

Reg No.: _____

Name: _____

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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Eighth Semester B.Tech Degree (R,S) Examination May 2024 (2019 Scheme)



Course Code: CET456

Course Name: REPAIR AND REHABILITATION OF BUILDINGS

Max. Marks: 100

Duration: 3 Hours

PART A

Answer all questions, each carries 3 marks.

Marks

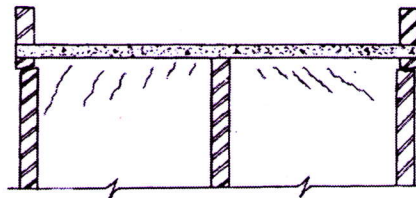
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|----|--|-----|
| 1 | Differentiate between functional and aesthetical damages in buildings | (3) |
| 2 | List any six causes for cracks in buildings | (3) |
| 3 | Differentiate Non-destructive and Semi-destructive testing methods, giving examples | (3) |
| 4 | What are the advantages and limitation of carbonation depth measurement in concrete? | (3) |
| 5 | How is strength and porosity related to each other? | (3) |
| 6 | What are the two methods for quality check in concreting works | (3) |
| 7 | Differentiate between Guniting and Shotcreting. | (3) |
| 8 | What are the applications of quick setting compounds? | (3) |
| 9 | Differentiate between shoring and scaffolding. | (3) |
| 10 | Explain the concept of top down method of building demolition. | (3) |

PART B

Answer any one full question from each module, each carries 14 marks.

Module I

- 11 a) Human errors can be regarded as the main cause of building failures. Justify. (7)
- b) Identify the type of failure shown in figure below. Discuss the characteristics and causes of such failure. (7)



OR

- 12 a) Explain the causes for foundation settlement in buildings. (8)

- b) Explain efflorescence in concrete structures. What are the causes for it? (6)

Module II

- 13 a) Prepare a checklist for visual inspection of buildings for damage assessment. (6)
b) Explain the working principle of Rapid Chloride Penetration Test, with neat sketch (8)

OR

- 14 a) Describe the two types of pull out tests for concrete. Discuss its suitability (8)
b) Explain the factors affecting the penetration resistance in concrete (6)

Module III

- 15 a) What are the causes for sulphate attack in concrete? What are the measures to control it? (8)
b) How do physical properties of aggregate affect the strength and durability of concrete? (6)

OR

- 16 a) How does exposure to higher temperature affect the strength of concrete? (6)
b) Explain surface preparation for steel reinforcement repairing works. (8)

Module IV

- 17 a) Elaborate on various factors that influence selection of materials for building repair. (6)
b) What is a Self Compacting Concrete (SCC)? What are the specific tests conducted for SCC to measure its flowability? (8)

OR

- 18 a) What is a Fibre Reinforced Concrete? What are the factors affecting its properties? (6)
b) Discuss on the use of industrial wastes in concrete, as replacement of its constituents. (8)

Module V

- 19 a) Explain different types of shoring with neat sketches. (8)
b) Explain jacketing method of strengthening columns and beams. What are the different materials used for jacketing? (6)

OR

- 20 a) Describe any two methods for prevention of corrosion in buildings. (6)
b) Explain the process of implosion by delayed detonation. (8)
