Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FIFTH SEMESTER B.TECH DEGREE EXAMINATION(R&S), DECEMBER 2019

Course Code: ME367

Course Name: NON-DESTRUCTIVE TESTING

Max. Marks: 100 Duration: 3 Hours

PART A

Answer any three full questions, each carries 10 marks.

			Marks
1	a)	What is the significance of NDT in engineering applications?	(2)
	b)	What are the objectives of NDT	(4)
	c)	Define Visual Perception. List the steps involved.	(4)
2	a)	List the applications and Limitations of Visual inspection technique in NDT	(5)
	b)	What are the different types of light sources used in Visual Inspection?	(5)
3	a)	What are the advantages and disadvantages of Non aqueous developers and water soluble developers used in LPI?	(4)
	b)	What are the methods used to remove excess penetrants during LPI	(6)
4	a)	How are penetrants classified based on a. Physical properties b. Removal techniques c. Strength of indication	(8)
	b)	List any 4 defects that can be detected using LPI.	(2)

PART B

Answer any three full questions, each carries 10 marks.

5	a)	What is the principle of MPI	(5)
	b)	What are the various reasons for false indications, Non-relevant indications and Relevant indications during MPI?	(5)
6	a)	Explain with suitable sketch about following a. Circular magnetization b. Longitudinal magnetization	(3)
	b)	What is continuous testing and residual technique of MPI	(7)
7		With neat sketches explain the procedures followed in transmission method and Pulse-echo method of UT.	(10)
8	a)	What are the Limitations and applications of UT	(7)
	b)	What is the need for Calibration of Equipments in UT	(3)

PART C

Answer any four full questions, each carries 10 marks.

9	a)	How is evaluation of Test results carried out in RT	(3)
	b)	List the properties of X-rays and gamma rays.	(7)
10	a)	With a neat sketch explain the working of Real time Radiography.	(6)
	b)	What you mean by high energy X-ray source. List its any 2 benefits.	(4)
11		What are the advantages, limitations and applications of RT.	(10)
12		Design a suitable test set up used for the evaluation of weldment in stainless steel using Eddy Current Testing.	(10)
13	a)	With neat sketches explain the following terms associated with ECT a. Inductive reactance b. Impedance c. Permeability	(5)
	b)	How is the detection of discontinuities carried out in ECT? Include necessary figures	(5)
14	a)	With the help of neat sketches explain how the thickness measurement is carried out using ECT?	(5)
	b)	With neat sketches explain the construction and working of Reflection Probe and Differential Probe used in ECT.	(5)

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