

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

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**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

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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.

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P. T. O.