

**B.Tech. Civil (Construction Management)/  
B.Tech. Civil (Water Resources Engineering)/  
BTCLEVI**

**Term-End Examination**

00911

**December, 2015**

**ET-204(B) : ENGINEERING MATERIALS**

*Time : 3 hours*

*Maximum Marks : 70*

**Note :** Attempt any **five** questions. All questions carry equal marks.

1. (a) Describe how the compounds of clinker affect the properties of cement. 7
- (b) Explain how the normal consistency is determined. What is its significance? 7
2. (a) Explain how the following tests on bitumen are performed in the laboratory : 7
  - (i) Ductility test
  - (ii) Viscosity test
- (b) Explain the Marshall method of bituminous mix design. 7

3. (a) Explain the following terms in detail : 7  
 (i) Grout  
 (ii) Guniting
- (b) Explain the effect of sea water, oil and acids on cement mortar. 7
4. (a) What is the necessity of non-destructive testing ? Discuss its advantages. 7  
 (b) Discuss the factors affecting workability of concrete. 7
5. (a) Discuss the various types of defects of paints. 7  
 (b) Briefly describe the effect of heat and moisture on gypsum. 7
6. (a) What are the ceramic materials ? Discuss the thermal and electrical properties of ceramic materials. 7  
 (b) Describe the details about the ready mix concrete. 7
7. (a) What is the use of miniature circuit breakers ? Explain its features. 7  
 (b) Discuss the manufacturing of plastics. What are its applications in the building works ? 7
8. Write short notes on the following :  $4 \times 3 \frac{1}{2} = 14$   
 (a) Concrete Floorings  
 (b) Lime Concrete Terracing  
 (c) Plywood  
 (d) Cable Trunking
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