



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 - Identify the coordinates of each point. - Scale the object where all the scaling factor's value is 5. - Share the object in y-axis with 7. Note: Consider each point as an integer number	[8]	CO2

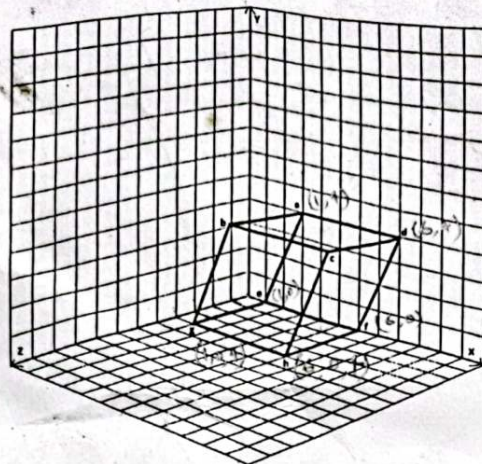


Figure: 2

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

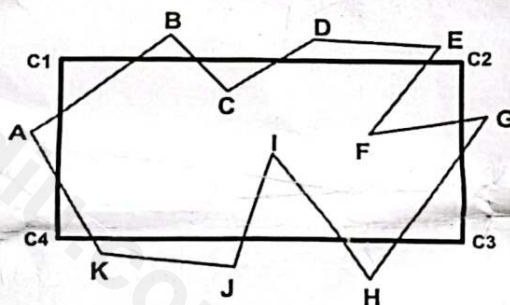


Figure: 3

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

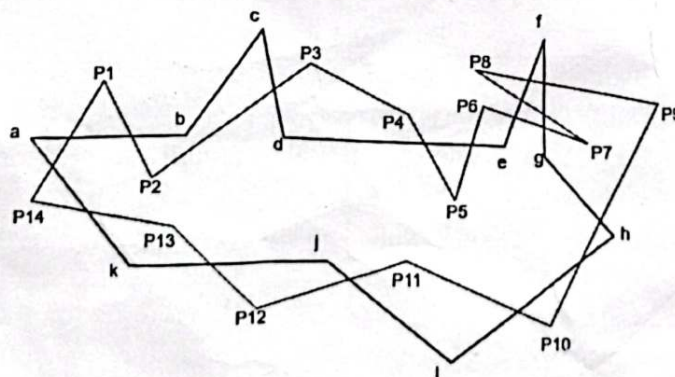


Figure: 4