Roll No……..

**Dr B R Ambedkar National Institute of Technology, Jalandhar**

B Tech (Computer Science & Engineering)

**CSX – 308, Computer Graphics and Animation**

**End Semester Examination**

Duration: 1.5 Hour  Max. Marks: 30  Date: 22nd July 2020

| **Marks Distribution & Mapping of Questions with Course Outcomes (COs)** | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Question Number | 1A | 1B | 2 | 3A | 3B | 4A | 4B | 5A | 5B | | |
| Marks | 3 | 3 | 6 | 3 | 3 | 3 | 3 | 3 | 3 | | |
| CO No. | 4 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | | |
| Learning Level | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | |

**Note:**

1. Attempt all the questions.
2. Write the answers in hard copy (on A4 or any other sheet available) using blue/black pen with their sign on top and bottom of each page. Also put page numbers on upper right corner of each page of the answer booklet.
3. The time allowed for writing examination is 90 minutes. Extra 20 minutes are allowed for scanning and sending the answer booklet.
4. Follow the instructions regarding submission of answer booklet as issued by examination section.

Q1 A. What is the basis for Initial Ordering of Polygons in case of Depth Sort VSD Algorithm? When Ordering among two Polygons need to be changed? (3)

B. Use Liang-Barsky line clipping algorithms to find the visible portion of the line $P_1(0,10) – P_2(30,30)$ against the window having diagonally opposite corners as (5,0) and (15,15). (3)

Q2 How Regions are assigned a 4 bit code in Cohen Sutherland Line Clipping Algorithm? Write bit codes for each Regions. How we can find whether a Line is Visible, Invisible, Partially Visible? What are the various alternative methods which can be employed to find visible reason of line in case of Partially Visible Lines? (6)

Q3 A. How Visible Region is determined in Liang Barsky Line Clipping Algorithm? (3)

B. Differentiate between Windowing and Viewing Transformations. Write the formulae for finding the Screen Coordinates of a point given its World Coordinates. (3)

Q4 A. What are the two objectives in case of Projections? Can these be achieved together? With what Projections these be achieve? Explain them. (3)

B. Differentiate between Axonometric and Orthographic Projections. Write various types for both of them. (3)

Q5 A. What is a Polygonal Net? Differentiate between Explicit Vertex and Explicit Edge Listing. (3)

B. How Degree of Polynomial is determined For B-Spline Curve? Write about Versatility and Order of Continuity of B Spline Curve. (3)