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Question Paper Code: 49105

B.E./B.Tech. DEGREE EXAMINATION, APRIL 2018

Elective

Civil Engineering

14UCE905- REPAIR AND REHABILITATION OF STRUCTURES

(Regulation 2014)

Duration: Three hours

Maximum: 100 Marks

PART A - (10 x 1 = 10 Marks)

(Answer all Questions)

1. The porosity of concrete mainly depends upon CO1- R
(a) Grading of aggregate (b) Cement content (c) water quality (d) All the above
2. The sulphate attack can be controlled by CO1- R
(a) Air entrainment (b) High alumina cement (c) Pozzolana (d) All the above
3. For preparing mortar _____ is used along with cement and water CO2-U
(a) Aggregates (b) Bricks (c) Sand (d) Steel
4. Concrete has a good resistant against CO2- R
(a) Cavitation (b) Corrosion (c) Abrasion (d) All the above
5. Aerated concrete is suitable for applications such as CO3- R
(a) Filter wall (b) Wall insulation (c) Fire protection (d) All the above

6. Cracks may be considered as problematic, if they are CO3- U
- (a) Aesthetically unacceptable (b) Structure non water tight
(c) Affect the durability (d) All the above
7. Shotcrete concrete contains a well graded aggregates of CO4-U
- (a) 10mm or less in size (b) 20mm or less in size
(c) 10mm or more in size (d) None of the above
8. Dry pack is used for the repair of CO4- U
- (a) Dormant cracks (b) Filling (c) Growing cracks (d) All the above
9. The principle of rebound hammer test is CO5- R
- (a) Impacting the concrete surface (b) Impacting the body of concrete
(c) Impact the edge of the concrete (d) None of the above
10. One of the method adopted for protecting corrosion is CO5- U
- (a) painting (b) Distempering (c) varnishing (d) Cleaning

PART – B (5 x 2= 10Marks)

11. What do you mean by rehabilitation of a structure? CO1- R
12. What is the necessary of providing cover in concrete? CO2- R
13. List out any three special concretes. CO3- R
14. Define epoxy injection. CO4- R
15. Why demolition is necessary? CO5- R

PART – C (5 x 16= 80Marks)

16. (a) Explain the various causes for the deterioration of concrete structures. CO1- App (16)
- Or
- (b) Elaborate in detail the assessment procedure for evaluating the damaged structure , with a flow diagram. CO1-App (16)
17. (a) Write the factors influencing corrosion of reinforcement. Explain the damage in RC structures due to corrosion in reinforcement CO2 -Ana (16)
- Or
- (b) Briefly explain the chemical attack on concrete with its preventive measures. CO2 -U (16)
18. (a) Write short notes on CO3- Ana (16)
- (i) Vacuum concrete
- (ii) Geopolymer concrete
- (iii) Reactive powder concrete.
- Or
- (b) Describe in detail about the self compacting concrete and concrete with industrial wastes. CO3 -Ana (16)
19. (a) With the aid of neat sketches , explain any two Non destructive testing techniques. CO4- U (16)
- Or
- (b) Summarize in detail about the corrosion protection techniques. CO4 -E (16)
20. (a) What is the need of strengthening. Explain various strengthening techniques for structural elements. CO5- U (16)
- Or
- (b) Illustrate the term demolition. Also discuss the techniques available for demolition of a building structure, explain any one in detail. CO5- C (16)

