

Total No. of Questions—8]

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| Seat<br>No. |  |
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**[5152]-567**

**S.E. (Computer) (II Sem.) EXAMINATION, 2017**

**COMPUTER GRAPHICS**

**(2015 PATTERN)**

**Time : Two Hours**

**Maximum Marks : 50**

**N.B. :—** (i) Neat diagrams must be drawn wherever necessary.

(ii) Assume suitable data, if necessary.

(iii) Attempt Q. No. 1 or Q. No. 2, Q. No. 3 or Q. No. 4,  
Q. No. 5 or Q. No. 6, Q. No. 7 or Q. No. 8.

1. (a) Write and explain Bresenham's line algorithm and find out which pixel would be turned on for the line with end points (3, 2) to (7, 4) using the same. [7]

(b) Explain Scanline Fill algorithm in detail. [5]

*Or*

2. (a) Explain DDA Line drawing algorithm with example. [4]

(b) Explain character generating methods. [2]

(c) Explain Cohen-Sutherland Line clipping algorithm with example. [6]

3. (a) Explain how to perform rotation about an arbitrary axis in 3-D with diagram. [4]

P.T.O.

- (b) Perform scaling on a triangle (1, 1), (8, 1) and (1, 9) with scaling factor of 2 in both  $x$  and  $y$  directions. Find the final coordinates of triangle. [2]
- (c) Explain RGB and HSV color Models. [6]

Or

4. (a) What are the types of projections and brief about each type of projections. [6]
- (b) Explain CIE Chromaticity Diagram. [4]
- (c) What is Animation and Morphing ? [2]

5. (a) Enlist and explain Shading algorithms with their disadvantages. [7]
- (b) Explain Z-buffer and BSP hidden face removal algorithm with their advantage. [6]

Or

6. (a) Explain Warnock's and Painter's hidden face removal algorithm. [6]
- (b) Write short notes on (any two) [7]
- (i) Half Tone
- (ii) Phong Specular Reflection Model
- (iii) Warn Model.

7. (a) Explain Bezier Curve. List its properties. [6]  
(b) What is Fractals ? Explain Triadic (Koch) and Hilbert curve. [7]

Or

8. (a) Draw block diagram of NVIDIA workstation and brief about it [4]  
(b) Write short notes on : [9]  
(i) OpenGL  
(ii) i380  
(iii) B-spline Curve.