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Question Paper Code: BSTB07



INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

M.Tech I Semester End Examinations (Regular) - January, 2019

Regulation: IARE-R18

STRUCTURAL HEALTH MONITORING

Time: 3 Hours

(STE)

Max Marks: 70

Answer ONE Question from each Unit

All Questions Carry Equal Marks

All parts of the question must be answered in one place only

UNIT – I

1. (a) State the causes of deterioration in reinforced concrete structures. [7M]
(b) What are the factors affecting the health of a structure? Explain in detail. [7M]
2. (a) Explain about maintenance of structures and need of maintenance [7M]
(b) List out the various categories of inspections and how to do the inspection in construction site. [7M]

UNIT – II

3. (a) Describe the process of structural health monitoring of structures in detail. [7M]
(b) Discuss various measures in structural health monitoring in reinforced cement concrete structures. [7M]
4. (a) Describe the importance of structural safety in alteration process. [7M]
(b) Explain the structural health monitoring systems available in India. [7M]

UNIT – III

5. (a) Discuss the step by step procedure of SHM. [7M]
(b) Explain the investigation and its management system. [7M]
6. (a) What are the different types of sensors used for assessment of a structure? [7M]
(b) How to assess the health of structures. List out some of the methods in health assessment of structures. . [7M]

UNIT – IV

7. (a) List out the static test and also explain any two test briefly. [7M]
(b) What is static response measurement in static field testing. [7M]

8. (a) Explain the simulations and loading methods in static field testing. [7M]
(b) What are the functions of hardware tools in static structural health monitoring . [7M]

UNIT – V

9. (a) Write a note on remote structural health monitoring. [7M]
(b) What are the different types of sensors used in structural health monitoring? Discuss in detail. [7M]
10. (a) Explain about the peizo – electric materials and other smart materials in structural health monitoring. [7M]
(b) List out the types of dynamic field tests and suggest any two tests to identify the structural health. [7M]

