14ARC1.2

First Semester B.Arch. Degree Examination, Dec.2014/Jan.2015 Materials and Methods in Building Construction – I

Time: 4 hrs.

Max. Marks:100

Note: 1. Answer any FIVE full questions, choosing ONE from each of the modules. 2. All questions must be written on the drawing sheets only.

MODULE - 1

- 1 a. Show the conventions used in the drawings to indicate:
 - i) Brick wall
 - ii) Stone wall
 - iii) Wood in elevation
 - iv) Wood cut in section
 - v) Plain cement concrete

(10 Marks)

- b. Explain with sketches:
 - i) Retaining wall
 - ii) Lintel and chajja
 - iii) Coping
 - iv) Corbelling
 - v) Pilaster.

(10 Marks)

- Describe unburnt, burnt, table moulded and wire cut bricks, along with their advantages and disadvantages.
 (12 Marks)
 - b. Explain with sketches;
 - i) Header
 - ii) Stretcher
 - iii) Frog
 - iv) King closer.

(08 Marks)

MODULE - 2

- Draw to suitable scale, the following of a brick wall corner ('L' junction) assuming about 1.5m on either side and six courses high:
 - i) Odd course plan
 - ii) Even course plan
 - iii) Front elevation
 - iv) Side elevation.

(20 Marks)

- 4 Draw to suitable scales and explain:
 - i) Semi circular arch
 - ii) Size stone masonry wall
 - iii) Rubble masonry and polygonal masonry walls
 - iv) Buttresses
 - v) Flemish bond.

(20 Marks)

Important Note: 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.

2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.

MODULE - 3

- 5 a. Explain with sketches different possibilities of Hollow concrete blocks, along with their advantages and disadvantages. (10 Marks)
 - b. Explain with sketches different variations of Hollow clay blocks, along with their advantages and disadvantages. (10 Marks)
- **6** Explain with sketches for walls:
 - i) Stabilized mud blocks
 - ii) Solid concrete blocks
 - iii) Aerated concrete blocks
 - iv) Glass blocks.

(20 Marks)

MODULE - 4

- 7 a. Draw to a scale of 1:10, a typical section of an internal (230 th brick) wall foundation in size stone masonry, considering symmetrical off sets of the courses. (10 Marks)
 - b. Draw to a scale of 1:10 a typical section of an external (230 th brick) wall foundation in size stone masonry, considering asymmetrical off sets above G.L till plinth. (10 Marks)
- 8 Explain with sketches:
 - i) Brick masonry foundations
 - ii) Types of timber used in buildings
 - iii) Filling and sawing process
 - iv) Defects in timber
 - v) Preservation and seasoning of raw and cut timber.

(20 Marks)

MODULE - 5

- 9 Draw to suitable scales, for a suitable door of 1.0m wide and 2.2m high, the following:
 - i) Elevation
 - ii) Enlarged detail at jamb
 - iii) Enlarged detail of joinery
 - iv) Section.

(20 Marks)

- Draw to suitable scales, for a suitable glazed window of 2.0m wide and 1.5m high, the following:
 - i) Plan
 - ii) Elevation
 - iii) Two enlarged joinery details.

20 Marks)