Total No. of Questions : 8]

PA-1249

SEAT No. :

[Total No. of Pages : 2

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S.E. (Information Technology) COMPUTER GRAPHICS

(2019 Pattern) (Semester - IV) (214453)

*Time : 2<sup>1</sup>/<sub>2</sub> Hours] Instructions to the candidates:*  [Max. Marks : 70

- 1) Answers: Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right side indicate full marks.
- 4) Assume Suitable data if necessary.

Q1) a) Explain with diagram Cohen Sutherland line clipping algorithm. [6]

- b) Compare homogeneous co-ordinate system and normalized co-ordinate system. [6]
- c) Show that the Transformation matrix of reflection about line y=x is equivalent to reflection relative to x-axis followed by anticlockwise rotation of 90 degree. [6]

## QR

- *Q2*) a) What is the concept of vanishing point in perspective projection? Explain with diagram.
  - b) Let ABCD be a rectangle window with A(20,20), B(90,20), C(90,70), D(20,70). Find the region codes for the end points & use Cohen Sutherland line clipping algorithm to clip the following line QPQ2 with Q1(10,10) and Q2(70,60). [6]

c) Explain 3D reflection about XY, YZ, and XZ plane.

- [6]
- Q3) a) What is Shading. Explain with diagram Constant intensity shading method.
  - b) Explain CMY and HSV color models. [6]
  - c) What is a segment? How do we create it? Why do we need segments?[5]

*P.T.O.* 

<b>Q4</b> ) a)	Compare Gourand and Phong method of shading.	[6]
b)	What is segment? Explain the concept of segment table and display	file. <b>[6]</b>
c)	Explain CIE chromaticity diagram; also explain how RGB to C conversion is done	CMY [5]
<b>Q5)</b> a)	Explain Koch curve and its application in detail.	[6]
b)	Write short notes on	[6]
	<ul><li>i) Morphing</li><li>ii) Design of animation sequence</li></ul>	
c)	What is fractal? Explain Hilbert curve in detail.	[6]
	OR OR	
<b>Q6</b> ) a)	Write short notes on	[6]
	i) B-spline curve	
	ii) Blending function of Bezier curve	
b)	What are the methods of controlling animation?	[6]
c)	Explain various types of animation languages.	[6]
<b>Q7)</b> a)	Explain the physical modeling in Virtual Reality.	[6]
b)	Explain haptic feedback in Virtual Reality system.	[6]
c)	What is navigation and manipulation interfaces in virtual reality system	n? <b>[5]</b>
	OR S	
<b>Q8</b> ) a)	Explain the behavioral modeling in Virtual Reality.	[6]
b)	What are sound displays in Virtual Reality?	[6]
c)	Explain Kinematic modeling in Virtual Reality.	[5]
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