

**DIPLOMA IN MECHANICAL ENGINEERING
(DME)**

00703 **Term-End Examination**

June, 2018

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 8. Support your answers with neat sketches. All questions carry equal marks.*

1. Choose the correct answer from the given alternatives : $7 \times 2 = 14$
- (a) In case of perfectly saturated soil, the voids are completely filled with
- (i) Water
 - (ii) Air
 - (iii) Soil
 - (iv) Water and Air

(b) The mix proportion of cement, fine aggregate and coarse aggregate in M 20 concrete is

(i) 1 : 2 : 4

(ii) $1 : 1\frac{1}{2} : 3$

(iii) 1 : 3 : 6

(iv) 1 : 4 : 8

(c) The depression in the face of a brick provided to form a key for holding the mortar is called

(i) Fog

(ii) Header

(iii) Frog

(iv) Stretcher

(d) The width of foundation is calculated as

(i) $t + a$

(ii) $t - a$

(iii) $2(t - a)$

(iv) $2(t + a)$

where, t is thickness of wall and a is offset of concrete.

(e) The type of flooring most preferred in hilly areas is

(i) Timber flooring

(ii) Tile flooring

(iii) Terrazzo flooring

(iv) Stone flooring

(f) The type of window provided on the sloping side of a kitchen roof is called

- (i) Gable window
- (ii) Dormer window
- (iii) Lantern
- (iv) None of the above

(g) A paved path provided for the purpose of allowing aircraft to move to and from the runway and the apron is known as

- (i) Apron
- (ii) Hangar
- (iii) Taxiway
- (iv) Runway

2. (a) Discuss the role of a civil engineer in various construction activities. 7

(b) Explain the various components of a building. 7

3. (a) Discuss in brief the loads on foundation. 7

(b) Describe the various methods of improving bearing capacity of soil. 7

4. (a) Discuss the various points required to be kept in mind while supervising the brickwork. 7
- (b) Explain the different methods of damp proof treatment in a building. 7
5. (a) What do you mean by concrete ? Explain its uses. 7
- (b) Describe the procedure to carry out the test on bulking of sand. 7
6. (a) Briefly describe different types of trusses with the help of a neat sketch. 7
- (b) Classify the roads based on location. 7
7. (a) Explain the important points to be kept in mind while making provisions for windows in a room. 7
- (b) Describe the different types of hinges commonly used for doors and windows. 7
8. (a) Discuss the various materials commonly used for flooring. 7
- (b) What do you mean by waterproofing ? Explain the construction procedure of damp proofing of an external wall. 7