Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

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

Subject code: 1720905 **Date: 10-12-2014**

Subject Name: Computer Aided Design

Time: 02:30 pm - 05:00 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)**	List different types of cad software and explain minimum requirements in computers for installing anyone with its capability.	**07**
	(b)	Explain Bresenharmôs algorithm for generating Circle with suitable example.	**07**
Q.2	**(a)**	State and explain properties of Bezier curves . A cubic Bezier curve is defined by points (1,1), (2,3), (4,4) and (6,1) calculate the coordinate of parametric midpoint of this curve.	**07**
	(b)	Sketch and explain following with reference to solid modeling (1) sweep (2) primitive (3)Boolean operation.	**07**
		OR	
	(b)	Explain in brief boundary representation and constructive solid geometry schemes for creating solids.	**07**
Q.3	**(a)**	Reflect a diamond shape polygon whose vertices are A(-3,0), B(0,-2), C(3,0) and D(0,2) about the line Y = X+2. Determine the final co-ordinate of the vertices.	**07**
	(b)	Generate a straight line connecting two points (20,10)and (27,16) using Bresenharmôs line generating algorithm.	**07**
		OR	
Q.3	**(a)**	Consider triangle ABC having coordinates A(5,5) B(8,5) and C(5,12) determine the new vertices position if it is mirror about a line X= 0.5y - 2.	**07**
	(b)	Write short note on (I) GKS (II) IGES graphic Standards.	**07**
Q.4	**(a)**	Discuss analytical and synthetic curves.	**07**
	(b)	Obtain parametric equation for (1) sphere surface and (2) Paraboloid surface	**07**
		OR	
Q.4	**(a)**	What is data,data base and data structure? Explain different data structure.	**07**
	(b)	Discuss animation and simulation.	**07**
Q.5	**(a)**	Sketch the area defined by the relation $X^2 + Y^2 - 6(X^2 + Y^2)^{1/2} + 9$ Ò3.	**07**
	(b)	Discuss Mathematical modeling with suitable example.	**07**
		OR	
Q.5	**(a)**	Write short notes on the following: i. Random scan graphic terminal ii. Digitizers and Image scanners	**07**
	(b)	Explain clipping and windowing?	**07**

****