

Seat No.	
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[5252]-567**S.E. (Computer Engg.) (Second Semester) EXAMINATION, 2017****COMPUTER GRAPHICS****(2015 PATTERN)****Time : 2 Hours****Maximum Marks : 50****N.B. :—** (i) Neat diagrams must be drawn wherever necessary.

(ii) Assume suitable data, if necessary.

(iii) Attempt Q. 1 or Q. 2, Q. 3 or Q. 4, Q. 5 or Q. 6 and
Q. 7 or Q. 8.**1. (a)** Explain the following terms with examples (any three) : [6]

- (1) Display file structure
- (2) Winding Method
- (3) Polygon filling with pattern
- (4) Generalised Clipping.

(b) Explain Bresenham algorithm for line drawing. Write advantages and disadvantages of it over DDA line drawing algorithm. [6]

*Or***2. (a)** Explain Sutherland-Hodgeman algorithm for polygon clipping. Compare it Cohen-Sutherland Clipping. [6]

(b) Write Bresenham circle drawing algorithm. Also explain mathematical foundation of it. [6]

P.T.O.

3. (a) Explain the following terms with examples : [4]
(1) Color gamut
(2) Key-frame
(3) Animation
(4) Morphing.
- (b) Explain 3D clipping with example. [4]
- (c) For origin centered unit square, rotate 45° clockwise, scale by a factor 2 in x -direction. Find resultant coordinates of square (write required matrices). [4]

Or

4. (a) Describe segment and explain any *three* operations carried out on it. [4]
- (b) Explain rotation about an arbitrary point in 2D. [4]
- (c) Explain 3D viewing transformation. [4]

5. (a) Explain Backface Detection and removal. [4]
- (b) Explain and compare point source and diffuse illumination. [5]
- (c) Explain Phong Shading Algorithm. [4]

Or

6. (a) Explain Binary Space Partitioning Algorithm with example. [5]
- (b) Explain Gouraud Shading algorithm. [4]
- (c) Write a note on Phong Reflection Model. [4]

7. (a) Explain blending function for B-spline curve. [4]
(b) Explain architecture of i860. [4]
(c) What is OpenGL ? Write *four* important features of the same.
Write any *two* 3D transformation functions of OpenGL. [5]

Or

8. (a) Write any *four* important features of NVIDIA gaming platform.
Explain need of NVIDIA workstation in gaming [5]
(b) Explain Hilbert curve with example. [4]
(c) Explain Koch curve with example. [4]

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