Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E Sem-I Remedial Examination January/ February 2011

Subject code: 710802

Subject Name: Computer Aided Machine Design

Date: 01 /02 /2011 **Time: 02.30 pm – 05.00 pm**

Total Marks: 60

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Differentiate clearly between conventional design and computer aided machine design.	**06**
	(b)	Discuss the various applications of computer aided machine design in engineering field.	**06**
Q.2	**(a)**	What do you mean by optimum design of machine elements? Explain this stating various examples.	**06**
	(b)	Explain single variable and multivariable optimization techniques in brief.	**06**
		OR	
	(b)	Explain the optimum design of shaft subjected to torsion for minimum weight by Johnson method.	**06**
Q.3	**(a)**	Explain the computer aided design of helical compression spring with the help of flow chart.	**06**
	(b)	Discuss the important features of ProEngineer solid modeling software.	**06**
		OR	
Q.3	**(a)**	Explain the computer aided design of shaft subjected to combined bending and torsion with the help of flow chart.	**06**
	(b)	Discuss the important features of Mechanical Desktop solid modeling software.	**06**
Q.4	**(a)**	Explain the importance of modeling in mechanical engineering stating applications.	**06**
	(b)	Explain Bezier curves and B-spline curve.	**06**
		OR	
Q.4	**(a)**	Write a note on modeling in CAD.	**06**
	(b)	Explain β-rep in detail with suitable examples with neat sketch.	**06**
Q.5	**(a)**	Explain 3D- geometrical modeling.	**06**
	(b)	Explain translation and scaling with reference to geometrical transformations with suitable examples.	**06**
		OR	
Q.5	**(a)**	Discusses Bresenham's line algorithm.	**06**
	(b)	Write a note on: -Wire frame modeling and surface modeling.	**06**

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