Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- VIIth SEMESTER–EXAMINATION – MAY/JUNE- 2012

Subject code: 172102 **Date: 08/06/2012**

Subject Name: Non Destructive Testing

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 the different NDT methods? State its advantages and limitations.	**07**
	(b)	State the principle of leak and pressure testing and explain it in detail.	**07**
Q.2	**(a)**	Explain the principle of ultrasonic testing. Give its applications, advantages and limitations.	**07**
	(b)	What is the principle of eddy current testing (ECT)? What is sensitivity in ECT?	**07**
		OR	
	(b)	What is dye penetrant test? Explain cleaners, penetrants and developers.	**07**
Q.3	**(a)**	What is Magnetic particle testing? List its limitations.	**07**
	(b)	Explain procedure of Magnetic particle testing.	**07**
		OR	
Q.3	**(a)**	Explain principle of radiographic testing and give its applications and limitations.	**07**
	(b)	Discuss radiography in welding briefly.	**07**
Q.4	**(a)**	Draw neat sketch of Normal, TR and Angle probes and mention their applications.	**07**
	(b)	Write a note on piezoelectricity.	**07**
		OR	
Q.4	**(a)**	Explain the principle of thermography and give its applications.	**07**
	(b)	Discuss the steps for dye penetrant test with neat sketch.	**07**
Q.5	**(a)**	Write a short note on Acoustic Emission Testing.	**07**
	(b)	State how different NDT techniques are selected for defect detection.	**07**
		OR	
Q.5	**(a)**	List the defects in parts manufactured by various processes.	**07**
	(b)	Differentiate between destructive and non destructive testing.	**07**

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