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

27-Nov-2019   1T01225 - T.E.(Information Technology Engineering)(SEM-V)(Choice Base) / 32409 - Elective - I
Computer Graphics & Virtual Reality   77195

Time: 3 Hours   **Marks: 80**

Note: 1) Question 1 is compulsory.
        2) Attempt any three questions from the remaining questions.
        3) Assume suitable data wherever applicable.

Q1	**a**	Prove that for 2D object successive rotation is additive.	**5**
	b	Explain applications of computer graphics.	**5**
	c	Explain types of projection.	**5**
	d	Fractals	**5**
Q2	**a**	Explain Cohen-Sutherland line clipping algorithm and clip line AB with A(40,15), B(75,45) against window with lower left corner (50,10) and top right corner(80,40).	**10**
	b	Explain VR modeling	**10**
Q3	**a**	Derive transformation matrix for rotation about fixed point and explain with suitable example.	**10**
	b	Define window and viewport, explain viewing transformation.	**10**
Q4	**a**	Generate five points on cubic bezier curve with control points A(0,0), B(1,2), C(3,2), D(2,0).	**10**
	b	What is virtual reality? Explain components of virtual reality.	**10**
Q5	**a**	Explain graphical rendering pipeline.	**10**
	b	Explain midpoint circle algorithm. Find pixel positions to plot circle centered at origin and of radius 10.	**10**
Q6		Write short note (**Any Four**)	
	a	Inside test	**5**
	b	Morphing	**5**
	c	Raster and random scan display	**5**
	d	Types of VR system	**5**
	e	Relevance of homogeneous coordinate system.	**5**

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