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## Eighth Semester B.Arch. Degree Examination, Dec.2019/Jan.2020 Materials and Methods in Building Construction VIII

Time: 4 hrs.

Max. Marks: 100

- Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.  
2. Assume suitable data wherever necessary, clearly mentioning it in the answer script.*

### Module-1

- 1 a. Enumerate in detail any four innovative ideas/concepts in the construction industry. (10 Marks)  
b. What are the important concerns for selection of form work in high rise buildings? Explain any two methods. (10 Marks)

OR

- 2 a. Explain in detail and with neat sketches any two types of underground construction methods. (10 Marks)  
b. Enumerate any four types of innovative concretes. (10 Marks)

### Module-2

- 3 a. What are various types of equipment used in construction industry? Provide one example for each. (10 Marks)  
b. "Internet of Things is bringing about transformational changes in construction Industry" – Verify this statement with suitable examples. (10 Marks)

OR

- 4 a. What is the influence of BIG DATA in the construction industry? (10 Marks)  
b. Explain 3-D printing of Buildings. (10 Marks)

### Module-3

- 5 a. What is the purpose of life cycle assessment of buildings? What are the aspects included in life cycle assessment? (10 Marks)  
b. What are some common repairs to Buildings? (10 Marks)

OR

- 6 a. What do you mean by Retrofit? Explain various methods of Retrofitting Buildings. (10 Marks)  
b. Enumerate five causes of damage to Buildings. (10 Marks)

### Module-4

- 7 a. Enumerate rating system as given by any standard agency like GRIHA or IGBC. (05 Marks)  
b. In a plot of size 12m × 18m facing north on the shorter side, (shown over leaf) located in Bangalore, provide a three Bed Rom Residential Building (G + 1) using passive design strategies to satisfy green building concepts? Draw plan, section, elevation to suitable scale. Draw relevant schematics. (Refer Fig.Q.7(b)) (15 Marks)

OR

- 8 a. What is Net Zero Energy Building? (NZEB) what strategies do you suggest for design of NZRB. (05 Marks)
- b. In a plot of size 12m × 18m facing north on the shorter side, (shown overleaf) located in Bangalore, provide a Commercial Office Building (G + 1) using passive design strategies to satisfy Green Building Concepts. Draw plan, section, Elevation to suitable scale. Draw relevant schematics. (Refer Fig.Q.8(b)) (15 Marks)

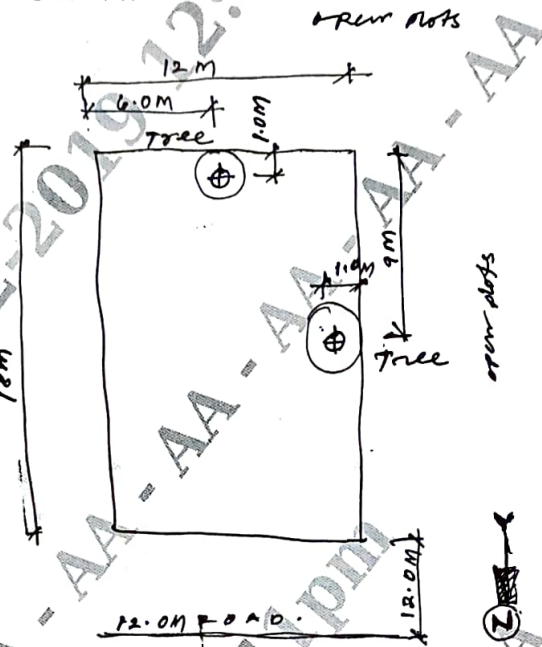


Fig.Q.7(b) and Fig.Q.8(b)

**Module-5**

- 9 a. What are Smart Materials? Enumerate any FOUR. (10 Marks)
- b. What is Nano Technology? Explain with examples any four materials in the Building Industry that are impacted by Nano Technology. (10 Marks)

OR

- 10 a. Where do smart materials find application in the building industry? Name atleast 2 Smart Materials. (10 Marks)
- b. What is Nano technology with respect to building Industry? Explain where Nano-Technology finds application in the building industry. (10 Marks)

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