

**Diploma in Civil Engineering**  
**Term-End Examination**  
**June, 2008**

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

*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.*

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1. Choose the correct alternatives :

7×2

(a) A grillage foundation

- (i) is provided for heavily loaded isolated columns
- (ii) is treated as spread foundation
- (iii) consists of two sets of perpendicularly placed steel beams
- (iv) all the above

(b) The type of bond in which every course contains both header and stretchers, is called

- (i) English bond
- (ii) Flemish bond
- (iii) Russian bond
- (iv) Mixed bond

- (c) The crushing strength of a first class brick should **not** be less than
- (i)  $3.5 \text{ N/mm}^2$
  - (ii)  $7.0 \text{ N/mm}^2$
  - (iii)  $10.5 \text{ N/mm}^2$
  - (iv)  $14.0 \text{ N/mm}^2$
- (d) In the construction of arches, sand box method is used for
- (i) centring
  - (ii) actual laying of arch work
  - (iii) striking of centring
  - (iv) None of the above
- (e) Depth or height of the arch is the
- (i) perpendicular distance between intrados and extrados
  - (ii) vertical distance between springing line and intrados
  - (iii) perpendicular distance between springing line and extrados
  - (iv) None of the above
- (f) The nominal size of modular brick is
- (i)  $190 \times 90 \times 80 \text{ mm}$
  - (ii)  $190 \times 190 \times 90 \text{ mm}$
  - (iii)  $200 \times 100 \times 100 \text{ mm}$
  - (iv)  $200 \times 200 \times 100 \text{ mm}$

(g) 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

2. (a) What are the causes for settlement of foundation ? Explain the principal factors while selecting the depth of a foundation. 7

(b) Explain the design steps of wall footing. Explain Caisson foundation with the help of a neat sketch. 7

3. (a) Explain in detail how you would proceed with the construction of plywood partitions in an office building. 7

(b) Explain the purpose of providing a bond in the construction of brick works. What are the various types of bonds used in brick masonry ? Explain English and Flemish bond with sketch. 7

4. (a) What are the relative advantages and disadvantages of brick and stone masonry constructions ? 7

(b) Discuss the characteristics of material commonly used as a damp proofing course or in damp proof construction. Describe various methods of damp proofing. 7

5. (a) Write a brief note on the classification of arches and enumerate, with the help of sketches, various types of arches based on its shape. 7
- (b) Explain the procedure of constructing the following types of flooring : 7
- (i) Terrazzo flooring
- (ii) Cement Concrete flooring
- (iii) Mosaic flooring
6. (a) Enlist and explain with sketch any seven types of hinges used in doors and windows. 7
- (b) What are the advantages of flush doors ? Explain the classification of flush doors. 7
7. (a) Normally, what percentage of floor area is provided for window openings ? Explain types of window movement with their sub-division. 7
- (b) Explain various types of glass used in construction of doors and windows. 7