Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME – SEMESTER II (OLD) EXAMINATION – SUMMER 2017

Subject Code:1720905 Date:11/05/2017

Subject Name: Computer Aided Design

Time:10:30 A.M. to 01:00 P.M. 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 in detail the various CAD tools required to support the design process.	**07**
	(b)	Explain Bresenharm's algorithm for generating Circle with suitable example.	**07**
Q.2	**(a)**	Consider a triangle ABC having coordinates(5,5),B(8,5) and C(5,10).Determine the new vertex position if: 1) The triangle is rotated by 60° anticlockwise about the vertex A. 2) If it is mirrored about a line Y= 2X + 4.	**07**
	(b)	Explain Zero order continuity, First Order Continuity and Second Order continuity with respect to synthetic curves.	**07**
		OR	
	(b)	Enlist different factors influencing the selection or implementation of CAD/CAM Systems for your organization	**07**
Q.3	**(a)**	Explain different types of modeling techniques.	**07**
	(b)	Differentiate between conventional product design and Computer Aided Product Design cycle.	**07**
		OR	
Q.3	**(a)**	Explain different kinds of surfaces in detail.	**07**
	(b)	Explain in brief boundary representation and constructive solid geometry schemes for creating solids.	**07**
Q.4	**(a)**	Generate a straight line connecting two points (10,30)and (19,36) using DDA line generating algorithm.	**07**
	(b)	Write short note on (I) GKS (II) IGES graphic Standards.	**07**
		OR	
Q.4	**(a)**	Explain the different techniques used for generating the picture on the CRT screen.	**07**
	(b)	Discuss analytical and synthetic curves.	**07**
Q.5	**(a)**	What is data, data base and data structure? Explain different software module.	**07**
	(b)	Write short notes on the following: i. Random scan graphic terminal ii. Digitizers and Image scanners	**07**
		OR	
Q.5	**(a)**	What are twist vectors? Why are they needed as input if four boundary curves are given for a bicubic surface?	**07**

(b) Plot the Bezier curve having endpoints PO(35,30) and P1(25,0). The other control Points are P2(15, 25) and P3(5, 10). Plot for values for u = 0, 0.2, 0.4, …..1, if the Characteristic polygon is drawn in the sequence PO – P2- P3- P1. **07**

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