

**DIPLOMA IN CIVIL ENGINEERING (DCLE(G)) /
ADVANCED LEVEL CERTIFICATE COURSE IN
CIVIL ENGINEERING (DCLEVI / ACCLEVI)**

Term-End Examination

December, 2016

00252

BET-015 : ENGINEERING MATERIALS

Time : 2 hours

Maximum Marks : 70

Note : *Question number 1 is compulsory. Attempt any four more questions out of questions no. 2 to 8. All questions carry equal marks.*

1. Choose the most appropriate answer from the alternatives given below : $7 \times 2 = 14$
- (a) Quartzite is a
- (i) siliceous rock
 - (ii) argillaceous rock
 - (iii) calcareous rock
 - (iv) aqueous rock
- (b) A good building stone should *not* absorb water more than
- (i) 5%
 - (ii) 10%
 - (iii) 15%
 - (iv) 20%

- (c) The number of bricks required for one cubic metre of brick masonry is
- (i) 400
 - (ii) 450
 - (iii) 500
 - (iv) 550
- (d) For testing the compressive strength of cement, the size of cube used is
- (i) 50 mm
 - (ii) 70.6 mm
 - (iii) 100 mm
 - (iv) 150 mm
- (e) The approximate ratio between the strengths of cement concrete at 7 days and 28 days is
- (i) $\frac{3}{4}$
 - (ii) $\frac{2}{3}$
 - (iii) $\frac{1}{2}$
 - (iv) $\frac{1}{3}$
- (f) The trunk of a tree left after cutting all the branches is known as
- (i) log
 - (ii) batten
 - (iii) plank
 - (iv) baulk

(g) The most commonly used retarder in cement is

- (i) gypsum
- (ii) calcium chloride
- (iii) calcium carbonate
- (iv) None of the above

2. Discuss the important uses of stones. Explain the geological classification of stones. 14
3. Discuss the properties of First class and Second class Bricks. Describe the various operations involved in preparing brick-earth. 14
4. What are the raw materials used in the manufacturing of cement ? Explain in brief, the wet process and dry process of manufacturing of cement. 14
5. (a) Explain the qualities of good concrete. 7
- (b) Discuss the Destructive and Non-Destructive tests of Hardened concrete. 7
6. What are the characteristics of a good timber ? Explain the various types of defects in timber in brief. 14

7. Write the characteristics of an Ideal Paint and also explain the defects in Painting. 14
8. (a) Explain in short the various types of polymer products used in construction. 7
- (b) Distinguish between heat treated glass and insulated glass. 7
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