GUJARAT TECHNOLOGICAL UNIVERSITY
BE- SEMESTER–V (NEW) EXAMINATION – WINTER 2020

Subject Code:3151607   **Date:27/01/2021**
Subject Name:Computer Graphics and Visualization
Time:10:30 AM TO 12:30 PM   **Total Marks: 56**

Instructions:
1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

			MARKS
Q.1	(a)	List the application of computer graphics.	03
	(b)	Explain the physical and synthetic images.	04
	(c)	Discuss the graphics pipeline architecture with the help of a functional schematic diagram.	07
Q.2	(a)	What is primitive and attribute functions in open GL?	03
	(b)	With the help of a diagram, describe the open GL interface.	04
	(c)	Explain RGB color model and indexed color model.	07
Q.3	(a)	Define following terms: Translation. Rotation, Scaling	03
	(b)	Explain Picking operation in open GL with an example.	04
	(c)	Explain affine transformations.	07
Q.4	(a)	What is concatenation transformation?	03
	(b)	Describe any two types of light sources.	04
	(c)	Explain hidden-surface algorithms with example.	07
Q.5	(a)	Explain 3 basic elements for viewing.	03
	(b)	Explain perspective projective transformations.	04
	(c)	Explain and write Liang Bersky line clipping algorithm.	07
Q.6	(a)	What is a need of homogeneous coordinates?	03
	(b)	Explain parallel projective transformations	04
	(c)	Explain marching squares algorithm.	07
Q.7	(a)	What is 3D clipping?	03
	(b)	Explain Rasterization in details.	04
	(c)	List advantages of B-spline over Bazier splines. Explain B-spline curves.	07
Q.8	(a)	List the properties of Bezier curves.	03
	(b)	Explain Z Buffer Algorithm.	04
	(c)	Explain the Bresenham's algorithm with all necessary derivations.	07