

B.TECH.
(SEM VI) THEORY EXAMINATION 2022-23
REPAIR AND REHABILITATION OF STRUCTURE

Time: 3 Hours

Total Marks: 100

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt all questions in brief. 2 x 10 = 20

- a. Mention the importance of maintenance.
- b. List out main objective of maintenance of buildings.
- c. What are the causes of distress in concrete structures?
- d. How will you prevent cracks due to biological attack?
- e. Write the principle of accelerated strength gain.
- f. How is jacketing done?
- g. Write different types of Repair Techniques.
- h. Write briefly on impact echo methods.
- i. What are the different preliminary test methods?
- j. Write structural monitoring challenges.

SECTION B

2. Attempt any three of the following: 10x3=30

- a. What is the methodology for the investigation of failures in buildings and Explain any one method.
- b. How do you repair a structure distressed due to corrosion? Describe in detail.
- c. Describe Guniting and Shotcrete as a method of repair
- d. Explain various positive and negative effect of temperature on concrete
- e. Defining alkali aggregate reaction, explain causes and preventive measures of alkali aggregate reaction

SECTION C

3. Attempt any one part of the following: 10x1=10

- a. What do you understand about the freezing and thawing and explain them very clearly with the help of neat sketches if required?
- b. What do you understand about the grouting and explain any one method?

4. Attempt any *one* part of the following: 10x1=10

- a. What do you understand about cracks in concrete and write different types and also explain preventive measures?
- b. How to do strengthening of RCC structural member of a old building?

5. Attempt any *one* part of the following: 10x1=10

- a. Explain with one case study about Poor quality of material and Poor Construction practices.
- b. Prepare a report on damage classification of the structural member based on the output of preliminary investigations.

6. Attempt any *one* part of the following: 10x1=10

- a. Write in brief about Foundation Rehabilitation Methods.
- b. List the functions of quality control during construction.

7. Attempt any *one* part of the following: 10x1=10

- a. Give the list of types of smart building sensors and how they work?
- b. Write the objective of structural health monitoring. Give the flow chart for steps of structural health monitoring.