

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

**CLASS: BTECH
BRANCH: ME**

**SEMESTER: IV
SESSION : SP/2020**

SUBJECT: ME257 NON DESTRUCTIVE TESTING

TIME: 2 HOURS

FULL MARKS: 25

INSTRUCTIONS:

1. The total marks of the questions are 25.
 2. Candidates may attempt for all 25 marks.
 3. Before attempting the question paper, be sure that you have got the correct question paper.
 4. The missing data, if any, may be assumed suitably.
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			CO	BL
Q1	(a) Explain non-destructive evaluation and list some common techniques.	[2]	1	BL2
Q1	(b) Classify the nature of flaws along with suitable examples that may be detected using non-destructive testing.	[3]	1	BL4
Q2	(a) Discuss sensitivity of a penetrant along with the factors affecting it.	[2]	1	BL2
Q2	(b) Demonstrate the steps for evaluation of a surface flaw by liquid penetrant inspection method.	[3]	1	BL3
Q3	(a) Explain the disadvantages of magnetic particle inspection.	[2]	2	BL2
Q3	(b) Distinguish between different types of magnetizing techniques along with their advantages and suitability of use in different situations.	[3]	2	BL4
Q4	(a) Outline different cases where the eddy current testing method of evaluation may be applicable.	[2]	2	BL4
Q4	(b) Demonstrate along with a neat sketch the principle underlying flaw detection by eddy current technique.	[3]	2	BL3
Q5	(a) Identify some limitations of radiography technique.	[2]	3	BL1
Q5	(b) Illustrate with a neat sketch the basic principle of radiography and discuss some applications.	[3]	3	BL3

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