Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E. SEMESTER I (old course)–EXAMINATION (Remedial) – WINTER 2015

Subject code: 710202N **Date: 09/12/2015**

Subject Name: Advance Computer Graphics

Time: 10:30 AM to 1:00 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)**	Find the composite transformation matrix to scale a unit cube in the direction of main diagonal (from (0, 0, 0) to (1, 1, 1) by factor 2.Show the intermediate Steps?	**07**
	(b)	Explain different polygon mesh representations in detail?	**07**
Q.2	**(a)**	Derive blending function for cubic Bezier curve? And also derive condition for C1 and C2 continuity?	**07**
	(b)	Explain solid modeling? Write down properties of solid modeling techniques? List out solid modeling methods?	**07**
		OR	
	(b)	Explain the regularized Boolean set operation in brief. How they are different from standard Boolean set Operation?	**07**
Q.3	**(a)**	Explain the basic difference between parallel and perspective projection? And Also derive the transformation matrix for oblique projection?	**07**
	(b)	What is Axonometric projection? List out different types of axonometric projection? Derive the transformation matrix for least restrictive type of axonometric projection?	**07**
		OR	
Q.3	**(a)**	Explain Back-face culling as visible surface determination algorithm?	**07**
	(b)	Explain Z-buffer algorithm for visible surface determination?	**07**
Q.4	**(a)**	Define Gama Correction. Halftone approximation in detail?	**07**
	(b)	Explain HSV and CMY model.	**07**
		OR	
Q.4	**(a)**	What is transparency? Explain different types of transparency in detail?	**07**
	(b)	What is coherence? Briefly explain different types of coherence?	**07**
Q.5	**(a)**	What is rendering? Explain geometry based rendering and Image based rendering in detail?	**07**
	(b)	What do you mean by illumination model? Discuss any two illumination model in detail?	**07**
		OR	
Q.5	**(a)**	What do you mean by graphics Accelerator? Discuss the Internal Architecture of graphics accelerator with neat diagram?	**07**
	(b)	What is Animation? Explain different types of Animation techniques in details?	**07**

****