

**DIPLOMA IN MECHANICAL ENGINEERING
(DME)**

Term-End Examination

December, 2013

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. All questions carry equal marks.

1. Choose the correct alternatives : 7x2=14
- (a) A soil mass consist of :
- (i) air and water
 - (ii) air and solids
 - (iii) water and solids
 - (iv) air, water and solids
- (b) While laying bricks in wall, frog of the brick must be kept at :
- (i) top
 - (ii) bottom
 - (iii) middle
 - (iv) any where
- (c) The mix proportion of M-15 concrete is :
- (i) 1 (cement): 1½ (fine aggregate) : 3 (coarse aggregate)
 - (ii) 1 (cement): 2 (fine aggregate) : 4 (coarse aggregate)
 - (iii) 1 (cement): 3 (fine aggregate) : 6 (coarse aggregate)
 - (iv) 1 (cement): 5 (fine aggregate) : 10 (coarse aggregate)

- (d) The structural members carrying compressive load in a truss are called :
- (i) column
 - (ii) tension members
 - (iii) struts
 - (iv) compression members
- (e) The height of door can be determined by the following formula :
- (i) Height = Width + 4.2m
 - (ii) Height = Width + 3.2m
 - (iii) Height = Width + 2.2m
 - (iv) Height = Width + 1.2m
- (f) For lime plastering, the ratio of lime and sand is :
- (i) 1 : 2
 - (ii) 1 : 1
 - (iii) 1 : 3
 - (iv) 1 : 4
- (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) hanger
 - (ii) apron
 - (iii) taxiway
 - (iv) runway
2. (a) Describe the various components of a building. 7
- (b) Discuss the role of civil engineer in various construction activities. 7
3. (a) Explain the requirement of a good location for foundation. 7

- (b) Discuss the methods of improving the bearing capacity of soil. 7
4. (a) Discuss the points required to be observed while supervising the stone work. 7
- (b) Explain the formation of an English bond with the help of neat sketch. 7
5. (a) Describe the advantages and disadvantages of using concrete in construction work. 7
- (b) What do you mean by bulking of sand ? Discuss the procedure of determining it. 7
6. (a) Explain . different types of bolted connections. 7
- (b) Describe the design of windows in a room. 7
7. (a) Discuss the main objectives of providing pointing and plastering to the exposed surfaces. 7
- (b) Describe the various components of an airport. 7
8. Write short notes on the following : $4 \times 3\frac{1}{2} = 14$
- (a) Width and depth of a shallow foundation
- (b) Bonding in brick work
- (c) Grades of concrete
- (d) Door frames
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