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15ARC1.2

First Semester B.Arch. Degree Examination, June/July 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 neat sketches. (10 Marks)
 b. Explain the following with neat sketches : (10 Marks)
 i) Frog ii) bevelled closer iii) three quarter bat iv) king closer.

OR

- 2 a. Explain following building materials used in building construction : (10 Marks)
 i) stone ii) brick iii) aggregates iv) cement v) sand.
 b. Show the conventions of the following building material used in building construction : (10 Marks)
 i) brick wall in section ii) stone wall in section iii) wood in section
 iv) cement concrete in section v) metal in section.

Module-2

- 3 Draw to suitable scale the following of a $1\frac{1}{2}$ thick brick wall in English bond. (L Junction) assume the length of wall 1.5 mts a six courses high. (20 Marks)
 i) Odd course plan ii) Even course plan iii) Front elevation iv) Isometric view.

OR

- 4 Draw to suitable scale and explain : (20 Marks)
 a. Lintel and chajjah
 b. Stone wall footing
 c. Brick wall footing
 d. Arches.

Module-3

- 5 Explain the following : (20 Marks)
 a. Advantages of fly ash bricks
 b. Uses of glass block
 c. Properties and uses of glass blocks
 d. Defects in stone.

OR

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

Module-4

- 7 a. Draw to scale 1 : 10 a typical cross section of an external wall (230 mm thick) brick wall in foundation in uncoursed rubble masonry considering asymmetrical off set above G. L. (10 Marks)
- b. Draw to scale 1 : 10 a typical section of internal (230 mm thick) brick wall foundation in uncoursed rubble masonry considering symmetrical offset. (10 Marks)

OR

- 8 a. Explain the type of wood and its usage in building construction. (10 Marks)
- b. Explain the following :
- i) Seasoning and preservation of timber
 - ii) Defects in timber
 - iii) Sawing process
 - iv) Types of joints in timber. (10 Marks)

Module-5

- 9 Draw to suitable scale a jungle wood single leaf panelled door of 1.0 m wide and 2.1 m high
i) plan ii) elevation iii) section iv) enlarged detail – 2 numbers. (20 Marks)

OR

- 10 Draw to a scale 1 : 10. A wooden casement window 1800 mm wide and 1200 mm height
sill = 900 mm consider the wall thickness = 300 mm.
i) plan
ii) section
iii) elevation.
Details : window jamb = 1 : 5 scale.
One joinery details = 1 : 5 scale. (20 Marks)

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