GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VII • EXAMINATION – SUMMER • 2014

Subject Code: 172102 Date: 03-06			-2014	
Time	Subject Name: Non Destructive Testing Time: 02:30 pm - 05:00 pm Total Mark Instructions:			
mstru	1. 2.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.		
Q.1	(a)	What is meant by visual inspection of materials/ component? Explain the role of visual inspection in non destructive testing giving suitable examples.	07	
	(b)	•	07	
Q.2	(a)	Draw a neat sketch of Helium leak detector and explain its working. Where and how it is used?	07	
	(b)		07	
	(b)	_	07	
Q.3	(a)	i) Steps of operationii) Principle	07 (2+2+2+1)	
	(b)	 i) Steps of Operation ii) Principle iii) Method of Magnetization iv) Limitations 	07 (2+2+2+1)	
Q.3	(a)	Explain the following terms i) Piezoelectric properties ii) Acoustic properties iii) Geometrical unsharpness iv) Non Destructive Testing	07 (2+2+2+1)	
	(b)	,	07	
Q.4	(a)	Explain the principle, application and disadvantages of Radiographic Testing.	07	
	(b)	Name various defects found in casting & forgings. How will you identify them?	07	
0.4	(a)	OR What are filters and seeens used in V ray radiography? Why are they	07	
Q.4	(a)	What are filters and sceens used in X- ray radiography? Why are they used?	U/	
0.4	(h)	Write a brief note on Radiographic film and its processing.	07	

Q.5	(a)	What is the principle of Eddy current testing?	07
	(b)	Discuss various applications of eddy current testing?	07
		OR	
Q.5	(a)	What NDT techniques you would like to employ for the following cases.	07
		i) Testing of heat exchanger tube for leakage.	
		ii) Measurement of coating thickness on mild steel sheet.	
		iii) Change in thickness of a domestic galvanized water pipe line.	
		iv) Quench cracks on hardened steel.	
		v) Inclusion in stainless steel casting.	
		vi) Porosity in welded joints.	
		vii) Hairline cracks on ceramic tiles.	
	(b)	Discuss various test coils used in Eddy current testing.	07
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