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B.TECH.
(SEM VII) THEORY EXAMINATION 2022-23
SUSTAINABLE CONSTRUCTION METHODS

Time: 3 Hours**Total Marks: 100****Note:** Attempt all Sections. If you require any missing data, then choose suitably.

SECTION A

1. Attempt all questions in brief. 2x10 = 20

- (a) What are the techniques of sustainable construction?
- (b) What are the different types of modular construction?
- (c) What is the first stage of precast structure construction?
- (d) List different methods for constructing bridges?
- (e) What are cutting edge sustainable energy efficient building materials?
- (f) How is project management utilized in the construction industry?
- (g) What is GRIHA?
- (h) List the 5 categories of LEED?
- (i) What is the environmental impact of raw materials?
- (j) What are the 4 categories of building green?

SECTION B

2. Attempt any three of the following: 10x3 = 30

- (a) Explain the factors to be considered in selecting a type of foundation?
- (b) How the slip form technique improves the construction industry?
- (c) What are some ways the construction industry is working to reduce their environmental impact?
- (d) Explain the concept of LEED with the help of examples?
- (e) Discuss in detail the four basic steps in material selection process?

SECTION C

3. Attempt any one part of the following: 10x1 = 10

- (a) Differentiate between Formwork, Shuttering, Centering, Staging & Scaffolding?
- (b) Explain the advantages and challenges faced during modular construction?

4. Attempt any one part of the following: 10 x1 = 10

- (a) Explain the advantages and disadvantages for pre-cast concrete and cast in-situ concrete?
- (b) Explain in detail the methodology adopted for the construction of bridge structures?

5. Attempt any *one* part of the following: 10x1 = 10
- (a) Explain the strategies to reduce waste during construction of the project?
 - (b) Discuss how the sustainability of the building and construction industry can be improved?
6. Attempt any *one* part of the following: 10x1 = 10
- (a) Explain in detail the six key areas for rating of green buildings?
 - (b) Discuss the process which LEED and GRIHA rating used to rate any structure?
7. Attempt any *one* part of the following: 10x1 = 10
- (a) Discuss in detail about green construction materials?
 - (b) Explain the need for a life cycle approach on the material selection?

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