

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

Term-End-Examination, 2019

BET-015 : ENGINEERING MATERIALS

Time : 2 Hours]

[Maximum marks : 70

Note : Question No.1 is compulsory. Attempt any four more questions from the remaining questions. All questions carry equal marks.

1. Choose the correct alternative : [7×2=14]

(a) A heavy stone is suitable for :

- (i) Retaining walls
- (ii) Arches
- (iii) Rubble masonry
- (iv) Roads

(b) The process of mixing clay, water and other ingredients to make bricks is called :

- (i) Moulding
- (ii) Kneading

- (iii) Tempering
- (iv) Shaping
- (c) The initial setting time of ordinary portland cement as per BIS specifications should not be less than:
 - (i) 10 minutes
 - (ii) 20 minutes
 - (iii) 30 minutes
 - (iv) 1 hour
- (d) Proper amount of entrained air in concrete results in :
 - (i) better resistance to freezing and thawing
 - (ii) less resistance to freezing and thawing
 - (iii) lesser workability
 - (iv) better workability
- (e) Plywood has the advantage of :
 - (i) same tensile strength in all directions
 - (ii) greater tensile strength in longer direction
 - (iii) greater tensile strength in shorter direction
 - (iv) No tensile strength

- (f) The most commonly used retarder in cement is:
- (i) Calcium carbonate
 - (ii) Gypsum
 - (iii) Calcium chloride
 - (iv) None of the above
- (g) A high polymer is used in the preparation of :
- (i) Rubber
 - (ii) Nylon
 - (iii) Plastic
 - (iv) Rayon
2. (a) Describe the characteristics of good building stone. [7]
- (b) Explain the main ingredients of a good brick-earth. Also state the harmful ingredients in brick-earth. [7]
3. (a) Explain the chemical composition of Portland cement. [7]
- (b) Describe various field tests used to assess the suitability of lime. [7]
4. (a) Describe the classification of trees depending upon their mode of growth. [7]

- (b) What do you mean by Seasoning of Timber ?
Explain different methods of seasoning. [7]
5. (a) Discuss the test conducted for workability of
Concrete. [7]
- (b) What do you mean by "Fineness Modulus of
Sand" ? Explain its importance. [7]
6. (a) Briefly describe the characteristics and functions
of an "Ideal Paint". [7]
- (b) Describe the manufacturing of "Rolled Glass" and
its uses. [7]
7. Write short notes on the following : [4×3½=14]
- (a) Dressing of Stones
- (b) Defects in Painting
- (c) Stacking of Timber
- (d) Compaction of Concrete
8. Differentiate between the following : [4×3½=14]
- (a) Hard wood and Soft wood
- (b) Igneous and Sedimentary rocks
- (c) Painting and Distempering
- (d) Reinforced concrete and Prestressed concrete