

**DIPLOMA IN MECHANICAL ENGINEERING  
(DME)**

**00297 Term-End Examination  
December, 2017**

**BCE-025 : ELEMENTARY CIVIL ENGINEERING**

*Time : 2 hours*

*Maximum Marks : 70*

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**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.*

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1. Choose the correct alternative.  $7 \times 2 = 14$
- (a) The distance between the inner faces of the rails in case of a broad gauge track is
- (i) 1.676 m
  - (ii) 1.000 m
  - (iii) 0.765 m
  - (iv) 0.500 m

- (b) The characteristic compressive strength of M 15 concrete at 28 days curing expressed in  $\text{N/mm}^2$  is
- (i) 10
  - (ii) 15
  - (iii) 20
  - (iv) 25
- (c) An assemblage of stone blocks laid with mortar is called
- (i) Stone pitching
  - (ii) Stone soling
  - (iii) Stone masonry
  - (iv) Stone assemblage
- (d) The throat thickness of a normal fillet weld for  $60^\circ$  to  $90^\circ$  angle between fusion faces is equal to
- (i)  $2 \times$  size of weld
  - (ii)  $1.5 \times$  size of weld
  - (iii) the size of weld
  - (iv)  $0.7 \times$  size of weld
- (e) Dampness promotes and accelerates the growth of
- (i) Termites
  - (ii) Ants
  - (iii) Fungi
  - (iv) Both ants and fungi

- (f) The common criteria for sizes of doors in India is
- (i) Width = Height
  - (ii) Width =  $(0.4 \text{ to } 0.6) \times \text{Height}$
  - (iii) Width =  $0.2 \times \text{Height}$
  - (iv) Width =  $0.3 \times \text{Height}$
- (g) The hard surfaced straight path, used for taking off and landing within a landing area is known as
- (i) Hangers
  - (ii) Taxiways
  - (iii) Runways
  - (iv) Aprons
2. (a) Briefly discuss the various disciplines in Civil Engineering. 7
- (b) Explain the basic parts of a building with the help of a systematic diagram. 7
3. (a) Why is soil called as a three-phase system ? Explain in brief soil phases. 7
- (b) Describe the procedure of determining width and depth of shallow foundations. 7

4. (a) Discuss the various points required to be kept in mind while supervising stonework. 7
- (b) Explain the purpose of bond in brick-work. 7
5. (a) Discuss the various factors on which strength and durability of concrete depends. 7
- (b) Explain the process diagram of concrete operations. 7
6. (a) Describe bolted connections with the help of a neat sketch. 7
- (b) Briefly describe the various components of an airport. 7
7. (a) Explain the various factors required to be considered while locating a door in a room. Also write the commonly used sizes of doors in India. 7
- (b) Describe the various types of window movements. 7
8. (a) Discuss the materials commonly used for damp proofing. 7
- (b) Explain the various types of plastering. 7
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