

**B.Tech. – VIEP – MECHANICAL ENGINEERING
(BTMEVI)****Term-End Examination****December, 2015****BIMEE-011 : NON-DESTRUCTIVE TESTING***Time : 3 hours**Maximum Marks : 70*

Note : Attempt any five questions. All questions carry equal marks. Standard symbols have usual meaning.

1. (a) Why is non-destructive testing required ?
Discuss in detail. 7
- (b) Enumerate the advantages and limitations of non-destructive testing. 7
2. (a) Which NDT technique is best suited for testing surface and subsurface discontinuities ? Explain it in detail. 7
- (b) Discuss in brief the advantages and limitations of the magnetic particle inspection technique. 7
3. (a) Compare and contrast X-Rays and Gamma Rays in radiographic inspection. 7
- (b) Describe in detail the ultrasonic flaw-detection process of NDT. 7

4. (a) Enumerate the application, advantages and limitations of ultrasonic inspection method used in cast and wrought metal parts and in welded joints. 7
- (b) How can photoelectric effect be used as non-destructive technique ? Explain with the help of a neat diagram. 7
5. (a) Compare Rayleigh's scattering and Compton's scattering. 7
- (b) Describe Zygo test in detail, with a neat sketch. 7
6. (a) Explain X-ray radiography principle, equipment and its methodology. 7
- (b) Enumerate the advantages and limitations of CRO technique. 7
7. Explain the principle, advantages and limitations as well as scope of eddy current inspection technique. 14
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