Graphic Era
HILL UNIVERSITY

Mid Term (Even) Semester Examination May 2025

Roll no.....

Name of the Course and semester: MCA 4th Semester
Name of the Paper: Advanced Graphics and Visual Computing
Paper Code: TMC 403(2)
Time: 1.5 hour Maximum Marks: 50

Note:

(i) Answer all the questions by choosing any one of the sub questions
(ii) Each question carries 10 marks.
(iii) Please specify COs against each question.

Q1. (10 Marks)

a. Write down the necessary steps for DDA line Algorithm. [CO1]

OR

b. Write down the necessary steps for Bresenham's line algorithm. [CO1]

Q2. (10 Marks)

a. Differentiate 2D Rotation and 2D Scaling with the help of matrix representations. [CO1]

OR

b. Given a 3D object with coordinate points A (0, 3, 1), B (3, 3, 2), C (3, 0, 0), D (0, 0, 0). Apply the translation with the distance 1 towards X axis, 1 towards Y axis and 2 towards Z axis and obtain the new coordinates of the object. [CO1]

Q3. (10 Marks)

a. Explain Shearing Transformation with the help of matrix in details. [CO1]

OR

b. Design and implement the Flood-Fill Algorithm in C Programming. [CO2]

Q4. (10 Marks)

a. Windowport is given by (100, 100, 300, 300) and viewport is given by (50, 50, 150, 150). Convert the Windowport co-ordinates (200, 200) to the viewport co-ordinates? [CO2]

OR

b. Write down the necessary steps for Cohen Sutherland line clipping Algorithm. [CO2]

Q5. (10 Marks)

a. Differentiate all types of Perspective projection in details. [CO2]

OR

b. Differentiate orthographic & oblique projection. [CO2]