Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER– II (Old course)• REMEDIAL EXAMINATION – SUMMER 2015

Subject Code : 1720905 **Date:14/05/2015**

Subject Name: Computer Aided Design

Time: 02:30 pm to 5:00 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 different kinds of surfaces in detail with sketches.	**07**
	(b)	Explain in detail the raster scan and vector scan techniques of displaying graphics.	**04**
	(c)	What is homogeneous co ï ordinate system? Explain its importance in CAD.	**03**
Q.2	**(a)**	Explain Bresenharmôs algorithm for representation of ellipse with suitable example.	**07**
	(b)	What is Data, Database and Data structure? Explain different data structure.	**07**
		OR	
	(b)	Write short note on (1) GKS (2) IGES (III) Communication Standards.	**07**
Q.3	**(a)**	Given Po[1,1], P1[2,3], P2[4,3] and P3[3,1] the vertices of a Bezier polygon, determine seven points on Bezier curve.	**07**
	(b)	Consider a triangle ABC having co-ordinates A(5,5) B(8,5) and C(5,12). Determine the new vertex position if it is mirrored about a line X = 0.5*Y -2.	**07**
		OR	
Q.3	**(a)**	A mirror is placed vertically such that it passes through the point (10,0) and (0,10) . Find the reflected view of triangle ABC with co-ordinates A(5,50) B(20,40) and C(10,70).	**07**
	(b)	Prove that three dimensional rotations are non commutative when more than one rotation is to be made.	**07**
Q.4	**(a)**	Explain different types of modeling techniques.	**07**
	(b)	Calculate parametric midpoint of the Hermite cubic curve that fits the points P0 =(1,1), P1=(6,5) and the tangent vector P0ô=(0,4), P1ô=(4,0).	**07**
		OR	
Q.4	**(a)**	What are twist vectors? Why are they needed as input if four boundary curves are given for a bicubic surface?	**07**
	(b)	Explain in detail the various capabilities, limitation and application of any 3 ï D CAD package software and also write steps for building up a computerized geometric solid model of rectangular nut of M8.	**07**
Q.5	**(a)**	Explain: Conventional Machine Design and Computer Aided Design	**07**
	(b)	Sketch the area defined by the relation x2 + y2 ï 6(x2 + y2)1/2 + 9 Ò3	**07**
		OR	
Q.5	**(a)**	Explain Zero order continuity, First Order Continuity and Second Order continuity with respect to synthetic curves.	**07**
	(b)	Explain the concept of Feature based modeling	**07**

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