Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E. SEMESTER I (old course)–EXAMINATION (Remedial) – WINTER 2015

Subject code: 710807N **Date: 15/12/2015**

Subject Name: Advanced Materials and Processes

Time: 10:30 AM to 1:00 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)**	Write the characteristics of electro-optic materials and give example of such materials.	**07**
	(b)	List the processing techniques use for making the polymer matrix composite materials and explain any one.	**07**
Q.2	**(a)**	Write the difference between destructive and non-destructive evaluation techniques.	**07**
	(b)	Define the term ñcorrosionò. Describe any two techniques for controlling the corrosion.	**07**
		OR	
	(b)	Enlist the various characterization and evaluation techniques in which X-ray are use and describe any one.	**07**
Q.3	**(a)**	What do you mean by ñcreativity in designò? Explain through suitable example.	**07**
	(b)	Discuss the criteria for material selection.	**07**
		OR	
Q.3	**(a)**	Explain basic principles of designing for economical production.	**07**
	(b)	Write the design recommendations for machined parts.	**07**
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Q.4	**(a)**	Write the product design rules for sand casting.	**07**
	(b)	Write the short note on pre and post treatment of welds.	**07**
		OR	
Q.4	**(a)**	Enlist the advantages of simulation in designing for casting.	**07**
	(b)	Discuss the effect of thermal stresses in weld joints.	**07**
Q.5	**(a)**	Write the role of parting line in forging die and give the recommendations for same.	**07**
	(b)	Explain the term ñformabilityò of metal sheet and Keeler Goodman forming line diagram.	**07**
		OR	
Q.5	**(a)**	Write the design rules for extruded parts.	**07**
	(b)	Explain the viscoelastic and creep behavior of plastics.	**07**

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