

Time: 3 Hours

Total Marks 80

- N.B:** 1) Question number 1 is compulsory.
 2) Attempt **any three** out of the remaining.
 3) Assume suitable data if **necessary** and justify the assumptions.
 4) Figures to the **right** indicate full marks.

1. Attempt any **FOUR**.
 - a) What is rasterization? Explain with neat diagram [05]
 - b) Describe what is Homogeneous coordinates [05]
 - c) Give properties of Bezier Curve. [05]
 - d) Derive initial value for mid-point ellipse [05]
 - e) Define Aliasing, what is anti-aliasing? Give different antialiasing techniques [05]
- 2 a) Given a line AB where A(0,0) and B(5,2) calculate all the points on the line using BRESENHAM line algorithm [10]
- b) Derive formulas for Mid-point Circle algorithm [10]
- 3 a) What is Composite transformation? Derive a composite matrix for rotation at fix point P. [10]
- b) Explain shear transformation. Given a rectangle ABCD where A(0,0), B(0,10), C(10,10) and D(10,0) apply X-shear of 1 unit and compute new coordinate of rectangle ABCD. Apply Y-shear of 1 unit and compute new coordinate of rectangle ABCD. [10]
- 4 a) Give Liang Barsky Line clipping algorithm. [10]
- b) Explain Sutherland Hodgman polygon clipping algorithm [10]
- 5 a) With neat diagram explain Planer projection geometry. [10]
- b) Explain different traditional animation techniques. [10]
- 6 a) Describe with neat diagram Area Subdivision method [10]
- b) Describe with neat diagram Depth Buffer Method [10]
