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Total No. of Questions : 09]

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B. Tech. (Sem. - 5th)

COMPUTER GRAPHICS

SUBJECT CODE : CS - 309

Paper ID : [A0468]

[Note : Please fill subject code and paper ID on OMR]

Time : 03 Hours

Maximum Marks : 60

Instruction to Candidates:

1) Section - A is **Compulsory**.
2) Attempt any **Four** questions from Section - B.
3) Attempt any **Two** questions from Section - C.

## Section - A

1) *(10 × 2 = 20)*

a) What is the advantage of interlaced refresh procedure in the raster scan displays?

b) What is the use of data gloves and digitizers in computer graphics applications?

c) What is the basic principle of Bresenham's line drawing algorithm and what are its advantages over DDA line drawing algorithm?

d) What is the difference between boundary fill and flood fill area filling algorithms?

e) What are the homogeneous coordinates and how these are useful for geometric transformations?

f) What are the diffuse and specular reflections?

g) What are the principle vanishing points in projections?

h) What is Ray Tracing method for surface rendering?

i) Define resolution and aspect ratio of a display device.

j) What are the viewing transformations?

## Section - B

*(4 × 5 = 20)*

*Q2)* What is the difference between raster and random scan displays? Discuss the different display devices used for computer graphics applications.

*Q3)* Discuss the Mid-Point circle generation algorithm in detail. Compare this with other circle generation algorithms.

*Q4)* Discuss the scan line method for visible surface detection.

*Q5)* What is the difference between parallel and perspective projections? Discuss each in detail.

*Q6)* Write short note on B-Spline curves.

## Section - C

*(2 × 10 = 20)*

*Q7)* What are the geometric transformations and how these are useful in computer graphics applications? Discuss the different geometric transformations in detail.

*Q8)* Explain the Cohen-Sutherland algorithm for line clipping in detail.

*Q9)* What do you mean by polygon surface rendering? Discuss the different surface rendering methods used in computer graphics.