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Fourth Semester B.Arch. Degree Examination, Jan./Feb.2021 Materials and Methods in Building Construction – IV

Time: 4 hrs.

Max. Marks: 80

**Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. Draw sketches wherever necessary.**

Module-1

1. A space 8m × 8m has to be covered with a flat plate. Show the following:
- a. Key plan. (05 Marks)
 - b. Plan showing part reinforcement. (05 Marks)
 - c. Two sections showing reinforcement. (10 Marks)

OR

2. a. What are the differences between a flat plate and a flat slab? (05 Marks)
 b. Sketch out the detailing of reinforcement in a drop panel in a flat slab. (07 Marks)
 c. Sketch out the detailing of reinforcement in a column capital with drop panel in a flat slab. (08 Marks)

Module-2

3. a. What are the characteristic properties of a good filler material used in slabs? (05 Marks)
 b. Draw a plan of a filler slab over an area 3.5m × 6.0m, using mangalore tile as filler. (05 Marks)
 c. Draw a section of the above showing the reinforcement. (10 Marks)

OR

4. A space 8.0 M × 8.0 M has to be covered with a Waffle slab. Show the following:
- a. Plan showing reinforcement. (07 Marks)
 - b. Section showing reinforcement. (08 Marks)
 - c. Detail of formwork. (05 Marks)

Module-3

5. a. Write short notes on various types of steel used in the construction industry. (05 Marks)
 b. Sketch out the various profiles of steel used in the construction industry. (05 Marks)
 c. Explain at least 5 advantages and disadvantages of using steel instead of wood in construction. (10 Marks)

OR

6. A room 6m × 5.5m; 3.5m high has to be built using structural steel framing and sheet decking with R.C.C. roof slab. Assume appropriate sizes and draw the following:
- a. Framing plan showing the columns, main and secondary beams. (05 Marks)
 - b. Section showing decking slab and slab reinforcement details. (05 Marks)
 - c. Details of column to beam; and beam to beam connections (welded or bolted). (10 Marks)



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