Seat No.: _____   Enrolment No._____

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

Subject Code: 161903   **Date: 01-12-2014**
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)**	Explain wireframe modeling in detail. Compare it with solid modeling.	**07**
	(b)	Give your Comments on the need for standardization in Computer Graphics. Briefly discuss about various graphics standards available.	**07**
Q.2	**(a)**	Explain the concepts of FEM. Discuss the different steps involved in FEA indetailed.	**07**
	(b)	What are different types of geometric technique available? Describe the common facilities available in a solid modeling package.	**07**
		OR	
	(b)	Reflect the diamond shape polygon whose vertices are A(-3,0), B(0,-2), C(3,0), D(0,2) about an arbitrary line L which is represented by equations y=0.5x+1.	**07**
Q.3	**(a)**	With neat sketch explain the characteristics of Bezier curve and mention its advantages.	**07**
	(b)	Describe the structure of an IGES file and compare IGES and PDES.	**07**
		OR	
Q.3	**(a)**	Explain DDA algorithm for generation of line.	**07**
	(b)	Explain the CAD of helical compression spring using flow chart.	**07**
Q.4	**(a)**	A triangle ABC with vertices A(30,20), B(90,20) and C(30,80) is to be scaled by factor 0.5 about a point X(50,40). Determine (i) the composition matrix and (ii) the coordinates of the vertices for a scaled triangle.	**07**
	(b)	Explain Penalty approach and Elimination approach for FEA.	**07**
		OR	
Q.4	**(a)**	Discuss in detail about the applications of optimization in engineering.	**07**
	(b)	What are the different types of Elements? Explain their characteristic and importance.	**07**
Q.5	**(a)**	Explain Johnson method of optimum design with an example.	**07**
	(b)	What do you mean by compatible and incompatible problem in optimum design? Explain.	**07**
		OR	
Q.5	**(a)**	Compare CSG and B-rep techniques of solid modeling.	**07**
	(b)	What do you mean by primary and subsidiary design equation? Explain with example.	**07**

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