

Total No. of Questions—8]

[Total No. of Printed Pages—2

Seat No.	
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[5668]-187

SE (Sem. II) (Computer Engineering) EXAMINATION, 2019

COMPUTER GRAPHICS

(2015 PATTERN)

Time : Two Hours

Maximum Marks : 50

N.B. :— (i) Answer Question Nos. 1 or 2 and 3 or 4 and 5 or 6 and 7 or 8.

(ii) Neat diagram must be drawn whenever necessary.

(iii) Figures to the right indicate full marks.

(iv) Assume suitable data, if necessary.

1. (a) What is polygon filling ? Explain Boundary fill algorithm. [6]
(b) Consider a line from (2, 5) to (8, 8). Use Bresenham's line drawing algorithm rasterize this line [6]

Or

2. (a) What is computer graphics ? State the applications of computer graphics. [6]
(b) What is viewing transformation ? [6]

3. (a) Find a transformation of a triangle A(1, 0) B(0, 1) C(1, 1) by translating one unit in x and y directions and then rotating 45° about the origin. [6]

P.T.O.

- (b) Write short notes on (any *two*) : [6]
- (i) CMY color model
 - (ii) Motion specification
 - (iii) Properties of light.

Or

4. (a) Explain in detail rotation of an object about an arbitrary axis in 3D. [6]
- (b) Write algorithms to create a segment and delete a segment. [6]
5. (a) Explain Warnock's and Painter's hidden face removal algorithm. [7]
- (b) Explain difference between Gouraud shading and Phong shading. [6]

Or

6. (a) Explain light sources, ambient light, specular reflection and diffuse reflection. [7]
- (b) Explain Back-face Removal algorithm. [6]
7. (a) Draw block diagram of NVIDIA workstation and explain it in brief. [7]
- (b) What is fractal ? Explain characteristics and classification of fractals. [6]

Or

8. (a) Write short notes on (any *two*) : [7]
- (i) Koch curve
 - (ii) OpenGL
 - (iii) Architecture of i860.
- (b) Differentiate between Bezier curve and B-spline curve. [6]