Paper / Subject Code: 32409 / Elective - I Computer Graphics & Virtual Reality

(3 Hours)   **[Total Marks: 80]**

NB :   1) **Question 1** is **compulsory**.
         2) Attempt any **three** questions from the **remaining** questions.
         3) **Assume** suitable **data** wherever applicable.
         4) **Draw figures** wherever applicable.

1	(a)	Explain different applications of computer graphics.	5
	(b)	Explain different types of virtual reality systems.	5
	(c)	Prove that two successive rotation are additive.	5
	(d)	Explain fractals	5
2	(a)	Explain Virtual reality architecture.	10
	(b)	Explain Bresenham's line drawing algorithm. Explain how it is different from DDA	10
3	(a)	Find the Bézier curve given 4 control points (25,25), (45,40), (60,45) and (90,10) using the step size as 0.1.	10
	(b)	List various polygon filling algorithms and explain boundary fill in detail.	10
4	(a)	Explain geometric and kinematic modeling in detail	10
	(b)	Explain Sutherland Hodgeman polygon clipping algorithm.	10
5	(a)	Explain 3D transformations with suitable example for each.	10
	(b)	Explain Liang Barsky line clipping algorithm with example.	10
6		Write short note on (any four)	20

        (a)   Antialiasing techniques
        (b)   Application of Virtual Reality
        (c)   Text Clipping
        (d)   VR toolkit
        (e)   Morphing techniques

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