

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- 2025

M. Tech- First Semester

COURSE CODE (CREDITS): 3

MAX. MARKS: 25

COURSE NAME: Construction Techniques (10M11CE111)

COURSE INSTRUCTORS:

MAX. TIME: 1 Hour 30 Min

Note: (a) All questions are compulsory.

(b) The candidate is allowed to make suitable numeric assumptions wherever required for solving problems. Answer to the point only.

Q1. Answer the following objective questions with proper justification. (5 Marks)

1. **What is the primary function of a substructure in building construction?**
 - A) To support the foundation and prevent water
 - B) To support the building's superstructure and provide stability
 - C) To provide aesthetic value to the building
 - D) To allow for the installation of utilities
2. **Which of the following is NOT a common type of foundation used in substructures?**
 - A) Strip foundations
 - B) Pad foundations
 - C) Slab foundations
 - D) Floating foundations
3. **What is the main advantage of using solid blockwork in substructure construction?**
 - A) It is quicker to lay than bricks.
 - B) It is cheaper than brickwork.
 - C) It requires no cavity fill.
 - D) All of the above.
4. **Which material is commonly used for load-bearing partitions?**
 - A) Gypsum board
 - B) Timber studs
 - C) Brick or blockwork
 - D) Steel framing
5. **What is the role of a DPC (Damp Proof Course) in substructure construction?**
 - A) To provide thermal insulation
 - B) To prevent moisture from entering the building
 - C) To enhance the aesthetic quality of the foundation
 - D) To improve sound insulation
6. **Which foundation type is best suited for areas with a high water table?**
 - A) Pad foundations
 - B) Trench fill foundations

- C) Raft foundations
 - D) Pile foundations
7. **In partition wall construction, what is a key difference between load-bearing and non-load-bearing walls?**
- A) Load-bearing walls support other structural elements, while non-load-bearing walls divide spaces.
 - B) Non-load-bearing walls are thicker than load-bearing walls.
 - C) Load-bearing walls are made only of concrete.
 - D) Non-load-bearing walls provide structural support to the roof.
8. **What type of insulation is commonly used in timber frame partition walls?**
- A) Fiberglass or rockwool
 - B) Polystyrene
 - C) Expanded polystyrene
 - D) Aerated concrete
9. **In masonry partition construction, what is used to tie the two leaves of a cavity wall together?**
- A) Wall ties
 - B) Steel beams
 - C) Reinforced concrete
 - D) Cement mortar
10. **What is the primary function of a partition wall in a building?**
- A) To support the building's roof
 - B) To divide interior spaces and provide privacy
 - C) To distribute the weight of the structure
 - D) To allow for utility installations
11. **What material is commonly used for trench fill foundations?**
- A) Concrete
 - B) Wood
 - C) Brick
 - D) Steel
12. **In foundation construction, which of the following is a critical consideration when setting out the foundation levels?**
- A) Foundation depth
 - B) Load-bearing capacity of the soil
 - C) Soil moisture content
 - D) All of the above
13. **Which of the following is true about a load-bearing partition wall?**
- A) It only separates rooms without supporting any structure
 - B) It does not require foundations
 - C) It carries loads from other parts of the structure
 - D) It is only constructed from brick
14. **Which material is most commonly used for non-load-bearing partition walls?**
- A) Reinforced concrete
 - B) Timber
 - C) Steel
 - D) Plasterboard or stud

15. What is the primary function of partition walls in buildings?

- A) To enhance the aesthetic value of the building
- B) To divide internal spaces into rooms or areas
- C) To support the building's roof structure
- D) To provide thermal insulation

Q2. Explain the importance of substructures in building construction. Discuss the different types of foundations used in substructure work and how soil conditions influence the choice of foundation. (4 Marks)

Q3. Describe the process of setting out a foundation and list the tools required for this task. Explain the factors that must be considered when determining the foundation level and depth. (4 Marks)

Q4. Define trench fill foundations. Explain their construction procedure along with their advantages and limitations. (4 Marks)

Q5. Describe the construction process of a timber stud partition wall. Discuss the advantages and limitations of using timber for partitions. Explain how partition walls contribute to acoustic and fire resistance in buildings, and how material selection affects these properties. (4 Marks)

Q6. Explain the process of designing and constructing a brick partition wall. Discuss the main considerations regarding load-bearing capacity, stability, and material selection. (4 Marks)