

7. Explain the following :

- (a) Illumination Models
- (b) Hermite Curve

8. (a) What is meant by viewing pipeline ? Illustrate.

- (b) What is general projection transform ? How is it significant ? Illustrate.

9. Explain the following :

- (a) 3D Reflection
- (b) 3D Composite Transformations

Roll No.

97678

**BCA 5th Semester (Re-appear)
Examination – October, 2020**

COMPUTER GRAPHICS

Paper : BCA-302

Time : 1.45 Hours]

[Maximum Marks : 80

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt any *three* questions. All questions carry equal marks.

1. (a) What is 2D viewing transformation ?

(b) What is quadric surface ?

(c) What is 3D shearing ?

(d) What is interactive computer graphics ? State its relevance.

- (e) What are viewing coordinates ? Illustrate.
 - (f) What is random scan system ?
 - (g) Why Bresenham's line algorithm is preferred over DDA line algorithm ?
 - (h) What is meant by coordinate systems transformation ?
2. (a) What is flood-fill algorithm ? What is its relevance ? Illustrate.
- (b) What steps are required to plot a line whose slope is between 0 and 30° using Bresenham's method ? Indicate which raster locations would be chosen by Bresenham's algorithm when scan-converting a line from screen coordinate $(1,3)$ to screen coordinate $(6,11)$.
3. Explain the following :
- (a) Ellipse algorithm
 - (b) Plasma Displays

4. (a) Find the normalization transformation that maps a window whose lower left corner is at $(2,3)$ and upper right corner is at $(7,10)$ onto :
- (i) A viewport that is the entire normalized device screen and
 - (ii) A viewport that has lower left corner at $(0,0)$ and upper right corner $(\frac{1}{2}, \frac{1}{2})$.
- (b) What is Cyrus-beck Line Clipping algorithm ? Illustrate through a suitable example.
5. Explain the following :
- (a) Sutherland-Hodgeman polygon clipping algorithm
 - (b) 2D Shearing Transformation
6. (a) What are Bezier surfaces ? How are these represented ? Illustrate their relevance in graphics.
- (b) What are polygon-rendering methods ? Which method is most popular ? Justify your answer.