GUJARAT TECHNOLOGICAL UNIVERSITY
PDDC - SEMESTER–VI • EXAMINATION – WINTER • 2014

Subject Code: X 61901   **Date: 29-11-2014**

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)**	What are two dimensional transformations? Discuss translation and scaling with suitable examples.	**07**
	(b)	Explain DDA algorithm for generation of line.	**07**
Q.2	**(a)**	Define CAD and CAM. Compare CAD with conventional design processes.	**07**
	(b)	Write limitation of hermite cubic curve and describe the characterizes of Bezier curve.	**07**

OR

	(b)	Discuss manipulations in solid modeling.	**07**
Q.3	**(a)**	What is geometrical modeling? Explain wireframe modeling with its advantages and disadvantages.	**07**
	(b)	Explain parametric representation of circle in parametric form.	**07**

OR

Q.3	**(a)**	Explain CSG tree structure.	**07**
	(b)	Explain following pick and place features.	**07**

      (i) Hole (ii) Chamfer (iii) Fillet (iv) Draft (v) Shell (vi) Pocket

Q.4	**(a)**	Explain the steps of Finite Element analysis.	**07**
	(b)	Explain the shape function in natural co-ordinate system.	**07**

OR

Q.4	**(a)**	Derive Element stiffness matrix by potential energy approach.	**07**
	(b)	Describe in detail the structure of IGES file.	**07**
Q.5	**(a)**	What is optimization? Explain.	**07**
	(b)	State various Optimization techniques. Explain any one briefly.	**07**

OR

Q.5	**(a)**	Distinguish between engineering design and optimum design	**07**
	(b)	Explain the following terms used in optimization.	**07**

      (i) Design Vector
      (ii) Design Constraints
      (iii) Objective function.

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