

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

Term-End Examination

December, 2017

00947

BET-015 : ENGINEERING MATERIALS

Time : 2 hours

Maximum Marks : 70

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

1. Choose the correct alternative.

7×2=14

- (a) The rocks which are formed by gradual deposition are
- (i) Sedimentary rocks
 - (ii) Igneous rocks
 - (iii) Metamorphic rocks
 - (iv) None of the above
- (b) Brick is
- (i) A natural material
 - (ii) Manufactured from clay
 - (iii) A better conductor of heat
 - (iv) Heavier than stone

- (c) The initial setting time of ordinary Portland cement as per BIS specifications should **not** be less than
- (i) 600 minutes
 - (ii) 60 minutes
 - (iii) 30 minutes
 - (iv) 10 minutes
- (d) The property of the ingredients to separate from each other while placing the concrete is called
- (i) Bulking
 - (ii) Shrinkage
 - (iii) Compaction
 - (iv) Segregation
- (e) The strength of timber is maximum along the following direction(s) :
- (i) Parallel to the grains
 - (ii) Perpendicular to the grains
 - (iii) 45° to the grains
 - (iv) In all directions
- (f) Extenders in paints are mainly used for
- (i) Colouring
 - (ii) Easy spreading
 - (iii) Easy washing
 - (iv) Glossy surface

- (g) Laminated glasses are made by
- (i) Gluing only
 - (ii) Resin bonding
 - (iii) Heat and pressure
 - (iv) Heat only
2. (a) Describe the main classification of rocks. 7
- (b) Explain the functions of the various constituents of brick earth. 7
3. (a) Describe the various tests used to assess the suitability of cement. 7
- (b) Explain the slaking and hardening of lime. 7
4. (a) Discuss the qualities of good sand. 7
- (b) Explain the various steps of manufacture of concrete. 7
5. (a) Draw the cross-section of an exogenous tree and explain its various parts. 7
- (b) What do you mean by seasoning of timber ? Discuss the objectives of seasoning. 7

6. (a) Describe the characteristics of an ideal paint. 7
- (b) Discuss the special materials used in plastering. 7
7. Write short notes on the following : $4 \times 3 \frac{1}{2} = 14$
- (a) Deterioration of Stones
- (b) Manufacture of Tiles
- (c) Curing of Concrete
- (d) Defects in Painting
8. Differentiate between the following : $4 \times 3 \frac{1}{2} = 14$
- (a) Stone and Brick as materials of construction
- (b) Quick and Hydrated lime
- (c) Hand and Machine mixing of concrete
- (d) Endogenous and Exogenous trees
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