Tribhuvan University
Institute of Science and Technology

2067

Bachelor Level/ First Year/ First Semester/ Science — Full Marks: 60
Computer Science and Information Technology (CSc. 254) — Pass Marks: 24
(Computer Graphics)

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

Attempt all the questions.

1. What is a random scan display system? Draw its block diagram and explain it in detail.
2. What do you mean by homogeneous coordinates? Explain it with equation and practical application.
3. Explain the following terms with practical applications.
   a) 3D Mirror
   b) 2D Rotation
4. Explain in detail about circle clipping algorithm. Where do you require circle clipping algorithm?
5. How can you draw circle? Explain with algorithm.
6. Explain in detail about polygon table. How can you apply in the case of computer animation?
7. What is a polygon mesh? Explain the application of polygon mesh with example.
8. Justify that hidden surface removal is required in computer graphics. Explain in detail about depth buffer method.

   OR

   Explain in detail about scan line method. Just that it is better than depth buffer method.
9. Consider 256 pixels X 512 scan lines image with 24-bit true color. If 20 minutes video is required to capture, calculate the total memory required? What is the color intensity model?
10. Explain in detail about Phong shading. How can you modify Phong shading model?

    OR

    Explain in detail about Gourand shading model. Compare it with Phong shading model.