

Roll No. ....

Total Pages : 3

**002307**

**January 2023**

**B.Tech. (Civil) - III SEMESTER**

**Building Materials and Testing (PCC-CED-203)**

Time : 3 Hours]

[Max. Marks : 75

*Instructions :*

1. *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*
2. *Answer any four questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

**PART-A**

1. (a) Discuss different types of cement used in construction. (1.5)
- (b) Elaborate on different grades of steel used in construction. (1.5)
- (c) Discuss any two applications of timber in building construction. (1.5)
- (d) What is footing? Elaborate. (1.5)
- (e) Differentiate between fine and coarse aggregates. (1.5)

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- (f) Differentiate between concrete and mortar. (1.5)
- (g) Discuss any two defects in timber. (1.5)
- (h) What is fly ash? Discuss its applications. (1.5)
- (i) What is ready mix concrete? Elaborate. (1.5)
- (j) Discuss the applications of glass in building construction. (1.5)

**PART-B**

- 2. (a) Elaborate on strap, combined and mat footings along with suitable diagrams. (10)
- (b) What is bulking of sand? Explain briefly. (5)
  
- 3. (a) Discuss the requirement of good paint. (5)
- (b) Define cavity wall. What is the purpose of a cavity wall? Explain with suitable diagrams. (10)
  
- 4. Discuss various laboratory tests to be conducted on concrete. (15)
  
- 5. (a) What are the required qualities of good brick earth? (5)
- (b) Define following properties of materials :
  - (i) creep, (ii) elasticity, (iii) ductility, (iv) density, (v) hardness. (10)

- 6. (a) Distinguish English bond and Flemish bond. (10)
- (b) Briefly describe the methods of nondestructive tests for concrete. (5)
  
- 7. Elaborately discuss the engineering properties of civil engineering materials of concrete, steel, stone and timber that are considered for selecting these materials. (15)