

Total No. of Questions—12]

[Total No. of Printed Pages—3

Seat No.	
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[4857]-208

**S.E. (Computer) (Second Semester) EXAMINATION, 2015
COMPUTER GRAPHICS
(2008 PATTERN)**

Time : Three Hours

Maximum Marks : 100

- N.B. :—**
- (i) Answer any *three* questions from each Section.
 - (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.

SECTION I

1. (a) Explain Generalised Bresenham's line drawing algorithm with example. [8]
- (b) State different display devices. What is Aspect ratio ? [4]
- (c) Explain various character generation methods. [6]

Or

2. (a) Explain DDA line generation algorithm with example. [8]
 - (b) Explain the features of the following : [6]
 - (i) Scanner
 - (ii) Joystick
 - (iii) Light pen.
 - (c) What is Aliasing and Antialiasing ? [4]
3. (a) Explain Boundary fill and Flood fill method of polygon filling. [8]
 - (b) What is windowing and clipping ? Explain interior and exterior clipping. [8]

P.T.O.

Or

4. (a) Explain different methods for testing pixel inside of outside of polygon. [8]
(b) Explain Cohen-Sutherland outcode algorithm. [8]
5. (a) Explain 2-D rotation and 2-D scaling. [6]
(b) Explain rotation of an object about an arbitrary axis in 3-D. [10]

Or

6. (a) Consider the square P(0, 0), Q(0, 10), R(10, 10), S(10, 0). Rotate the square about fixed point R(10, 10) by an angle 45 degree (anticlockwise). [8]
(b) Explain Parallel projection and its types. [8]

SECTION II

7. (a) What is segment table ? Explain. Also explain various operations on segment. [8]
(b) Define Animation and explain the methods of controlling animation. [8]

Or

8. (a) Write a short note on image transformation with example. [8]
(b) Explain frame by frame animation. [8]
9. (a) Explain painters algorithm with example. [8]
(b) What is scheduler reflection ? Explain Phong model. [8]

Or

- 10.** (a) How does z-buffer algorithm determine ? Which surfaces are hidden ? [8]
(b) Explain RGB and CMY color model. [8]
- 11.** (a) Write a short note on fractal lines and surfaces. State at least *two* applications. [8]
(b) Write a short note on B-splines. Draw necessary diagrams. [8]

Or

- 12.** Write short notes on any *three* of the following : [18]
(i) Curve generation
(ii) Interpolation
(iii) Fractal geometry
(iv) Koch curve.