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BCE-025

DIPLOMA IN MECHANICAL ENGINEERING (DME)

Term-End Examination

December, 2015

BCE-025 : ELEMENTARY CIVIL ENGINEERING

Time : 2 hours *Maximum Marks : 70*

Note : *Question no. 1 is **compulsory**. Attempt any **four** more questions out of questions no. 2 to 7. All questions carry equal marks. Explain your answers with the help of neat sketches.*

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

(a) The shear strength of a soil

(i) is directly proportional to the angle of internal friction of the soil

(ii) is inversely proportional to the angle of internal friction of the soil

(iii) decreases with the increase in normal stress

(iv) decreases with the decrease in normal stress

(b) Cohesive soil are

(i) good for backfill because of low lateral pressure

(ii) good for backfill because of high shear strength

(iii) poor for backfill because of large lateral pressure

(iv) None of the above

(c) Crushing strength of a good building stone should be more than

(i) 50 MPa

(ii) 100 MPa

(iii) 150 MPa

(iv) 200 MPa

(d) The type of bond provided in brick masonry for carrying heavy loads is

(i) Single flemish bond

(ii) Double flemish bond

(iii) English bond

(iv) Zigzag bond

(e) Tensile strength of concrete is measured by

(i) direct tension test in the universal testing machine

(ii) applying compressive load along the diameter of the cylinder

(iii) applying third point loading on a prism

(iv) applying tensile load along the diameter of the cylinder

(f) Which one of the following types of steel is used in the manufacturing of rails ?

(i) Mild steel

(ii) Manganese steel

(iii) Cast steel

(iv) Bessemer steel

(g) The suitable door for the entrance in an air-conditioned building is a

(i) revolving door

(ii) louvered door

(iii) collapsible door

(iv) swinging door

2. (a) Describe the importance of quantity surveying in any construction project. *7*

(b) Describe in detail shallow foundation and deep foundation. *7*

3. (a) Explain the methods of damp proof treatment. 7

(b) Draw the process diagram of concrete. Explain batching of concrete. 7

4. (a) What do you mean by brick masonry ? Explain the safe permissible loads on brick masonry. 7

(b) Explain different types of trusses with the help of neat sketches. 7

5. (a) Discuss various factors on which strength and durability of concrete depend. 7

(b) Discuss the points considered for deciding the location of windows in a room. 7

6. (a) Discuss the common materials used for flooring. Explain timber flooring. 7

(b) Explain in detail the layouts of an airport with a neat sketch. 7

7. Write short notes on any ***four*** of the following : $4 \times 3\frac{1}{2} = 14$

(a) Importance of road drainage

(b) English bond and Flemish bond

(c) Butt and Fillet welding

(d) Fan light and Sky light

(e) Segregation and Bleeding