B.Tech/CE/3rd Sem/CIVL-2103/2015

2015

BUILDING MATERIALS AND CONSTRUCTION

(CIVL 2103)

Time Alloted : 3 Hours   *Full Marks : 70*

Figures out of the right margin indicate full marks.

Candidates are required to answer Group A and any 5 (five)
from Group B to E, taking at least one from each group.

Candidates are required to give answer in their own words
as far as practicable

GROUP - A
(Multiple Choice Type Questions)

1. Choose the correct alternatives for the following :   **[10×1=10]**

   i)   The term frog means
       (a) soaking brick in water
       (b) an apparatus to lift the stone
       (c) vertical joint in a brick work
       (d) a depression on a face of brick

   ii) Ultimate strength to cement is provided by
       (a) Tri-calcium Silicate
       (b) Di-calcium Silicate
       (c) Tri-calcium Aluminate
       (d) Tetra calcium alumina ferrite

   iii) Seasoning of timber is done
       (a) to make it water proof
       (b) to paint its surface
       (c) to increase its temperature
       (d) to remove water

   iv) Most commonly used solvent in oil paint is
       (a) petroleum   (b) spirit
       (c) coaltar   (d) turpentine

   v)   The pile which supports the load partly by friction and partly by resting on hard stratum is called
       (a) Friction pile   (b) Bearing pile
       (c) Friction bearing pile   (d) Rough pile

   vi) The type of bond in which every course contains both headers and stretchers is called
       (a) English bond   (b) Flemish Bond
       (c) Russian bond   (d) Mixed bond

   vii) Mat foundation is an example of
       (a) Deep foundation
       (b) Machine foundation
       (c) Shallow foundation
       (d) None of these

   viii) The members which support covering materials of a sloping roof is called
       (a) Battens   (b) Purlins
       (c) Rafters   (d) Struts

ix) If P is the percentage of water required for normal consistency, water to be added for determination of initial setting time is

(a) 0.70P   (b) 0.75P

(c) 0.80P   (d) 0.85P

x) The vertical members fixed between steps and hand rail is called

(a) Balusters   (b) Strings

(c) Newel posts   (d) Soffits

GROUP - B

2. (a) Mention the characteristics of good brick. What are the characteristics of first class brick?

   (b) Name and mention the functions of Bogue's compounds.

   (4+2)+6 = 12

3. (a) Describe the process of slaking of lime. Compare between lime and cement.

   (b) Write short note on Ordinary Portland cement and Portland Slag cement.

   (4+2)+6 = 12

GROUP - C

4. (a) What are the characteristics of an ideal paint?

   (b) Describe the different defects in timber.

   4+8 = 12

5. (a) What are the characteristics of good mortar?

   (b) Write short note on Plaster of Paris and Alloy steel.

   6+6 = 12

Group - D

6. (a) Differentiate between shallow foundation and deep foundation.

   (b) Write short note on English bond and Flemish bond.

   6+6 = 12

7. (a) Draw a neat sketch of wooden panel door indicating all its necessary parts.

   (b) What is slenderness ratio?

   8+4 = 12

GROUP - E

8. (a) Define the terms trend, riser and flight with reat sketch.

   (b) Plan a dog-legged stair for a building where the vertical distance between the floors is 3.6m. The stair hall measures 2.5m x 5m.

   (2×3)+6 = 12

9. (a) Write short note on Terrazzo flooring and Mosaic flooring.

   (b) Draw a neat sketch of King-Post truss.

   6+6 = 12

————————