1. What is the effective length of a column?
a) The total length of the column
b) The distance between two consecutive supports
c) The length of the column above the footing
d) The length of the column below the footing
Answer: b) The distance between two consecutive supports
Explanation: The effective length of a column is the distance between two consecutive points of inflection. It is essential for analyzing the stability of the column under different loading conditions.

2. Which type of column is prone to buckling under axial loads?
a) Short column
b) Long column
c) Square column
d) Rectangular column
Answer: b) Long column
Explanation: Long columns are more prone to buckling due to their slenderness ratio compared to short columns.

3. What is the shape of a circular column?
a) Square
b) Rectangular
c) Circular
d) Triangular
Answer: c) Circular
Explanation: Circular columns have a cylindrical shape, providing better load-bearing capacity and resistance to buckling.

4. Which type of footing supports a single column?
a) Isolated footing
b) Combined footing
c) Strap footing
d) Raft footing
Answer: a) Isolated footing
Explanation: Isolated footings, also known as pad footings, are used to support single columns or isolated loads.

5. What is the purpose of a strap footing?
a) To increase the column height
b) To reduce settlement of the foundation
c) To connect two isolated footings
d) To support eccentrically loaded columns
Answer: c) To connect two isolated footings
Explanation: Strap footings are used when two isolated footings are placed close to each other and need to be connected to distribute loads effectively.

6. Which type of foundation is suitable for columns subjected to both axial loads and bending moments?
a) Isolated footing
b) Combined footing
c) Strap footing
d) Raft foundation
Answer: b) Combined footing
Explanation: Combined footings are designed to support columns subjected to both axial loads and bending moments by distributing the loads to the soil.

7. In which type of section of a column are there no tensile stresses?
a) Top section
b) Middle section
c) Bottom section
d) Entire section
Answer: c) Bottom section
Explanation: In a column, the bottom section experiences only compressive stresses and no tensile stresses, assuming no eccentric loading.

8. Which type of foundation spreads the load over a large area?
a) Isolated footing
b) Combined footing
c) Strap footing
d) Raft foundation
Answer: d) Raft foundation
Explanation: Raft foundations, also known as mat foundations, spread the load over a large area of soil to minimize settlement and provide stability.

9. Which factor affects the design of a strap footing?
a) Column height
b) Soil type
c) Foundation depth
d) Column width
Answer: b) Soil type
Explanation: The type and characteristics of the soil influence the design of a strap footing, particularly in terms of bearing capacity and settlement.

10. What is the primary function of a column’s footing?

a) To transfer loads from the column to the soil

b) To increase the height of the column

c) To provide lateral stability to the column

d) To resist bending moments in the column

Answer: a) To transfer loads from the column to the soil

Explanation: The main purpose of a column’s footing is to distribute the loads from the column to the underlying soil in a manner that prevents excessive settlement or instability.

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