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## Eighth Semester B.Arch. Degree Examination, Jan./Feb. 2023 Materials and Methods in Building Construction – VIII

Time: 4 hrs.

Max. Marks: 100

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

### Module-1

- 1 a. Explain any five types of innovative concretes used in the construction industry. (10 Marks)
- b. Explain the construction methods of underground buildings. (10 Marks)

OR

- 2 a. Enumerate four types of enclosure systems that are also used as structural support for multi-storeyed buildings. (10 Marks)
- b. Describe any five types of formworks used for construction of high-rise buildings. (10 Marks)

### Module-2

- 3 a. How is big data used in construction? (10 Marks)
- b. Describe three instances where robotics are used in the construction industry. (10 Marks)

OR

- 4 a. Describe any four construction equipment used in heavy construction works. (10 Marks)
- b. How is 3D printing of buildings done? (10 Marks)

### Module-3

- 5 a. What are common repairs done for cracks in buildings? Enumerate any four. (10 Marks)
- b. Explain structural retrofitting of RCC framed buildings. (10 Marks)

OR

- 6 a. Explain LCA and LCCA. (10 Marks)
- b. Explain any five causes of damages to buildings. (10 Marks)

### Module-4

- 7 a. Explain important criteria behind Green Building Rating System for new buildings in Indian building context using either GRIHA or IGBC. (10 Marks)
- b. Explain any four passive design strategies for Green Building Design. (10 Marks)

OR

- 8 a. What are the benefits of Green Buildings in today's context? (10 Marks)
- b. What is Net Zero Energy Building? Explain how this can be achieved in buildings using active strategies? (10 Marks)

### Module-5

- 9 What is nano technology? What are some nano materials used in construction? (20 Marks)

OR

- 10 What are smart materials? Explain their use in construction with five examples. (20 Marks)