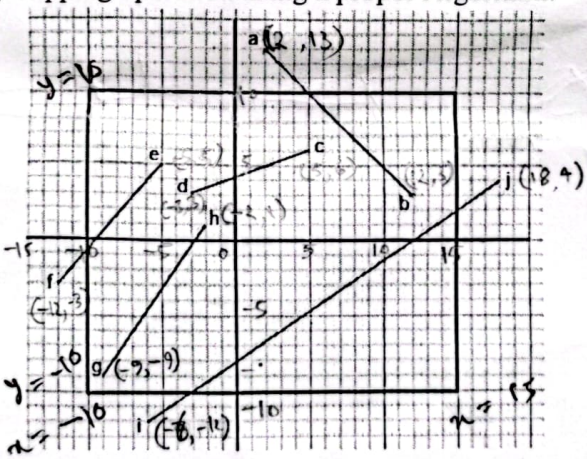
Daffodil International University

Faculty of Science & Information Technology
Department of Computer Science and Engineering
Final Examination, Spring 2025
Course Code: CSE421, Course Title: Computer Graphics
Level: 4 Term: 1 Batch: 60th Batch

Time: 02:00 Hours **Marks: 40**

Answer ALL Questions

[The figures in the right margin indicate the full marks and corresponding course outcomes. All portions of each question must be answered sequentially.]

1.	***a)***	State the differences between additive and subtractive color models and one practical use of the subtractive color model.	**[3]**	**CO1**
	b)	An animation studio is facing jagged edges in its 3D-rendered scenes, making the visuals look less realistic. They want to smooth edges but are unsure how to do so. Explain different techniques to reduce jagged edges, including their benefits and drawbacks.	**[5]**	
2.		In the following Figure: 1, the rectangle box depicts a clipping window and the black lines depict the axes. Now, find out the categories of each line and **apply** clipping operation using a proper Algorithm.  **Figure: 1**	**[8]**	**CO3**
3.		**Analyze** the following Figure: 2 a) Identify the coordinates of each point. b) Scale the object where all the scaling factor's value is 5. c) Share the object in y-axis with 7. Note: Consider each point as an integer number	**[8]**	**CO2**

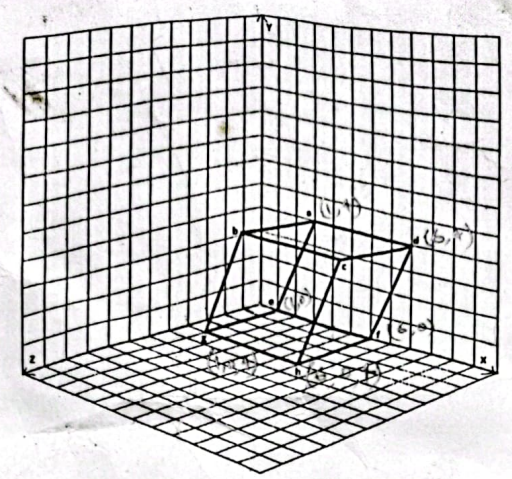


Figure: 2

4		In the following Figure 3: C1C2C3C4 is the clipping window, and ABCDEFGHIJK is the subject polygon Now **apply** Sutherland Hodgman Polygon Clipping Algorithm for constructing the clipped polygon. Show all the steps.	[8]	CO3

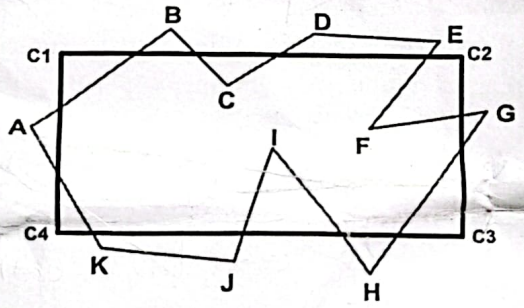


Figure: 3

5		In the following Figure: 4, **P1P2P3P4P5P6P7P8P9P10P11P12P13P14** is the clipping window and **abcdefghijk** is the Subject polygon. Now **apply** a Weiler Atherton Polygon Clipping Algorithm for constructing the clipped polygon. Show all the steps.	[8]	CO3

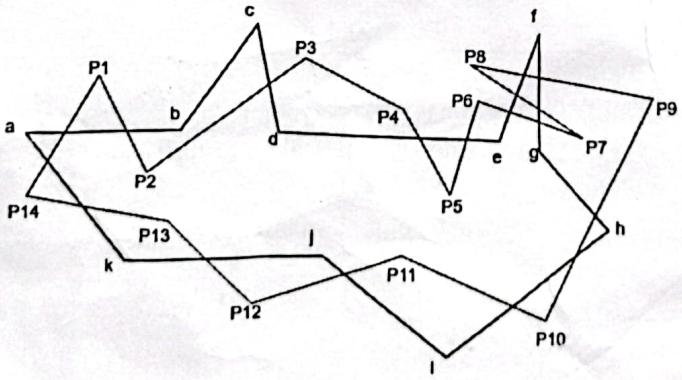


Figure: 4