Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – I • EXAMINATION – WINTER • 2014

Subject code: 710202N **Date: 02-12-2014**

Subject Name: Advance Computer Graphics

Time: 10:30 am - 01:00 pm **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Explain with an example Sutherland-Hodgeman Polygon Clipping algorithm.	**07**
	(b)	Compare Surface modeling and Solid modeling. Briefly explain Polygon mesh And its representation techniques.	**07**
Q.2	**(a)**	Compare Bezier curve and B-spline. Briefly explain the effect of multiple control points on a uniform B-spline.	**07**
	(b)	Explain different polygon mesh representations in detail.	**07**
		OR	
	(b)	Explain aliasing and its effect. Also explain anti-aliasing methods.	**07**
Q.3	**(a)**	Define- coherence. Briefly explain Z-buffer visible surface determination Algorithm.	**07**
	(b)	Compare image precision and object precision visible surface determination Algorithms. Briefly explain Coherence and Bounding volumes to make visible Surface determination algorithm more efficient.	**07**
		OR	
Q.3	**(a)**	Explain the effects of multiple knots and multiple control points for B-spline curves with necessary diagram.	**07**
	(b)	Explain Halftone approximation with its applications in detail.	**07**
Q.4	**(a)**	Compare Phong and Gouraud shading algorithms. Briefly explain Gouraud Shading algorithm.	**07**
	(b)	Briefly explain Character animation and Facial animation.	**07**
		OR	
Q.4	**(a)**	Define foreshortening and vanishing point. Derive the formula for perspective Projection on xy-plain with center of projection at distance d on positive z-axis.	**07**
	(b)	Briefly explain two-pass Z-buffer Shadow determination algorithm.	**07**
Q.5	**(a)**	Briefly explain Morphing and Facial animation.	**07**
	(b)	Briefly explain CIE chromaticity diagram and its applications in computer graphics.	**07**
		OR	
Q.5	**(a)**	Explain regularized Boolean Set operations in brief. How they are different from standard Boolean set operations	**07**
	(b)	Explain various approaches of adding texture on surfaces in detail.	**07**

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