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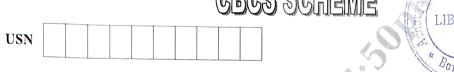
## Eighth Semester B.Arch. Degree Examination, Aug./Sept.2020
# Materials and Methods in Building Construction – VIII

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 :
   a.  Impact of automation in construction industry.
   b.  Environmental concerns on building construction
   c.  Underwater construction
   d.  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:
   a.  Big data
   b.  Cloud Collaboration
   c.  Simulation
   d.  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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