

# CBCS SCHEME

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15ARC82

## Eighth Semester B.Arch. Degree Examination, Aug./Sept.2020 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 Write short notes on the following :
- Impact of automation in construction industry.
  - Environmental concerns on building construction
  - Underwater construction
  - Kinetic construction
- (20 Marks)

OR

- 2 Compare different types of materials used in formwork. Explain which type of formwork would be suitable for high rise buildings. Explain with neat sketches.
- (20 Marks)

### Module-2

- 3 Explain the influence of the following in construction industry:
- Big data
  - Cloud Collaboration
  - Simulation
  - 3D Printing
- (20 Marks)

OR

- 4 Give a brief description of any 4 new advances in construction equipments.
- (20 Marks)

### Module-3

- 5 a. What is payback period? Explain in terms of life cycle analysis. (08 Marks)  
b. Describe the four stages that are assessed in a life cycle assessment. (12 Marks)

OR

- 6 a. Differentiate between repairs, renovations and retrofits. (05 Marks)  
b. Briefly describe 5 crack repairing techniques. (15 Marks)

### Module-4

- 7 a. Differentiate between green building and net zero energy building. (04 Marks)  
b. Explain in detail the consideration for materials in pre-construction, construction and post construction stages of green buildings. (16 Marks)

OR

- 8 a. Define embodied energy. Differentiate between active and passive strategies used in design of buildings. (08 Marks)  
b. Explain methods of harvesting and conserving energy to achieve a net zero energy building. (12 Marks)

**Module-5**

- 9 a. What are Smart Materials? List out any 4 smart materials. (06 Marks)  
b. Explain in detail with relevant sketches the working of any two smart materials as building components. (14 Marks)

OR

- 10 a. What are Nano Materials? List out 4 nano materials with applications in the construction industry. (06 Marks)  
b. Explain the usage/application along with the working principle of any 2 of the above in about 200 words. (14 Marks)

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