

**DIPLOMA IN MECHANICAL ENGINEERING
(DME)**

Term-End Examination

June, 2015

00030

BCE-025 : ELEMENTARY CIVIL ENGINEERING

Time : 2 hours

Maximum Marks : 70

Note : *Question no. 1 is compulsory. Attempt any four from the remaining questions.*

1. Choose the correct alternative :

7×2=14

(a) The effective size of particles of soil is denoted by

(i) D_{10}

(ii) D_{20}

(iii) D_{15}

(iv) D_{30}

(b) Bolts are most suitable to carry

(i) Shear

(ii) Bending

(iii) Axial tension

(iv) Both (i) and (ii)

- (c) In case of hand mixing of concrete, the extra cement to be added is
- (i) 5%
 - (ii) 10%
 - (iii) 15%
 - (iv) 20%
- (d) Residual soils are formed by
- (i) Glaciers
 - (ii) Wind
 - (iii) Water
 - (iv) None of the above
- (e) The basic perfect frame is
- (i) hexagon
 - (ii) rectangle
 - (iii) triangle
 - (iv) square
- (f) As compared to field rivets, the shop rivets are
- (i) stronger
 - (ii) weaker
 - (iii) equally strong
 - (iv) None of the above
- (g) Inventor of the term Soil Mechanics was
- (i) Newton
 - (ii) Terzaghi
 - (iii) Darcy
 - (iv) None of the above

2. (a) What is the role of a Civil Engineer in construction activities ? 7
- (b) Explain the different parts of a building. 7
3. (a) Represent various constituents of soil with the help of a phase diagram. 7
- (b) Differentiate between the following : 7
- (i) Porosity and Void ratio
- (ii) Plasticity index and Liquidity index
4. (a) Describe the classification of stone masonry. 7
- (b) What types of damp proof treatment are used in buildings ? 7
5. (a) What is workability of concrete and how is workability measured ? 7
- (b) Explain the concreting operations by a flow diagram. 7
6. (a) Explain the different types of welded connections with the help of a neat diagram. 7
- (b) Give the classification of doors based on material, with neat sketches. 7

7. (a) Describe the fixtures and fastenings for doors and windows. 7
- (b) What are the different materials used for flooring? 7
8. (a) Write a brief note on orientation of an airport. 7
- (b) Explain in brief the construction of water-bound macadam road giving a neat sketch. 7
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