Graphic Era
HILL UNIVERSITY
Established by an Act of the State Legislature of Uttarakhand (Act No. 13 of 2011)
University under section 2(f) of UGC Act, 1956

Term Evaluation (Even) Semester Examination March 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 the Bresenham's line Algorithm. **[CO1]**
OR
b. Design a program in C for Bresenham's Circle algorithm. **[CO1]**

Q2. (10 Marks)
a. Explain 3D Translation with the help of matrix representations. **[CO1]**
OR
b. Perform a 45-degree rotation of a triangle A (0, 0), B (1, 1) and C (5, 2).
(i) About the origin
(ii) About the point p (-1, -1) **[CO1]**

Q3. (10 Marks)
a. Explain Composite Transformation with the help of matrix in details **[CO1]**
OR
b. Design and implement the Boundary-Fill Algorithm in C Programming. **[CO2]**

Q4. (10 Marks)
a. Define line clipping? Design a program in C for Liang Barsky Algorithm. **[CO2]**
OR
b. Write down the necessary steps for Cohen Sutherland Algorithm. **[CO2]**

Q5. (10 Marks)
a. Explain Parallel & Perspective projection. **[CO2]**
OR
b. Define projection? Differentiate Orthographic projections, Perspective projections and Stereographic projections in details. **[CO2]**