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14ARC2.2

Second Semester B.Arch. Degree Examination, Dec.2017/Jan.2018
Materials and Methods in Building Construction – II

Time: 4 hrs.

Max. Marks: 100

**Note: Answer FIVE full questions, selecting
ONE full question from each module.**

Module-1

- 1 Explain with neat sketches:
- Coupled roof (05 Marks)
 - Scissor roof (05 Marks)
 - King-post roof (05 Marks)
 - Queen-post roof (05 Marks)
- 2 Draw with suitable sketches a lean to timber roof, finished with terracotta tiles for a entrance porch of size 5m × 2.5m (length × breadth). Draw:
- Key plan (03 Marks)
 - Enlarged plan (04 Marks)
 - Section along slope (05 Marks)
 - Detail at eave and ridge (08 Marks)

Module-2

- 3 Name any five types of cement available worldwide with their application. (20 Marks)
- 4 What is concrete mix design? Explain briefly any four of the factor affecting choice of mix proportions. (20 Marks)

Module-3

- 5 a. List the divisions and sub-divisions of various types of foundation/footing based on depth and profile. (11 Marks)
- b. Sketch the different types of settlements of structure based in which foundation choice is made. (09 Marks)
- 6 A square column of size 200 mm has to be provided with RCC footing of size 1500 × 1500 mm and 1350 mm depth. Draw in suitable scale-plan and section. Assuming necessary diameter and spacing. (20 Marks)

Module-4

- 7 Explain with neat sketches:
- Components and terminology of stairs (min 5) (10 Marks)
 - Types of stairs in plan (min 5) (10 Marks)
- 8 Explain with sketches:
- RCC waist slab stairs (10 Marks)
 - Double stringer timber staircase (10 Marks)

Module-5

- 9 Design a steel staircase for an apartment in a space of 3.5m wide and 7.0m long. Assume floor to floor height to be 3.15m and draw following details in suitable scale:
- Plan (05 Marks)
 - Longitudinal section (07 Marks)
 - Z-enlarged details (08 Marks)
- 10 a. Explain five escape stairs. (08 Marks)
- b. Explain with sketches any three composite stairs. (12 Marks)

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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.