

National Institute of Technology Hamirpur
Department of Materials Science and Engineering
End-Term Examinations (May 2023)

Non-Destructive Testing of Materials

MS-321

Total Marks: 50

Time duration: 3 hrs

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- Q.1** Write a short note on X-ray Radiography. What is computed tomography, explain the working principle and applications of computed tomography. [5]
- Q.2** Write a note justifying the importance of studying NDT course w.r.t its application in the real world. You can support your answer with few examples (*which can be related to your observations in any sector*). [5]
- Q.3** What do you understand from the term sampling w.r.t quality control? Explain different types of sampling used in quality control. [5]
- Q.4** What is the function of a developer and a penetrant in liquid penetrant testing? Explain about the different types of penetrants used. [5]
- Q.5** Why do we use magnetic field indicators? Discuss different types of magnetic field indicators used in MPT. [5]
- Q.6** What are the major variables in ultrasonic inspection technique and how they affect the testing? [3]
- Q.7** Explain the process of eddy current inspection for locating the cracks/flaws? [4]
- Q.8** What are the different types of probes used in eddy current testing? [4]
- Q.9** Write a short note on the following [7*2=14]
- a) Importance of ISO standards
 - b) Generation of X rays
 - c) List any 2 defects that can be detected using LPI
 - d) Lift off effect, Edge effect and End effect
 - e) Dwell time and Development time
 - f) Skin effect
 - g) Working of radiographic film