B.E. | COMP | Sem-III | 'C' Scheme | Sub:- CG | Date:- 24/11/25 | S.H. 2025
QR. Code:- 10095544

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]

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