

Code No: I1507/R16

## M. Tech. I Semester Regular Examinations, January-2017

## **NON - DESTRUCTIVE EVALUATION**

Machine Design (15) and Mechanical Engineering Design (14)

Time: 3 Hours Max. Marks: 60

Answer any FIVE Questions All Questions Carry Equal Marks			
1.	a b	Distinguish between NDT and NDE; also explain where these will be used.  Discuss the various methods of developer application on the component in the penetrant flaw detection method	6
2.		What types of safety precautions are need to be taken to avoid fire hazards and toxic nature of the materials used in penetrant flaw detection?	12
3.	a b	Discuss the recording of radiation by Radiographic film. With a neat sketch discuss the working procedure of X-ray image intensifier.	6
4.		Explain how the residual stresses in metals can be measured by using ultrasonic velocity measurements.	12
5.		Write a short note on the following: <ul> <li>a) Field sensitive probes.</li> <li>b) Measurement of metal properties.</li> </ul>	12
6.	a	What factors affect the magnitude of induced eddy currents? Explain briefly.	6
	b	Explain different types of coils used for the detection of eddy currents.	6
7.	a	Describe the film processing, interpretation and evaluation of test results in Radiography testing method.	6
	b	What is Acoustical Holography, what are the applications and limitations?	6
8.	a	Explain about NDT in flaw analysis of Welded Constructions.	6
	b	Explain surface preparation prior to thermal inspection.	6