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Question Paper Code : 20186

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2012.

Eighth Semester

Civil Engineering

CE 2071/080100066 — REPAIR AND REHABILITATION OF STRUCTURES

(Regulation 2008)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — ($10 \times 2 = 20$ marks)

1. Distinguish between Repair and Rehabilitation.
2. Write the importance of maintenance.
3. Explain the importance of "coefficient of thermal expansion" with respect to strength of concrete.
4. Discuss briefly the effects due to "climate".
5. Classify cracks based on its thickness.
6. What are the applications of expansive cement?
7. What do you mean by critical length of fibre?
8. What is a dry pack?
9. What are the characteristics of good coatings?
10. What do you mean by weathering corrosion?

PART B — ($5 \times 16 = 80$ marks)

11. (a) With a graph explain the service life behavior of a concrete structure. Also explain in detail about time based maintenance.
Or
(b) Explain the causes and effects of any four defects in concrete structures.

12. (a) With chemical equations, explain the mechanism of corrosion.
Or
(b) With sketches explain the possible design and constructional errors.
13. (a) Explain in detail about the special materials manufacturing procedure and application of polymer modified concrete.
Or
(b) With respect to fibre reinforced concrete explain aspect ratio and volume fraction. Also explain their effects on fresh and hardened concrete properties. Explain with its stress – Strain curve
14. (a) Explain in detail :
(i) Foamed concrete (8)
(ii) Vacuum concrete. (8)
Or
(b) Explain in detail any two corrosion protection methods. (8 + 8 = 16)
15. (a) With sketches explain how do you improve the load carrying capacity of columns and beams.
Or
(b) How do you repair and rehabilitate a structure distressed due to fire?
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