

## Diploma in Civil Engineering

### Term-End Examination

December, 2007

#### BCE-024 : CONSTRUCTION TECHNOLOGY – I

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 7. All questions carry equal marks.

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1. Choose the correct alternatives : 7×2=14

- (a) Pile foundations are generally preferred
  - (i) for bridge foundation
  - (ii) for skyscraper buildings
  - (iii) for low cost residential buildings
  - (iv) for runways
  
- (b) The  $19 \times 9$  cm side of a brick as seen in the wall face, is generally known as
  - (i) stretcher
  - (ii) face
  - (iii) front
  - (iv) header

- (c) A first class brick when immersed in cold water for 24 hours should not absorb water more than
- (i) 15%
  - (ii) 20%
  - (iii) 22%
  - (iv) 25%
- (d) The lintels are preferred to arches because
- (i) arches require more headroom to span
  - (ii) arches require strong abutments to withstand arch thrust
  - (iii) arches are difficult in construction
  - (iv) all the above
- (e) The vertical distance between the springing line and highest point of the inner curve of an arch is known as
- (i) intrados
  - (ii) rise
  - (iii) spandril
  - (iv) extrados
- (f) The frog of the brick in a brick masonry is generally kept on
- (i) bottom face
  - (ii) top face
  - (iii) shorter side
  - (iv) longer side

- (g) A queen closer is a
- (i) brick laid with its length parallel to the face or direction of wall.
  - (ii) brick laid with its breadth parallel to the face or direction of wall.
  - (iii) brick having the same length and depth as the other bricks but half the breadth.
  - (iv) brick with half the width at one end and full width at the other.
2. (a) Describe the tests used for site investigation. Explain 'plate load test' for soil exploration. 7
- (b) Explain under-reamed piles with neat sketch. 7
3. (a) What are the different functions served by walls in buildings ? What are the common materials used for construction of walls ? 7
- (b) What are different types of retaining walls ? Explain any two of them. 7
4. (a) What are the common types of stones used in building construction and in what situations are they used ? 7
- (b) What are the common types of blocks used in masonry works ? Explain in detail. 7
5. (a) Explain how post construction anti-termite treatment is carried out in buildings. 7

- (b) Name the different types of scaffolding which are most commonly used and describe any two with the help of neat sketches. 7
6. (a) What types of flooring on ground floor do you recommend for the following ? Explain with reasons. 7
- (i) Operation theatre
  - (ii) Dancing hall
  - (iii) Five star hotels
- (b) List the various types of materials used in construction of upper floor. Also discuss the various factors you would consider in their choice or selection. 7
7. (a) What is a parliamentary hinge and when is it used in the doors ? 7
- (b) Discuss the points considered for deciding the location of windows in a room. What is a fan light and why is it provided ? 7