Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. IST Semester–Remedial Examination – July- 2011

Subject code: 710807N

Subject Name: Advance Materials & Process

Date:12/07/2011 **Time: 10:30 am – 01:00 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 the importance of standardization in design for machining.	**07**
	(b)	Explain effects of service condition on the performance of materials.	**07**
Q.2	**(a)**	What are advance magnetic materials? Explain properties and application of these materials.	**07**
	(b)	What do you mean by super alloys? Discuss about the engineering applications of super alloys.	**07**
		OR	
	(b)	What do you mean by Smart material? Discuss about the engineering applications of Smart material.	**07**
Q.3	**(a)**	Explain basic principles of designing for economical production.	**07**
	(b)	Explain the effect of High & low temperatures on Performance of materials.	**07**
		OR	
Q.3	**(a)**	Critically evaluate the methods for material selection.	**07**
	(b)	Explain distortion and residual stress measurement technique.	**07**
Q.4	**(a)**	Explain general design rules for machining.	**07**
	(b)	Explain effects of thermal stresses in weld joints and methods to reduce it.	**07**
		OR	
Q.4	**(a)**	Describe general design considerations for casting.	**07**
	(b)	Explain method for design drop forging die.	**07**
Q.5	**(a)**	Discuss the characteristics of extruded products with forward and backward mode. Suggest some design guidelines for the manufacture of extruded section.	**07**
	(b)	Justify the use of solidification simulation in casting design.	**07**
		OR	
Q.5	**(a)**	What are general difficulties during hole machining? and how can it be solved?	**07**
	(b)	Suggest Design guidelines for machining and joining of plastics.	**07**

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