

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI (NEW) EXAMINATION – SUMMER 2024****Subject Code:3161923****Date:24-05-2024****Subject Name:Non destructive Testing****Time:10:30 AM TO 01:00 PM****Total Marks:70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

MARKS

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|------------|---|-----------|
| Q.1 | (a) List the names of all Destructive & Non-destructive testing commonly carried out. | 03 |
| | (b) Discuss principle of visual testing and its limitations. | 04 |
| | (c) What are the types of transducers are used in UT.? Explain with suitable diagram. | 07 |
| Q.2 | (a) What is contact angle, capillary action and dwelling time in LPT. | 03 |
| | (b) Give the applications and limitations of LPT. | 04 |
| | (c) List out and discuss briefly different MPT equipment. | 07 |
| | OR | |
| | (c) Explain procedure of Magnetic particle testing. | 07 |
| Q.3 | (a) Which are the different types of sound waves? Explain | 03 |
| | (b) Write a brief note on (a) Penetrants (b) developers. | 04 |
| | (c) Explain the principle of Acoustic Emission Testing (AET) with line diagram. Write applications & advantages of AET. | 07 |
| | OR | |
| Q.3 | (a) Why and how demagnetization is carried out? | 03 |
| | (b) Discuss defects due to the forging process & Heat treatment process. | 04 |
| | (c) Explain pulse echo method with neat sketch. | 07 |
| Q.4 | (a) Discuss advantages and limitations of X-ray radiography. | 03 |
| | (b) Explain basic principle of Radiographic examination. | 04 |
| | (c) Differentiate between X-ray & Gamma-ray radiographic testing. | 07 |
| | OR | |
| Q.4 | (a) List the advantages and limitations of UT. | 03 |
| | (b) What is the use of penetrometer in RT. | 04 |
| | (c) What is A Scan- B Scan- C Scan presentation in ultrasonic testing? | 07 |
| Q.5 | (a) What do you understand by sensitivity in ECT? | 03 |
| | (b) Write note on piezoelectricity. | 04 |
| | (c) Explain Leak and Pressure testing techniques. What are its applications? | 07 |
| | OR | |
| Q.5 | (a) State safety precaution in Industrial radiography. | 03 |
| | (b) Explain X Ray film processing | 04 |
| | (c) What is the principle of Thermographic Testing? What are its limitations & advantages.? | 07 |
