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BIMEE-011

B. Tech.-VIEP-MECHANICAL ENGINEERING

(BTMEVI)

Term-End Examination, 2019

BIMEE-011 : NON-DESTRUCTIVE TESTING

Time : 3 Hours]

[Maximum Marks : 70

Note : Answer 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) Which type of defects can be detected by visual inspection ? Discuss. Briefly describe the use of Boroscope and Endoscope in visual inspection. [7]
2. (a) What safety measures would you consider as precautions against radiation hazards ? Explain. [7]
- (b) Describe in brief the magnetic crack detection method of non-destructive testing. [7]

3. (a) Compare the contrast of X-Rays and Gamma Rays in radiographic inspection. [7]
- (b) Explain the use of piezoelectricity and magnetostriction in non-destructive testing techniques. [7]
4. (a) Describe the eddy current inspection method with the help of a neat diagram. [7]
- (b) Make the comparative study on the use of liquid penetrant testing and magnetic particle testing. [7]
5. (a) Enumerate ultrasonic inspection methods to detect flaws in cast and wrought iron metal parts in welded joints. [7]
- (b) Describe in brief the advantages, limitation and typical application of ultrasonic methods. [7]
6. (a) How photo electric effect can be used as non-destructive technique ? Explain with the help of a neat diagram. [7]
- (b) Describe zyglo test with the help of neat diagram. [7]

7. Write short notes on **any four** of the following : [4x3.5=14]

- (a) Scattering factor
- (b) Flaws and defects
- (c) Skin effect
- (d) CRO Techniques
- (e) Leak testing
- (f) Probes

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