Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

ME Semester –I Examination Feb. - 2012

Subject code: 710202N **Date: 13/02/2012**
Subject Name: Advanced 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)	What is the use of Inverse Transformation? Give the Inverse transformation for translation, rotation, reflection, scaling & shearing.	07
	(b)	Explain with an example Sutherland-Hodgeman Polygon Clipping algorithm.	07
Q.2	(a)	List all methods for setting the boundary conditions for cubic interpolation splines. Briefly explain any two of them.	07
	(b)	Define following terms: 1. Parallel Projection 2. Perspective Projection	07
		OR	
	(b)	Define following terms: 1. Exploded and Cutaway Views 2. Three dimensional and Stereoscopic Views	07
Q.3	(a)	Derive the equation for Bezier Surface. Explain properties of Bezier Surface and also find condition for C^1 Continuity between two Bezier Surface Patches.	07
	(b)	Explain Warnock's area subdivision algorithm with an example. Compare Weiler-Atherton with Warnock's area subdivision algorithm.	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 with an example Shadow Volume.	07
Q.4	(a)	Briefly explain Character animation and Facial animation.	07
	(b)	Answer following Questions 1. Define Image and Post filtering 2. List out Applications of Image Processing.	07
		OR	
Q.4	(a)	Briefly explain depth-sort algorithm to determine visible surface.	07
	(b)	List all color models with its application. Briefly explain any two color models in details.	07
Q.5	(a)	List out different spatial partitioning representation methods. Briefly explain Octree.	07
	(b)	Briefly explain Gamma Correction. Why it is required? Explain various methods to increase intensity levels in black and white monitor.	07
		OR	
Q.5	(a)	Briefly explain Halftone approximation with its application.	07
	(b)	Explain regularized Boolean Set operations in brief. How they are different from standard Boolean set operations?	07

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