

Total No. of Questions: 6

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Enrollment No.....



Faculty of Engineering
End Sem (Even) Examination May-2018
CE3EL04 Building Maintenance & Repairs

Programme: B.Tech.

Branch/Specialisation: CE

Duration: 3 Hrs.

Maximum Marks: 60

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

- Q.1 i. The major causes of deterioration of concrete having temperature below 0°C. **1**
(a) Wearing (b) Freezing and Thawing
(c) Erosion (d) None of these
- ii. Which one of the chemical is major cause of corrosion in reinforcement? **1**
(a) Carbon dioxide (b) Chloride
(c) Sulphate (d) Manganese
- iii. Which one of them is not a classification of maintenance? **1**
(a) Preventive (b) Remedial (c) Routine (d) Machinery
- iv. The process of restoring something that is damaged or deteriorate or broken, to good condition is called **1**
(a) Repair (b) Maintenance
(c) Rehabilitation (d) None of these
- v. Which one of the monomer is used in impregnated polymer concrete? **1**
(a) Methyl methacrylate (b) Acrylonitrile
(c) Styrene (d) All of these
- vi. Which one them is a concrete chemicals used in concrete structure for repair. **1**
(a) Accelerators (b) Retarders
(c) Plasticizers (d) All of these

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[2]

- vii. Shotcrete is used in the application of **1**
(a) Soil stabilization
(b) Waterproofing
(c) Stabilization of rock slopes
(d) None of the above
- viii. The Ferrocement is a composite material obtained by **1**
(a) Random dispersal of short, discontinuous fibres in conventional concrete.
(b) Reinforcing the cement mortar with steel fibres in the form of wire mesh.
(c) Blending ferrous compounds in the ordinary Portland cement
(d) None of the above
- ix. Before proceeding with the repair of the cracks, diagnosis is made to determine the **1**
(a) Location and extent of cracking
(b) Causes of cracking
(c) Likely extent of further deterioration
(d) All of the above
- x. The weak spots in a concrete member can be identified by **1**
(a) Tapping the surface and observing the sound of hollow areas
(b) Opening up the suspected weak concrete
(c) Non-destructive tests
(d) All of the above
- Q.2 i. Describe Corrosion Inhibitors. **2**
ii. Explain the effect due to wear and erosion of concrete in building structure. **3**
iii. Explain in detail the sulphate attack and chloride attack on concrete structure with suitable chemical equations. **5**
- OR iv. Explain in detail the design and construction errors. **5**
- Q.3 i. What is Maintenance? **2**
ii. Describe the steps in assessment procedure for evaluating damages in a structure with neat flow chart. **8**

[3]

- OR iii. Explain various causes for deterioration of concrete structure. **8**
- Q.4 i. What is Expansive cement? **3**
ii. Explain polymer impregnated concrete, its properties and applications. **7**
- OR iii. What are sulphur infiltrated concrete? Describe its properties and applications. **7**
- Q.5 i. Write four techniques to repair cracks developed in building. **4**
ii. Write techniques for repair of structure to overcome the low member strength. **6**
- OR iii. Write a short note on shoring and underpinning. **6**
- Q.6 Attempt any two:
i. Describe preliminary procedure in demolition of structure. **5**
ii. Describe in detail about the various engineering techniques of demolition. **5**
iii. Explain explosive and non explosive methods of demolition. **5**
