

B.E., DEGREE EXAMINATIONS: MAY/JUNE 2013

Sixth 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. Steel structure is likely to come in contact with water. To prevent rusting
 - a) Apply bitumen coat
 - b) Apply anti- corrosive coat
 - c) Varnish paint
 - d) Slacked lime coat
2. One of the ill effects of exposure of reinforcement is
 - a) Reduction in tensile strength of steel
 - b) Reduction in steel section
 - c) Reduction in bond section
 - d) Gradual decrease in RC section
3. The most appropriate cement for repairing cracks in RCC work is
 - a) Portland cement
 - b) Expansive cement
 - c) Quick setting cement
 - d) Low heat cement
4. Most suitable method of protecting steel columns of a multistoried building against rusting is to
 - a) Paint with aluminium paint
 - b) Paint with red oxide
 - c) Paint with bitumen paint
 - d) Encase in concrete
5. Deflection was noticed in a newly constructed properly designed RCC beam. It may be due to
 - a) Very long span
 - b) Diagonal cracks near edge of the support
 - c) Insufficient concrete cover
 - d) Early removal of formwork
6. The defect due to more oil in paint is
 - a) Wrinkling
 - b) Exudation
 - c) Scaling
 - d) Rubbing
7. Termite make the timber
 - a) Crack
 - b) Porous
 - c) Moist
 - d) Wet and dry rot
8. Deep and wide cracks in concrete members can be repaired by
 - a) Guniting
 - b) Grouting
 - c) Epoxy injecting
 - d) Mortar replacing

9. The defect, improper use of structure means
- | | |
|----------------------|-------------------------|
| a) Improper loading | b) Improper workmanship |
| c) Improper material | d) Improper climate |
10. An economical and effective demolition technique is
- | | |
|------------------------|-------------------------|
| a) Hydro- demolition | b) Explosive demolition |
| c) Blasting demolition | d) Chemical demolition |

PART B (10 x 2 = 20 Marks)

11. Define Repair and Rehabilitation.
12. What are the causes of deterioration?
13. What the factors affecting chemical attack on concrete?
14. List any four causes of cracks.
15. What are the applications of Sulphur infiltrated concrete?
16. What is Guniting and Shotcrete?
17. What is meant by Autogenous healing?
18. What is meant by Epoxy coatings.
19. What are the major factors in selecting a demolition procedure?
20. In what cases demolition by machine can be done?

PART C (5 x 14 = 70 Marks)

21. a) What is the need of periodical inspection of structures? Describe the steps in the assessment procedure for evaluate damages in a structure.
(OR)
- b) Describe in detail about the repair aspect of maintenance of structures.
22. a) Define permeability of concrete. What are the effects of permeability in decreasing the durability concrete? Explain.
(OR)
- b) What are the various errors that take place during construction? How to minimise those errors? Describe.
23. a) Write short notes on the following:
(i) Ferro-cement (7)
(ii) Fibre reinforced concrete (7)
(OR)
- b) Explain the various methods of corrosion protection in rebar.

24. a) What are the various techniques adopted for repair of cracks? Explain any four of them to arrest cracking.

(OR)

b) Explain commonly used methods for strengthening of flexural members. Give suitable examples.

25. a) Explain about the various Engineering demolition techniques in detail.

(OR)

b) Describe in detail about any case study on demolition Dilapidated structures.
