

Total No. of Questions—**12**]

[Total No. of Printed Pages—**3**

<b>Seat No.</b>	
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**[4857]-213**

**S.E. (Information Technology) (II Sem.) EXAMINATION, 2015**

**COMPUTER GRAPHICS**

**(2008 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 100**

- N.B. :—** (i) Answer Q. No. **1** or Q. No. **2**, Q. No. **3** or Q. No. **4**, Q. No. **5**, or Q. No. **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 Bresenham's circle drawing algorithm with example. [12]  
(b) Explain the difference between random scan and raster scan. [4]
- Or*
- 2.** (a) Explain in detail DDA circle drawing algorithm. [10]  
(b) Rasterize the line from (3, 3) to (8, 6) using DDA line drawing algorithm. [6]

P.T.O.

3. (a) Explain in detail homogenous coordinate system. [8]  
(b) Explain 3D rotation. How is it different from 2D rotation? [8]

*Or*

4. (a) Explain any *one* geometric level polygon filling method. [8]  
(b) Explain boundary fill polygon filling method. State its limitations. [8]

5. (a) Explain projection taxonomy. [6]  
(b) Explain parametric cubic curves. [6]  
(c) Explain concept of vanishing point. [6]

*Or*

6. Write short notes on : [18]  
(i) Polygon tables  
(ii) Polygon surfaces  
(iii) B-spline curve.

## SECTION II

7. (a) Explain the following color models. [8]  
(i) HSV color model  
(ii) Color mixing  
(b) Explain raster animations and double buffering. [8]

*Or*

8. (a) Explain types of computer animation and applications of animations. [8]  
(b) Explain different steps used in design of animation sequence. [8]

9. (a) Compare Phong shading model and Gouraud shading model. [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 models : [10]  
(i) Ambient light  
(ii) Diffuse reflection.

11. (a) Explain features of any graphics tool that you have studied. [8]  
(b) What is fractal dimension and topological dimension. [8]

*Or*

12. Write short notes on : [16]  
(i) Hilbert's Curve  
(ii) Bezier Curves  
(iii) Fractal lines and surfaces  
(iv) Monte-Carlo method for rendering.