

CBCS SCHEME

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15ARC22

Second Semester B.Arch. Degree Examination, Dec.2019/Jan.2020 Material and Methods in Building Construction - II

Time: 4 hrs.

Max. Marks: 100

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

Module-1

- 1 An industrial Building measuring 9.00 mtr × 15mtrs in an industrial area required to be roofed with Mangalore tiles on king post roof truss, is supported on RCC columns of size 230mm×450mm on either side of truss. Draw the following :
- Plan Scale – 1 : 100 (05 Marks)
 - Sectional elevation scale – 1:20 (05 Marks)
 - Any two joinery detail (10 Marks)

OR

- 2 a. Write a detailed note on G – I sheet roof covering. Describe the method of laying and fixing them with necessary detailed sketches. (10 Marks)
- b. Define the following terms used in pitched roof construction with relevant sketches. (any three) (10 Marks)
- i) Ridge ii) Valley iii) Eaves iv) Gable.

Module-2

- 3 a. Describe in detail the ingredients and composition of RCC. (07 Marks)
- b. Explain in detail the manufacturing process for cement. (07 Marks)
- c. Explain the role of water in cement construction and cement mix. (06 Marks)

OR

- 4 Write short notes on :
- Cover for reinforcement (07 Marks)
 - Types of cement and their uses (07 Marks)
 - Ready Mix Concrete- RMC. (06 Marks)

Module-3

- 5 A square column of size 230mm × 230mm has to be provided with RCC isolated footing of size 1200mm × 1200mm. Draw detailed drawing to 1:10 scale. Show the reinforcement detail in plan and section.
- Plan showing reinforcement detail (06 Marks)
 - Done section (06 Marks)
 - Isometric view. (08 Marks)

OR

- 6 Write short notes with relevant sketches (any three)
- Grillage foundation
 - Combined footing
 - Construction and expansion joint
 - Raft foundation. (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-4

- 7 A Residence required a RCC waist slab staircase of width 1000mm, and finish floor level to finish floor height is 3000mm. Draw the following detail to suitable scale.
- a. Plan and sectional elevation (10 Marks)
 - b. Isometric view (04 Marks)
 - c. Tread and Riser details hand rail and baluster fixing detail. (06 Marks)

OR

- 8 Explain with neat sketches. (any three)
- a. Folded plate staircase in RCC
 - b. Pre cast RCC staircase
 - c. Stone staircase
 - d. Spiral staircase in metal. (20 Marks)

Module-5

- 9 Draw the following of composite staircase of width 1200mm and floor to floor height is 3000mm (composite material – can be of metal, timber, Glass, RCC.)
- a. Plan Scale – 1 : 20 (06 Marks)
 - b. Sectional elevation Scale – 1 : 20 (06 Marks)
 - c. Enlarged detail – Floor to stringer detail tread to stringer detail scale – 1 : 5. (08 Marks)

OR

- 10 Explain with neat joinery detail sketches for the following – (any three)
- a. Timber staircase
 - b. Fire escape staircase
 - c. Composite staircase
 - d. Spiral staircase. (20 Marks)
