CSC209-2082(Old) ✡

Exam Roll No.....

Tribhuvan University

Institute of Science and Technology

2082

✡

Bachelor Level / Second Year/ Third Semester/ Science

Computer Science and Information Technology (CSC 209)

(Computer Graphics)

(OLD COURSE)

Full Marks: 60
Pass Marks: 24
Time: 3 hours.

Candidates are required to give their answers in their own words as for as practicable.
The figures in the margin indicate full marks.

Section A

Attempt any TWO questions. **(2 × 10 = 20)**

1. Write down the procedure of Liang Barsky line clipping algorithm. Use this algorithm to clip the line AB where A=(-5, 3) and B=(15, 9) against the window lower left corner at(0,0) and upper right corner at (10,10). [5 + 5]

2. Derive the Bresenham's line drawing algorithm (BSA). Digitize the line with end points (2, 3) and (3, 8) using BSA algorithm. [5+5]

3. What do you mean by illumination models and Surface rendering? Explain Gourard shading method of surface rendering in detail. [4 + 6]

Section B

Attempt any EIGHT questions. **(8 × 5 = 40)**

4. List some color commands in open GL. How do you draw a pixel and lines? [2.5+2.5]

5. What is Bezier Curve? Write down the properties of Bezier Curve. [1+4]

6. Differentiate between flood fill and boundary fill algorithm. [5]

7. What is Virtual Reality? What are the different components of virtual reality? [1 + 4]

8. What is projection? Write down type parallel projection? Derive the transformation matrix for oblique parallel projection. [1 + 4]

9. What do mean by hidden surface removal? Explain Z-buffer method for hidden surface removal. [1 + 4]

10. Plot the ellipse centered at (0,0) with radius rx=8 and ry=6 using midpoint ellipse drawing algorithm. [5]

11. Reflect a line segment having end points (9,3) and (12,10) about a line X = 7. Draw initial and final result graph as well. [5]

12. Write Short Notes: [2x2.5=5]
    a) Intensity Attenuation
    b) BSP Tree