(Time: 3 Hours) **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.

Q 1

A	What is computer graphics and discuss its representative uses	**[5]**
B	Explain traditional animation techniques	**[5]**
C	Describe homogeneous coordinate system	**[5]**
D	Explain point clipping method with suitable example	**[5]**

Q 2

A	Given a triangle ABC with coordinates A (0, 0), B (10, 0), C(0,10). Apply following transformations in sequence i. Translate the triangle by translation parameters (20, 30) units. ii. Rotate the triangle by 90^0 . Fine the new coordinates of the triangle.	**[10]**
B	Explain Cohen Sutherland line clipping method with suitable example	**[10]**

Q 3

A	Derive midpoint ellipse drawing algorithm with suitable diagrams	**[10]**
B	Discuss principles of animation.	**[10]**

Q 4

A	What is window and viewport. Derive the transformation matrix for a window-to-viewport transformation	**[10]**
B	Explain and write matrices for 3D rotation about X, Y and Z axes.	**[10]**

Q 5

A	What is aliasing effect? Explain antialiasing techniques	**[10]**
B	Calculate all the points on the line from point A(0,0) to point B(8,10) using DDA line drawing method.	**[10]**

Q 6

A	Derive the 2D transformation matrix for scaling with respect to fix point.	**[10]**
B	Explain depth buffer method with suitable diagrams	**[10]**

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