16]

(*i*) Hilbert's Curve

(*ii*) Bezier curves

(*iii*) Fractal dimensions and topological dimensions

(*iv*) Monte-Carlo method for rendering