

CBCS SCHEME

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BCG402

Fourth Semester B.E./B.Tech. Degree Examination, June/July 2025

Computer Graphics and Visualization

Time: 3 hrs.

Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.

2. M: Marks, L: Bloom's level, C: Course outcomes.

Module – 1			M	L	C
Q.1	a.	What is computer graphics? Explain applications of computer graphics with examples.	10	L2	CO1
	b.	Explain coordinate reference frames in Open GL.	10	L2	CO1
OR					
Q.2	a.	With necessary steps explain Bresenham's line drawing algorithm. Consider the line from (6, 6) to (12, 8). Use the algorithm to rasterize the line.	10	L3	CO1
	b.	Explain the versions graphics functions with examples. (any five).	10	L2	CO1
Module – 2					
Q.3	a.	What is the need of homogenous coordinate system? Explain translation, rotation and scaling in 2D homogenous coordinate system with matrix representation.	10	L2	CO2
	b.	Develop OpenGL program to create and rotate cube.	10	L1	CO2
OR					
Q.4	a.	Illustrate the raster method for geometric transformation.	10	L2	CO2
	b.	List and explain all 3-D geometric transformation.	10	L2	CO2
Module – 3					
Q.5	a.	Explain any five input device used for logical classification.	10	L2	CO3
	b.	Explain traditional animation technique in details with example.	10	L2	CO3
OR					
Q.6	a.	Explain any five different ways of designing graphical user interface.	10	L2	CO3
	b.	Explain character animation and periodic motions in detail.	10	L2	CO3
Module – 4					
Q.7	a.	Explain clipping window and view port transformations with an example.	10	L2	CO4
	b.	Explain Cohen - Sutherland algorithm with example and neat diagram.	10	L3	CO4
OR					
Q.8	a.	Differentiate between color models: RGB and CMY.	10	L2	CO4
	b.	Explain illumination models: (i) Ambient light. (ii) Diffuse Reflection.	10	L3	CO4
Module – 5					
Q.9	a.	Explain the concept of hidden surface removal.	10	L2	CO5
	b.	Explain open GL 3D viewing functions (any five).	10	L3	CO5
OR					
Q.10	a.	Explain orthogonal projections with help of 3D viewing.	10	L2	CO5
	b.	Explain Depth Buffer method with algorithm.	10	L2	CO5
