



Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS/B.Tech/CE(O)/SEM-3/CE-306/2012-13**

**2012**

**BUILDING MATERIALS AND CONSTRUCTION**

Time Allotted : 3 Hours

Full Marks : 70

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words  
as far as practicable.*

**GROUP – A**

**( Multiple Choice Type Questions )**

1. Choose the correct alternatives for any *ten* of the following : 10 × 1 = 10
  - i) Water absorption for 1st class bricks should not be more than
    - a) 12%
    - b) 15%
    - c) 20%
    - d) 25%.
  - ii) The size of fine aggregate should be less than
    - a) 20 mm
    - b) 40 mm
    - c) 4.75 mm
    - d) 10 mm.
  - iii) Seasoning of timber is required to
    - a) soften the timber
    - b) harden the timber
    - c) straighten the timber
    - d) remove sap from the timber.



- iv) Slump test for concrete is carried out to determine
- a) strength
  - b) durability
  - c) workability
  - d) water content.
- v) A projected stone in masonry wall provided to serve as a support to joist or truss is known as
- a) coping
  - b) cornice
  - c) corbel
  - d) key stone.
- vi) The type of pile which is driven at an inclination to resist inclined forces is known as
- a) friction pile
  - b) sheet pile
  - c) batter pile
  - d) anchor pile.
- vii) Minimum thickness of wall where single flemish bond can be used is
- a) half brick
  - b) one brick
  - c) one and a half brick
  - d) two bricks.
- viii) The number of bricks required per cubic metre of brick masonry is
- a) 400
  - b) 450
  - c) 500
  - d) 550.
- ix) The maximum bulking of sand is likely to occur at a moisture content of
- a) 5%
  - b) 8%
  - c) 11%
  - d) 14%.
- x) Distemper is a type of
- a) oil paint
  - b) enamel paint
  - c) water paint
  - d) varnish.

- GROUP – B**

Answer any *three* of the following.  $3 \times 5 = 15$

2. Discuss briefly the various tests performed on bricks as per BIS.
3. Write a short note on well foundation.
4. Write a short note on terrazo flooring.
5. Discuss seasoning of timber.
6. What is bulking of sand ? How does it affect concrete mix ?
7. Draw plans of alternate course of  $1\frac{1}{2}$  brick thick wall in English bond.



**GROUP – C**

**( Long Answer Type Questions )**

Answer any *three* of the following.  $3 \times 15 = 45$

8. a) State the characteristics and uses of a 1st class brick.  
b) Classify different types of mortars used in engineering works.  
c) State the characteristics of a good mortar,  $5 + 6 + 4$
9. a) Classify building lime as per BIS : 712-1984.  
b) Compare fat lime with hydraulic lime.  
c) What is bulking of sand ? How does it affect concrete mix ?  
d) What are the requirements of a good timber ?  $3 + 4 + 5 + 3$
10. a) Write down the typical chemical composition of Ordinary Portland Cement and discuss the function of each constituent.  
b) What is curing of concrete and why is it required ?  
c) What are the characteristics of good oil paints ?  
d) Write short note on any one of the following :  
(i) Plywood  
(ii) Preservation of timber.
11. a) Draw a figure showing details of steel roof truss.  
b) Write short notes on the following :  
(i) A.C. Sheets  
(ii) G.I. Sheets.  $7 + 8$
12. a) State the requirement of good plaster  
b) What are the defects in plastering ?  
c) Write the characteristics of an ideal paint.  $5 + 5 + 5$

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