



Name :

Roll No. :

Invigilator's Signature :

**CS/B.TECH(CE)NEW/SEM-3/CE-303/2011-12
2011**

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) The weight of a standard brick should be
 - a) 1000 gm
 - b) 2500 gm
 - c) 1500 gm
 - d) 3000 gm.
- ii) The most important purpose of frog in a brick is to
 - a) emboss manufacturer's name
 - b) reduce the weight of brick
 - c) form keyed joint between brick and mortar
 - d) none of these.

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vii) Pile foundation is an example of

- a) shallow foundation b) deep foundation
- c) raft foundation d) none of these.

viii) For complete hydration of cement, the w/c ratio needed is

- a) less than 0.25
- b) more than 0.25 but less than 0.35
- c) more than 0.35 but less than 0.45
- d) more than 0.45 but less than 0.60.

ix) The compacting factor test of cement concrete determines its

- a) strength
- b) porosity
- c) degree of compaction under loads
- d) workability.



- x) Knots reduce the tensile strength of wood
- a) along the grain b) across the grain
- c) tangential to the grain d) none of these.
- xi) In fire proof paints, the main constituent is
- a) Aluminium powder b) Red lead
- c) Copper powder d) Asbestos fibres.
- xii) The bond in which all the bricks are laid with their length in the longitudinal direction of the wall is known as
- a) Header bond b) English bond
- c) Stretcher bond d) Flemish bond.
- xiii) Width of door for public building is generally 1.2 m the height is in the range of
- a) 1.5 m to 1.75 m b) 2 m to 2.25 m
- c) 2.5 m to 2.75 m d) 3 m to 3.25 m.

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GROUP – B

(Short Answer Type Questions)

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

2. What is efflorescence ?
3. What is the good quality of soil for preparation of good bricks.
4. What are the ingredients of Port Land Cement ? State the function ?
5. State the effects of impurities present in lime. What is lime putty ?
6. State the principal causes of decay of timber. What are dry & wet rots ?
7. Compare English Bond with Flemish Bond.

GROUP – C

(Long Answer Type Questions)

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

8. a) State the characteristics of good brick.
- b) Explain the bond strength and stiffness property of aggregates.
- c) On what factors bulk density of aggregates depends ?



9. a) Give sketches of King Post truss and Queen Post truss.
Compare the two.

b) State briefly the essential requirements of a good roof.

c) Compare merits & demerits of flat and pitched roofs.

5 + 5 + 5

10. a) Write a note on location of doors and windows.

b) How the sizes of doors & windows are fixed ?

c) Compare wooden door with steel door. 5 + 5 + 5

11. a) Design a dog legged stair for a building in which the vertical distance between the floor is 3.6 m. The stair hall measures 2.5 m × 5.25 m.

b) Write a brief note on requirements of a good stair.

10 + 5

12. Write short notes on the following : 3 × 5

a) Paints

b) Distempers

c) Varnishes.

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13. State the advantage of seasoning. State the difference between natural seasoning & Kiln seasoning. State the advantage of Plywood.

5 + 5 + 5

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