Assignment 8

The due date for submitting this assignment has passed. As per our usual policy, you have not submitted this assignment.

1. Which of the following are correct statements?
   - [ ] Surface bearing is less prone to settlement than shallow foundations.
   - [ ] A deep foundation is less prone to settlement than shallow foundations.
   - [ ] Surface bearing is less prone to settlement than shallow foundations.
   [ ] None of the above.
   
   **Accepted Answer:**
   [ ] None of the above.

2. The Brunet and Law (1979) theory was developed based on which of the following assumptions?
   - [ ] Resistance of concrete to shear failure is considered.
   - [ ] Uniform bearing capacity across the foundation is assumed.
   - [ ] Non-linear shear stress distribution across the foundation is assumed.
   [ ] None of the above.
   
   **Accepted Answer:**
   [ ] None of the above.

3. What is the thickness of a foundation with an area of 360 m² and a width of 20 m, assuming a bearing capacity of 200 kPa?
   - [ ] 0.5 m
   - [ ] 0.75 m
   - [ ] 1.0 m
   - [ ] 1.25 m
   [ ] None of the above.

   **Accepted Answer:**
   [ ] 0.5 m

4. How do we determine the allowable bearing pressure for a given foundation area?
   - [ ] By calculating the safe load capacity of the soil.
   - [ ] By selecting a design factor based on the soil type.
   - [ ] By applying a factor of safety to the calculated load capacity.
   [ ] None of the above.
   
   **Accepted Answer:**
   [ ] By applying a factor of safety to the calculated load capacity.

5. Which of the following statements about the stability of foundation structures is true?
   - [ ] A foundation is considered stable if the foundation weight is greater than the soil resistance.
   - [ ] A foundation is considered stable if the soil resistance is greater than the foundation weight.
   - [ ] A foundation is considered stable if the foundation weight is equal to the soil resistance.
   [ ] None of the above.
   
   **Accepted Answer:**
   [ ] A foundation is considered stable if the soil resistance is greater than the foundation weight.

6. What are the factors that influence the load capacity of shallow foundations?
   - [ ] Foundation size and shape.
   - [ ] Soil type and properties.
   - [ ] Water table and slope.
   - [ ] All of the above.
   [ ] None of the above.

   **Accepted Answer:**
   [ ] All of the above.

7. What is the deflection criterion for a deep foundation with a length of 20 m and a width of 5 m?
   - [ ] 25 mm
   - [ ] 30 mm
   - [ ] 40 mm
   - [ ] 50 mm
   [ ] None of the above.

   **Accepted Answer:**
   [ ] 25 mm

For questions 6-8, additional data is given. Answer the following based on the data provided.

The reinforcement parameters are: $f_y = 360$ MPa (yield strength of steel) and $f_t = 200$ MPa (tensile strength of steel). The soil properties are: $E = 200,000$ kPa (modulus of elasticity) and $c = 100$ kPa (cohesion).

8. What is the maximum load capacity of the foundation?
   - [ ] 200 kPa
   - [ ] 250 kPa
   - [ ] 300 kPa
   - [ ] 400 kPa
   [ ] None of the above.

   **Accepted Answer:**
   [ ] 200 kPa

9. What is the allowable bearing pressure on the foundation?
   - [ ] 150 kPa
   - [ ] 200 kPa
   - [ ] 250 kPa
   - [ ] 300 kPa
   [ ] None of the above.

   **Accepted Answer:**
   [ ] 200 kPa

10. What is the maximum load capacity of the foundation?
    - [ ] 200 kPa
    - [ ] 250 kPa
    - [ ] 300 kPa
    - [ ] 400 kPa
    [ ] None of the above.

    **Accepted Answer:**
    [ ] 250 kPa

11. What is the deflection criterion for the foundation?
    - [ ] 25 mm
    - [ ] 30 mm
    - [ ] 40 mm
    - [ ] 50 mm
    [ ] None of the above.

    **Accepted Answer:**
    [ ] 25 mm

12. What are the factors that influence the deflection of a foundation?
    - [ ] Material properties of the soil.
    - [ ] Foundation size and shape.
    - [ ] Load type and magnitude.
    - [ ] All of the above.
    [ ] None of the above.

    **Accepted Answer:**
    [ ] All of the above.