PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2024
(Fourth Semester)

Branch – COMPUTER SCIENCE

COMPUTER GRAPHICS

Time: Three Hours Maximum: 50 Marks

SECTION-A (5 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (5 x 1 = 5)

1 Which of the following is NOT typically considered an input device for computer graphics?
(i) Graphics Tablet (ii) Printer
(iii) Mouse (iv) Touchscreen

2 Which basic transformation involves changing the size of an object without changing its shape?
(i) Translation (ii) Rotation
(iii) Scaling (iv) Shearing

3 Which term refers to the process of mapping coordinates from a virtual window to view-port coordinates?
(i) Scaling (ii) Clipping
(iii) Coordinate Transformation (iv) Viewport Adjustment

4 Which of the following is used to represent the apparent depth in a 3D scene?
(i) Texture mapping (ii) Depth cueing
(iii) Bezier curves (iv) Wireframe modeling

5 What does the HSV color model stand for and represent?
(i) Hue, Saturation, Value; used in printing
(ii)Cyan, Magenta, Yellow; used in digital displays
(iii)Hue, Lightness, Saturation; used for brightness adjustments
(iv)Red, Green, Blue; used in 3D modeling

SECTION - B (15 Marks)
Answer **ALL** Questions
ALL Questions Carry **EQUAL** Marks (5 x 3 = 15)

6 a What are some common types of flat panel displays, and what are the advantages of using them in modern computing?

OR

b What is Bresenham's Line Algorithm, and why is it commonly used in computer graphics?

7 a What is the importance of character attributes in computer graphics?

OR

b What are some examples of other transformations in computer graphics?

8 a Define two-dimensional viewing in computer graphics and explain its primary purpose.

OR

b What are the challenges involved in curve clipping compared to line clipping?

Cont...

9 a Explain the concept of 3d-Scalling in three-dimensional display methods.

OR

b Discuss the significance of Depth Cueing.

10 a Which type of projection simulates depth and perspective by converging lines toward a vanishing point?

OR

b What is the purpose of the conversion between HSV and RGB color models?

SECTION -C (30 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 x 6 = 30)

11 a Explain the concept of refresh rate in the context of video display devices, and why is it important?

OR

b How do Midpoint Circle Algorithm and Bresenham's Circle Algorithm differ in terms of drawing circles on a computer screen?

12 a Explain the significance of line attributes, curve attributes, and character attributes in computer graphics.

OR

b Explain the concept of matrix representations in two-dimensional geometric transformations.

13 a Explain the concept of two-dimensional viewing in computer graphics.

OR

b Explain the concept of text clipping in computer graphics. Why is it important in rendering text on screens?

14 a Explain the fundamental concepts and techniques involved in three-dimensional concepts.

OR

b Discuss their characteristics and applications in Bezier curves as methods for representing three-dimensional objects.

15 a Explain the concept of the viewing pipeline in computer graphics.

OR

b Explore the conversion between the HSV and RGB color models.

Z-Z-Z END