



# **Computer Graphics**

DEC 17

Computer Engineering (Semester 4)

**Total marks: 80**

**Total time: 3 Hours**

## *INSTRUCTIONS*

*(1) Question 1 is compulsory.*

*(2) Attempt any **three** from the remaining questions.*

*(3) Draw neat diagrams wherever necessary.*

Q1

a) What is antialiasing? Explain any one method of antialiasing. (5 marks)

b) Define shearing and give example. (5 marks)

c) Derive the transformation matrix for fixed point scaling. (5 marks)

d) Explain inside outside test used in filling algorithm. (5 marks)

Q2

a) Explain the Midpoint circle generation algorithm. (10 marks)

b) Discuss all the steps used in reflection of an object about an arbitrary line with one example. (10 marks)



Q3 a) Explain the Cohen-Sutherland line clipping algorithm with suitable example. (10 marks)

b) Explain any one polygon clipping algorithm. (10 marks)

Q4 a) Define window, viewport and derive window to viewport transformation. (10 marks)

b) discuss parallel and perspective projections. (10 marks)

Q5 a) Discuss Bezier curve with its properties. (10 marks)

b) Explain Gouraud and Phong shading along with their advantages and disadvantages. (10 marks)

Q6 Write a short note on any two of the following

a) 3-D representation methods (5 marks)

b) Area Subdivision method. (5 marks)

c) Fractals (5 marks)