

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.Tech. Summer 2018 - 19 Examination

Semester: 8
Subject Code: 03104480
Subject Name: Repair and Rehabilitation of Structures

Date: 03/05/2019
Time: 10:30am to 1:00pm
Total Marks: 60

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 Objective Type Questions - (Each of one mark)**(15)**

1. Rehabilitation of structures may be required due to several reasons one reason is:
 - a) Environmental effects
 - b) Tensile effects
 - c) Compressive effects
 - d) Range effects
2. The structural concrete slab panels can be repaired by:
 - a) Internal bonding
 - b) External bonding
 - c) Stress bonding
 - d) Layered bonding
3. Which type of inspection is more intensive involving examination of structural elements?
 - a) Minor inspection
 - b) General inspection
 - c) Major inspection
 - d) Reverse inspection
4. One of the testing equipments used for inspection is:
 - a) Strain gauges
 - b) Measuring jar
 - c) Test tubes
 - d) None of the mentioned
5. In the case of dormant cracks wider than about 1mm, it is more economical to use:
 - a) Epoxy resin
 - b) Grouting
 - c) Tensioning
 - d) Ranging
6. The first step in the process of evaluation of a distress concrete is _____.
7. Cement with alkali content more than _____ should not be used.
8. As per IS 456-2000 minimum reinforcement in slab in either direction is not less than _____% for mild steel reinforcement and _____% for high strength deformed bar.
9. The PH value of pore water is generally between _____.
10. In carbonation carbon dioxide react with calcium hydroxide to form _____.
11. What are the types of maintenance?
12. Write the methods of corrosion protection?
13. Give the various monomers used in polymer concrete.
14. Define stitching.
15. What is shotcrete?

Q.2 Answer the following questions. (Attempt any three)**(15)**

- A) Explain the causes of distress in structures.
- B) Explain preparation done before to start demolition.
- C) Differentiate between retrofitting and rehabilitation of structures.
- D) How one can control sulphate attack on concrete?

- Q.3** A) What is jacketing? Describe various jacketing methods for rehabilitation of columns. (07)
B) Write the significance of cracking of concrete. What are the major causes of cracking in Concrete and how can it be prevented? (08)

OR

- B) Describe all types of polymer concrete. (08)
Q.4 A) List various non-destructive tests for assessment of strength of concrete. Explain Rebound hammer test. (07)

OR

- A) write short note on permeability of concrete. Explain factors affecting permeability of concrete. (07)
B) Enlist and explain long term health monitoring techniques. (08)