

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)**

**CLASS: BTECH
BRANCH: MECH**

**SEMESTER : IV
SESSION : SP/2023**

SUBJECT: ME219 NON-DESTRUCTIVE TESTING

TIME: 3 Hours

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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		CO	BL
Q.1(a)	Outline the steps for evaluation of a surface flaw in a weld joint by liquid penetrant inspection method.	[5] 1	4
Q.1(b)	Describe the role of penetrant along with its desirable properties	[5] 1	2
Q.2(a)	Illustrate the factors affecting eddy current.	[5] 2	4
Q.2(b)	With neat sketch describe magnetization using the contact current flow method.	[5] 2	3
Q.3(a)	Describe with neat sketch the production of X-rays in an x-ray tube.	[5] 3	3
Q.3(b)	Demonstrate the underlying principle of X-ray radiography .	[5] 3	3
Q.4(a)	What is meant by attenuation of sound wave. Explain the reason.	[5] 4	2
Q.4(b)	Describe Pulse- echo immersion type method for ultrasonic test.	[5] 4	3
Q.5(a)	Outline the types of defects that are observed in welding along with their cause.	[5] 5	4
Q.5(b)	Summarize the applications, types of discontinuities, advantages and limitations of ultrasonic test for detection of flaws.	[5] 5	4

:27/04/2023:M