USN | | | | | | | | | | **15ARC1.2**

First Semester B.Arch. Degree Examination, Dec.2015/Jan.2016
Materials and Methods in Building Construction - I

Time: 4 hrs.   Max. Marks: 100

Note: Answer any FIVE full questions, choosing one full question from each module.

Module-1

1 a. Explain the building components with the help of sketches.   **(10 Marks)**
   b. Explain the following with sketches :
       i) English Bond   ii) Rat Trap Bond   iii) Half Brick Bat   iv) Queen Closer
       v) Frog.   **(10 Marks)**

OR

2 a. Explain following building material used in building construction :
       i) Cement ii) Brick   iii) Glass   iv) Stone   v) Sand.   **(10 Marks)**
   b. Show the conventions of the following material used in building construction :
       i) Cement concrete in section   ii) Wood in section   iii) Stone wall in section
       iv) Brick wall in section   v) Steel in section.   **(10 Marks)**

Module-2

3 Draw Plan , Elevation and Isomeric view of 1½ brick thick Masonary wall (L – junction) with
   Flemish bond. Consider 2M length on each side, 10 course high, Scale = 1:10.   **(20 Marks)**

OR

4 Explain the following with suitable scale drawing :
   a. Segmental Arch.
   b. Wooden Stair.
   c. Wall Footing.
   d. Brick Lintels.   **(20 Marks)**

Module-3

5 Explain the manufacturing process of the following :
   a. Solid concrete blocks.
   b. Hollow clay blocks.
   c. Glass blocks.
   d. Fly ash blocks.
   e. Stabilized mud blocks.   **(20 Marks)**

OR

6 Explain the manufacturing process, properties and uses of the following :
   a. Hollow concrete blocks.
   b. Solid concrete blocks.   **(20 Marks)**

Module-4

7   Explain the following with 1:10 scale drawing. Assume suitable data :
    a.   Load bearing wall / structure – brick.
    b.   Step foundation.   (20 Marks)

OR

8   a.   Explain the types of wood and its usage in building construction.   (10 Marks)
    b.   Explain the following :
        i)   Seasoning of cut timber   ii)   Defects in timber   iii)   Sawing process
        iv) Brick masonary foundation   v)   Stone foundation.   (10 Marks)

Module-5

9   Draw to 1:10 scale. A wooden door of 1200mm wide and 2100mm height : Plan , Elevation, Section.
    Consider the door is ⅓rd glazed and ⅔rd is paneled. Wall thickness = 300mm.
    Details : Door Jamb – 1:5 scale.
             Any 1 Joinery details – 1:5 scale.   (20 Marks)

OR

10 Draw to 1:10 scale, A wooden casement window of 1200mm wide and 1800mm height.
    Sill = 750mm. Consider the wall thickness = 300mm
    - Plan.
    - Section.
    - Elevation.
    Details : Window's Jamb = 1:5 scale.
             Any ONE joinery details = 1:5 scale.   (20 Marks)

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