Seat No.	

[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]

(*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]