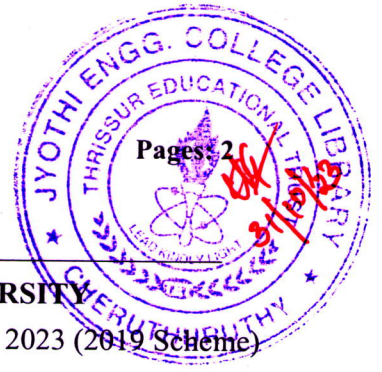


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Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

Eighth Semester B.Tech Degree Supplementary Examination October 2023 (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

- |    |   |     |
|----|---|-----|
| 1  | List the various damages of masonry structures  | (3) |
| 2  | Differentiate between retrofitting and rehabilitation.  | (3) |
| 3  | How does rebound hammer test help in assessing quality of concrete?   | (3) |
| 4  | What is proof load test? Why do we conduct it? Not mentioned in syllabus  | (3) |
| 5  | Which are the external and internal factors affecting durability of concrete?   | (3) |
| 6  | List the various surface preparation methods for repairing  | (3) |
| 7  | Differentiate between routine maintenance and preventive maintenance.   | (3) |
| 8  | What is fibre reinforced concrete? Why do we prefer fibre reinforced concrete as a repair material than ordinary concrete?          | (3) |
| 9  | Explain cathodic protection of reinforcement bars.  | (3) |
| 10 | Differentiate between explosive and non-explosive demolition techniques. List any two equipments used for non-explosive demolition. | (3) |

**PART B**

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

**Module I**

- 11 Explain the various causes of cracking in concrete buildings (14)

**OR**

- 12 Which are the possible ways by which damages to masonry buildings can be controlled? (14)

**Module II**

- 13 a) Explain the test procedure for 1) Windsor Probe test 2) Pull out test (8)
- b) What is the purpose of conducting half-cell potential test for reinforced concrete? Draw a schematic diagram for the test set up marking its component parts. (6)

**OR**

- 14 Outline the assessment procedure for a damaged structure using a flow chart and explain the various steps involved. (14)

**Module III**

- 15 Explain the major factors which cause corrosion to reinforcement in concrete. (14)

**OR**

- 16 Explain the behaviour of concrete at elevated temperature (14)

**Module IV**

- 17 Write short notes on: (14)

- 1) Shotcreting and guniting (3 marks)
- 2) High performance concrete (4 marks)
- 3) Geopolymer concrete (4 marks)
- 4) Reactive powder concrete (3 marks)

**OR**

- 18 a) Enumerate the desirable properties of repair materials (6)  
b) Explain the various types of protective coating for reinforcement (8)

**Module V**

- 19 a) Explain any three types of column jacketing with neat figures (9)  
b) Explain shoring and underpinning (5)

**OR**

- 20 a) How will you restore fire damaged structural components? (8)  
b) Write short notes on (6)  
(1) Wrecking ball method  
(2) Concrete sawing  
(3) Hydraulic crusher

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