KUMARAGURU
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Register Number: ……..

B.E DEGREE EXAMINATIONS: NOV 2015

(Regulation 2009)

Seventh Semester

CIVIL ENGINEERING

CEE220:Repair and Rehabilitation of Structures

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. The modification of a structure partly or wholly is damaged in appearance or serviceability is called as……

   a) Maintenance b) Rehabilitation

   c) Repair d) Strengthening

2. Daily Maintenance such as checking function of ……..

   a) Electrical Accessories b) Sewer

   c) Floor Cracks d) White Washing

3. ……is a measure of the rate at which temperature change within the mass take place.

   a) Co-efficient of thermal expansion b) Cracking

   c) Thermal conductivity d) Thermal diffusivity

4. Galvanized reinforcement consists of dipping of steel bar in

   a) Molten Iron b) Molten Zinc

   c) Molten Copper d) Molten Calcium

5. The main technique of polymer concrete is to minimize ….. volume in aggregate.

   a) Voids b) Porosity

   c) Strength d) Durability

6. Which of the following is advantage of ferro cement

   a) Cost of construction is more b) Reduction in self weight

   c) Increase in self weight d) Thick and heavy concrete

7. Name the adhesive that can be used in concrete.

   a) Ferro cement b) Shotcrete

   c) Epoxy resins d) Gunite

8. The process of applying mortar mix under pressure for enhancing properties of voids and porosity

a) Guniting
b) Corrosion inhibitors
c) Epoxy Injection
d) Shotcrete

9. The inherent ability of concrete to heal cracks within …….. healing.

a) Stitching
b) Autogenous
c) External
d) Overlay

10. On the tension side of the beam ……. mm steel plates are added to the existing beam to increase its capacity.

a) 5 to 6
b) 3 to 4
c) 4 to 5
d) 2 to 3

PART B (10 x 2 = 20 Marks)

11. List out the causes of deterioration of concrete structures?
12. What are the two facets of maintenance?
13. Catalog any four durability parameters of the structure.
14. State the Alkali – Aggregate reaction in concrete.
15. Bring up the various types of polymer concrete.
16. Describe sulphur infiltrated concrete?
17. Mark the different strengthening methods of concrete structures.
18. Briefly discuss about repairing of concrete floors?
19. List out any two reasons for demolition of structures.
20. Name any four methods of demolition of damaged structures.

PART C (5 x 14 = 70 Marks)

21. a) With a flow chart, explain the assessment procedure for evaluating damages in a structure.

(OR)

b) Clarify the various casus for deterioration of concrete structures

22. a) Explain the following properties of concrete, a) Climatic condition, b) Thermal properties, c) Permeability, d) Temperature.

(OR)

b) Explain in detail about the quality assurance for concrete construction.

23. a) Give details the various corrosion protection methods with neat sketches.

(OR)

b) Briefly explains the different types of fibre and its advantages.

24. a) An RCC building is under distress due to rebar corrosion. Columns, beams and slabs are under the cracks. The age of the building is 30 years. Give the flow chart for diagnosis and suitable repair scheme.

(OR)

b) An RCC beam needs to be strengthened to take additional load. Suggest necessary strengthening method including materials.

25. a) What are the techniques involved in demolition explain in detail.

(OR)

b) Explain demolition process of a damaged structure.

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