

DIPLOMA IN CIVIL ENGINEERING
DCLE(G)

Term-End Examination

December, 2012

BET-015 : ENGINEERING MATERIALS

Time : 2 hours

Maximum Marks : 70

Note : Question number 1 is compulsory. Attempt any four more questions out of questions number 2 to 8. All questions carry equal marks.

1. Choose the most appropriate alternative. **7x2=14**
- (a) According to BIS, the size of the brick without the thickness of the mortar joint is :
- (i) 19cm × 9cm × 9cm
 - (ii) 20cm × 10cm × 10cm
 - (iii) 19cm × 9cm × 4cm
 - (iv) 20cm × 10cm × 5cm
- (b) The natural bed of stone is always kept :
- (i) Parallel to applied load
 - (ii) At 90° to applied load
 - (iii) At 45° to applied load
 - (iv) None of the above
- (c) Quick lime is :
- (i) Calcium carbonate
 - (ii) Calcium Hydroxide
 - (iii) Calcium oxide
 - (iv) None of the above

- (d) The trees which grow inwards in a longitudinal fibrous mass are known as :
- (i) Exogenous trees
 - (ii) Conifers Trees
 - (iii) Deciduous Trees
 - (iv) Endogenous Trees
- (e) The base material for distemper is :
- (i) Linseed Oil
 - (ii) Chalk Oil
 - (iii) Kerosene Oil
 - (iv) Acetate of lead
- (f) Laminated glasses are made by :
- (i) Glueing only
 - (ii) Resin bonding
 - (iii) Heat and Pressure
 - (iv) None of the above
- (g) Plywood has the advantage of :
- (i) same tensile strength in all direction
 - (ii) greater tensile strength in longer direction
 - (iii) greater tensile strength in shorter direction
 - (iv) none of the above
2. (a) Explain the Geological classification of rocks. 7
- (b) Discuss various points which should be given consideration for preservation of stone work. 7

3. (a) Describe uses of first class, second class and third class bricks. 7
(b) Explain various steps in the manufacture of tiles. 7
4. (a) Explain the manufacturing of cement by dry process. 7
(b) Describe any two field tests of lime. 7
5. (a) What do you mean by "Fineness Modulus of Sand" ? Explain the procedure of determining it. 7
(b) Write names of various types of concrete. Describe use and properties of any one of these. 7
6. (a) Describe Exogenous Trees in terms of their composition. 7
(b) Explain various types of defects in timber due to insects. 7
7. (a) Describe the constituents of an oil paint. 7
(b) Explain functions and properties of a good varnish. 7
8. (a) Discuss various types of polymer product used in construction. 7
(b) Describe various materials used to clad the internal walls of any building. 7
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