

**Tribhuvan University
Institute of Science and Technology**

2073

Bachelor Level/ First Year/ First Semester/ Science
Computer Science and Information Technology (CSc. 254)
(Computer Graphics)

Full Marks: 60
Pass Marks: 24

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

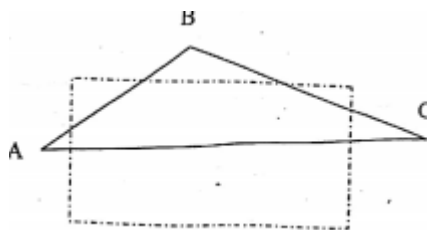
Attempt all the questions.

1. Explain the random scan display with its architecture.
2. Derive an equation to draw a line using DDA algorithm when slope is greater than 1.
3. Derive the expression for Bresenham Line Drawing Application.
4. How can you draw circle using mid-point circle algorithm? Explain with algorithm.
5. Explain the scan line algorithm for solving hidden surfaces.
6. Explain the following term with practical application.
 - a) 2D rotation
 - b) Computer Animation
7. Derive the window to viewport transformation coefficient matrix. Explain the application of this matrix.

OR

What are blobby objects? How is it represented? Explain the wire frame representation of 3D objects

8. Calculate the total memory required to store a 10 min video in a SVGA system with 24 bit true color and 25 fps.
9. Explain polygon clipping in detail. By using the Sutherland- Hodgeman Polygon clipping algorithm clip the following polygon.



10. What is virtual reality? Explain the importance of virtual reality and its application.