

POKHARA UNIVERSITY

Level: Bachelor Semester – Fall Year : 2005
Programme: BE Full Marks: 100
Course: Computer Graphics Time : 3hrs.

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. a) What is computer graphics? How can computer graphics be used in education to remove illiteracy and computer awareness in contexts of Nepal. 7
- b) What are the techniques used for producing color displays? Explain with necessary diagram. 8
2. a) Derive the mid point ellipse algorithm. 10
- b) Trace the coordinates in the first quadrant of a circle with radius 7 using midpoint circle algorithm. 5
3. a) Explain in brief about following: 3×3
 - i. 2D Scaling
 - ii. 2D Mirror
 - iii. 2D Shearing
- b) Rotate the triangle A (2, 3), B (5, 3) and C (3, 1) about a fixed point (1, 2) by 30° . 6
4. a) What are the major issues to be taken care of for 3D graphics? How does it differ from 2D graphics? 7
- b) Explain 3D viewing pipeline. 8
5. a) Derive the equation for transformation of an object about an arbitrary axis in 3-dimensional space. 8
- b) Why is it necessary to remove the hidden surface? Explain one of the image space approaches for visible surface detection. 7
6. a) Why illumination model is important in computer graphics? Explain about diffuse reflection. 8
- b) What are the steps to be followed for project development? Explain. 7

7. ***Write short notes on (Any Two)***

2×5

- a) Proof of "Two successive scaling are multiplicative".
- b) Graphics standards
- c) Phong shading
- d) Polygon table.