

Nov – Dec 2023

Program: B. Tech. Scheme: IIB | π

Examination: SY Semester: III

Course Code: CEC305 and Course Name: Computer Graphics

Date of Exam: 9/12/2023

Duration: 2.5 Hours

Max. Marks: 60

Instructions:

- (1) All questions are compulsory.
- (2) Draw neat diagrams wherever applicable.
- (3) Assume suitable data, if necessary.

		Max. Marks	CO	BT level
Q 1	Solve any six questions out of eight:	12		
i)	Define following terms i) Scan Conversion ii) Vertical Retrace	2	1	R
ii)	What are the advantages and disadvantages of DDA line Algorithm	2	2	U
iii)	Explain any two aliasing effect	2	2	U
iv)	Describe composite transformation	2	3	U
v)	How region codes are assigned in the Cohen Sutherland line clipping algorithm	2	4	U
vi)	Write 3D object rotation matrix representation along X axis and Y axis	2	5	U
vii)	What is the need of projection in display of 3D object	2	5	U
viii)	Explain types of visible surface detection algorithms	2	6	U
Q.2	Solve any four questions out of six.	16		
i)	Describe Raster Scan Display along with its advantages and disadvantages	4	1	U
ii)	Calculate the pixel positions along a line between (1,1) to (8,5) using DDA line Algorithm.	4	2	AP
iii)	Rotate a point (3,2) by i) 90° about the origin in counter clockwise ii) 90° anticlockwise direction with respect to B(1,2)	4	3	AP
iv)	Derive 2 D Window to Viewport Transformation	4	4	AP

K. J. Somaiya Institute of Technology, Sion, Mumbai-22
(Autonomous College Affiliated to University of Mumbai)

Nov – Dec 2023

Program: B. Tech. Scheme: IIB

Examination: SY Semester: III

Course Code: CEC305 and Course Name: Computer Graphics

Date of Exam: 9/12/2023

Duration: 2.5, Hours

Max. Marks: 60

v)	Rotate a triangle ABC with vertices A(2,2,2), B(3,4,7) and C(8,9,12) about Y axis in anticlockwise direction by 60°	4	5	AP
vi)	Write short notes on Key framing	4	6	U
Q.3	Solve any two questions out of three.	16		
i)	Derive Bresenham's line drawing algorithm	8	2	AP
ii)	Perform reflection steps of a 2D object about any arbitrary axis given by the line $y=mx+b$	8	3	AP
iii)	Using Cohen Sutherland line clipping algorithm, find the visible portion of line segment A(10,10), B(70,40) against the clipping window (20,20) and (40,50)	8	4	AP
Q.4	Solve any two questions out of three.	16		
i)	Describe parallel and perspective projection and its types	8	5	U
ii)	Justify why Flood fill algorithm is better than boundary fill algorithm with procedure and example.	8	2	AP
iii)	Explain in detail Back face detection algorithm used to remove hidden surfaces with example.	8	6	AP
