

**Tribhuvan University
Institute of Science and Technology**

2068

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. What is a raster scan display system? Draw a block diagram and explain it in detail.
2. How can you represent 3D viewing? Explain it with equation and practical application.
3. Explain the following terms with practical application.
 - (a) 3D Translation
 - (b) 2D Mirror
4. Where do you require ellipse clipping algorithm? Explain in detail about ellipse clipping algorithm.
5. How can you draw a circle? Explain it with algorithm.
6. Explain in detail about polygon table. How can you apply in the case of virtual reality?
7. What do you mean by solid modeling? Explain the process for solid modeling with example.
8. Hidden surface removal required in computer graphics is very important, justify it. Explain details about scan line method.

OR

Explain in detail about scan line method. Justify that it is better than plane equation method.

9. Consider 1024 pixels X 1024 pixels scan lines image with 24-bit true color. If 10minutes video is required to capture, calculate the total memory required? How can you incorporate shadow in the computer graphics?
10. Difference between diffuse reflection and specular reflection. Why do we require shading model? Explain it.

OR

Explain in detail about Phong shading model. Compare it with Gouraud Shading model.