

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

**Term-End Examination**

**December, 2011**

**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 correct alternatives. 7x2=14

(a) Geologically quartzite is known as :

- (i) igneous rock
- (ii) sedimentary rock
- (iii) metamorphic rock
- (iv) stratified rock

(b) The first class brick should not absorb water more than :

- (i) 15%                      (ii) 20%
- (iii) 25%                    (iv) 30%

- (c) The tiles used for decorative purposes in floors, walls, roof ceilings are known as :
- (i) Encaustic tiles
  - (ii) Common tiles
  - (iii) Paving tiles
  - (iv) Toilet tiles
- (d) The kiln which may work regularly throughout the year, is :
- (i) Clamp
  - (ii) Buci's kiln
  - (iii) Vertical kiln
  - (iv) Hoffmann's kiln
- (e) The characteristics compressive strength of concrete at 28 days of M 10 concrete is :
- (i)  $10 \text{ N/mm}^2$
  - (ii)  $15 \text{ N/mm}^2$
  - (iii)  $20 \text{ N/mm}^2$
  - (iv)  $25 \text{ N/mm}^2$
- (f) The trees that grow inwards in a longitudinal fibrous mass are known as :
- (i) Exogenous
  - (ii) Endogenous
  - (iii) Conifers
  - (iv) Deciduous
- (g) The base material for distemper is :
- (i) linseed oil
  - (ii) kerosene oil
  - (iii) chalk oil
  - (iv) acetate of lead

2. (a) Describe the main classification of rocks. 7
- (b) Discuss the classification and characteristics of bricks as per Bureau of Indian Standards. 7
3. (a) Discuss the chemical composition of ordinary portland cement. Also explain the functions of each ingredient of cement. 7
- (b) Explain the properties and uses of lime. 7
4. (a) How are various ingredients measured for the preparation of cement concrete ? 7
- (b) Discuss the various methods of compaction of concrete. 7
5. (a) Discuss the qualities of good timber. 7
- (b) Explain the various types of defects in timber arising due to fungi. 7
6. (a) Explain the various defects which may develop in painting. 7
- (b) Discuss the manufacturing of rolled glass and its uses. 7

7. Differentiate between the following :  $4 \times 3\frac{1}{2} = 14$

- (a) Hydraulic and Fat lime
- (b) Heat treated and Insulated glass
- (c) Stratified and Unstratified rocks.
- (d) Fine and Coarse aggregate

8. Write short notes on the following :  $4 \times 3\frac{1}{2} = 14$

- (a) Deterioration of stones
  - (b) Workability of concrete
  - (c) Decay of timber
  - (d) Constituents of an Oil Paint.
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