(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 100404   Roll No. ⎢1⎢3⎢0⎢7⎢2⎢0⎢0⎢9⎢1⎢5⎢

B.Tech.

(SEM. IV) THEORY EXAMINATION 2013-14

BUILDING MATERIAL CONSTRUCTION

Time : 3 Hours   *Total Marks : 100*

Note : Attempt **all** Sections.

SECTION–A

1. Attempt **all** parts, Write in brief :   (2×10=20)

    (a) Scope of study of building material.

    (b) Define Hydraulic Lime.

    (c) What do you mean by Lime bursting ?

    (d) What do you mean by hollow block construction ?

    (e) Floor to floor height is 3.5 m and the rise is 14 cm. Find the total number of treads if the staircase has 3 flights.

    (f) What do you mean by Grid Slab ?

    (g) Draw a neat sketch of RCC lintel with chajja projection.

    (h) What do you mean by elastomers ?

    (i) Explain the term 10 DS 20.

    (j) Explain the term Dry Rot.

SECTION–B

2. Attempt any **six** parts of the following :   (5×6=30)

    (a) Explain with neat sketch various defects of timber.

    (b) What is Pozzolana ? Explain the various pozzolonic materials

(c) Describe the different types of ferrous metals.

(d) Explain the construction procedure of Marble flooring.

(e) Briefly describe the properties and uses of thermal insulating materials.

(f) Explain the term Natural Ventilation.

(g) Discuss, being a civil engineer how would you select the site for building construction.

(h) Compare English and Flemish bond used in brick masonry Also draw 1½ brick thick English and Flemish bond.

SECTION–C

3. Attempt any **two** parts of the following :   (5×2=10)

   (a) Explain with neat sketch the working of a Bull's Trench kiln.

   (b) Explain how you will test the durability of natural building stone.

   (c) Explain the properties and various uses of Gypsum.

4. Attempt any **two** parts of the following :   (5×2=10)

   (a) What are Varnishes ? Discuss its common constituents.

   (b) What are sound insulating materials ? Discuss its desirable properties.

   (c) Describe the mechanical property of plastics ? Discuss its uses in construction.

5. Attempt any **two** parts of the following :   (5×2=10)

   (a) Explain the term damp proofing and describe the various methods of damp proofing.

   (b) Plan a dog legged staircase in the space 6 m ×3 m. Floor to floor height is 4.0 m. Also draw a suitable sketch of your proposed plan.

   (c) Enlist the general principles to be observed in Brick masonry construction.

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6. Attempt any **two** parts of the following : (5×2=10)

   (a) Enlist the various types of windows and explain any four of them in detail giving their sketches.

   (b) Explain the various types of Flat roofs.

   (c) Discuss the principles of planning the building.

7. Attempt any **two** parts of the following : (5×2=10)

   (a) What do you mean by HVAC and also explain its function.

   (b) What do you mean by Acoustics ? As an engineer what are the probable solutions for treating the acoustical defects of a building.

   (c) Explain the different types of maintenance that need to be done in a building.