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**Diploma in Civil Engineering / Diploma
in Electrical & Mechanical Engineering
DCLEVI/ACCLEVI**

**Term-End Examination
June, 2012**

BET-015 : ENGINEERING MATERIALS

Time : 2 hours

Maximum Marks : 70

Note : Question number 1 is compulsory. Attempt any four more questions from the remaining questions. All questions carry equal marks.

1. Choose the correct alternative. 7x2
- (a) Geologically lime stone is :
- (i) Igneous rock
 - (ii) Sedimentary rock
 - (iii) Metamorphic rock
 - (iv) Stratified rock
- (b) The minimum crushing strength of 1st class brick should not be less than :
- (i) 140 Kg/cm² (ii) 105 Kg/cm²
 - (iii) 70 Kg/cm² (iv) 35 Kg/cm²
- (c) The initial setting time of ordinary Portland cement as per BIS specifications should not be less than :
- (i) 2 minutes (ii) 5 minutes
 - (iii) 10 minutes (iv) 30 minutes

- (d) Le - chatelier method of cement testing is used to test the :
- (i) Soundness
 - (ii) Workability
 - (iii) Setting time
 - (iv) Compressive strength
- (e) One bag of cement has a volume of :
- (i) 50 litres (ii) 35 litres
 - (iii) 35 Kg (iv) 50 Kg
- (f) Polywood has the advantage of :
- (i) greater tensile strength in longer direction
 - (ii) greater tensile strength in shorter direction
 - (iii) same tensile strength in all directions
 - (iv) None of the above
- (g) Bessemer process is used for the manufacture of :
- (i) Pig iron (ii) Cast iron
 - (iii) Wrought iron (iv) Steel
2. (a) Describe the suitability of stones for various types of construction. 7
- (b) Explain the chief ingredients of a good brick - earth. Also state the harmful ingredients in brick - earth. 7
3. (a) Describe the various field tests used to assess the suitability of lime. 7
- (b) Describe the manufacturing of cement by dry process. 7

4. (a) Discuss the process of selection of materials for the preparation of quality concrete. 7
- (b) Explain the different types of concrete with the help of a systematic diagram. 7
5. (a) Draw a cross - section of an exogenous tree and show its various parts. Give a brief description of each part. 7
- (b) What do you mean by seasoning of timber ? 7
- Explain the different methods of sesoning.
6. (a) Describe the process of varnishing a wooden surface. 7
- (b) Discuss the various ways in which stone is used as a facing material. 7
7. Differentiate between the following : 4x3½
- (a) Hard and Soft wood
- (b) Painting and Distempering
- (c) Cement and Lime
- (d) Reinforced cement concrete and Pre - stressed concrete.
8. Write short notes on the following : 4x3½
- (a) Natural Bed
- (b) Hydration of cement
- (c) Stacking of timber
- (d) Functions of paint
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