Reg. No. : | | | | | | | | | | |

Question Paper Code: 31187

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2017

Elective

Civil Engineering

01UCE905 - REPAIR AND REHABILITATION OF STRUCTURES

(Regulation 2013)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. Define the term maintenance.
2. Define the term defect and crazing.
3. What is meant by coefficient of thermal expansion on concrete?
4. What do you mean by structural cracks?
5. Write the mechanism of accelerators.
6. Write short note on Geo-polymer concrete.
7. What are corrosion inhibitors?
8. What do you mean by underpinning?
9. Mention the need for strengthening of concrete structures.
10. What do you mean by engineering demolition?

PART - B (5 x 16 = 80 Marks)

11. (a) (i) Discuss about the facts and importance of maintenance in civil engineering projects. (8)

(ii) Briefly explain the various stages of repair in concrete structures. (8)

Or

(b) With a flow chart explain the assessment procedure for evaluating a damaged structure. (16)

12. (a) (i) Why the quality assurance for structures is needed? Explain the components of quality assurance for building. (10)

(ii) Briefly explain the effect of chemicals on concrete. (6)

Or

(b) (i) Discuss in detail the thermal properties of concrete. (8)

(ii) Discuss about the effects on hardened concrete due to climate. (8)

13. (a) (i) How the excess water is extracted from concrete by vacuum pressure? Write uses of vacuum concrete. (8)

(ii) Discuss in detail the high performance concrete. (8)

Or

(b) Explain in detail about the manufacturing procedure and applications of sulphur infiltrated concrete. (16)

14. (a) Detail the various non-destructive tests done to evaluate the strength of existing building. (16)

Or

(b) Explain in detail any two corrosion protection methods. (16)

15. (a) How do you demolish a high raise building situated in densely populated area? Explain in detail. (16)

Or

(b) How do you repair and rehabilitate a structure distressed due to fire? Explain in detail. (16)

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