

**B.Tech. - VIEP - MECHANICAL ENGINEERING
(BTMEVI)**

Term-End Examination

December, 2016

00273

BIMEE-011 : NON-DESTRUCTIVE TESTING

Time : 3 hours

Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal marks.

1. (a) Discuss the role of NDT techniques in manufacturing. 7
- (b) Which type of defects can be detected by visual inspection ? Briefly describe the use of endoscopy in visual inspection. 7
2. (a) Describe in brief the magnetic crack detection method of non-destructive testing. 7
- (b) Explain the differences between γ -ray and X-ray radiography. 7
3. (a) Describe Zyglo test with the help of a neat diagram. 7
- (b) Describe the situation where dye-penetrant test is useful. Explain this test in detail. 7

4. (a) Briefly discuss the various methods which can be used for magnetization. 7
- (b) Make a comparative study on the uses of liquid penetrant testing and magnetic particle testing. 7
5. (a) Discuss the applications, advantages and limitations of ultrasonic testing. 7
- (b) How can photoelectric effect be used as a non-destructive technique ? Explain with the help of a neat diagram. 7
6. (a) Discuss the role of piezoelectricity and magnetostriction in the ultrasonic testing. 7
- (b) What are the advantages and limitations of eddy current inspection method ? 7
7. Write short notes on any *four* of the following : $4 \times 3 \frac{1}{2} = 14$
- (a) Probes
- (b) CRO Techniques
- (c) Skin Effect
- (d) Porosity Testing
- (e) Surface Defects
- (f) Leak Testing