

***** EXAMINATION *****

BEARING CAPACITY OF SOILS

1. Bearing capacity is the:

- a) ability of soil to safely carry the pressure from a structure
- b) settlement capacity.
- c) both a and b
- d) None of the above.

2. The critical plane of failure is known as:

- a) ultimate bearing capacity
- b) minimum bearing capacity
- c) slip path
- d) None of the above.

3. The factor of safety for design should be:

- a) 0
- b) 1
- c) 2
- d) 4

4. For design purposes, soil may contain:

- a) mineral particles
- b) air
- c) water
- d) All of the above.

5. Cohesive soils may contain:

- a) oil
- b) silts, clays, and organic material
- c) artificial chemicals
- d) None of the above

6. Deep foundation support cost less than mat foundations for depths:

- a) more than 100 feet
- b) less than 100 feet
- c) less than 50 feet
- d) less than 20 feet

- 7. A pile may be a:**
- a) timber pole
 - b) H-beam
 - c) hollow precast concrete section
 - d) All of the above.
- 8. A drilled shaft is a bored hole:**
- a) carried down to a good bearing stratum and filled with concrete.
 - b) with pre-cast piles.
 - c) containing no reinforcement steel
 - d) None of the above.
- 9. A stone column is constructed using:**
- a) vibroflotation
 - b) pre-cast columns
 - c) cohesive materials
 - d) All of the above.
- 10. The bulging of surface soil near the foundation indicates:**
- a) the soil is sandy
 - b) a shear failure
 - c) the pile was driven too deep
 - d) the pile are too close
- 11. Shear failures occur on one side of the foundation because:**
- a) the soils are homogenous
 - b) the load is concentric
 - c) the load is not concentric
 - d) None of the above
- 12. Factors influencing the ultimate bearing capacity are:**
- a) type and strength of soil
 - b) foundation width and depth
 - c) soil weight in the shear zone
 - d) All of the above.
- 13. A non-load design consideration for a foundation is:**
- a) an earthquake
 - b) rain
 - c) soil strength
 - d) foundation width
- 14. Soil reinforcement may be:**
- a) metal ties
 - b) rocks
 - c) retaining walls
 - d) None of the above.

15. Geotextile horizontal reinforcement fabrics:

- a) allow construction of embankments on soft foundation soils
- b) eliminate soil creep
- c) Both a and b
- d) Neither a nor b

16. Fabric reinforced embankments may fail because:

- a) of lack of rain
- b) of dry conditions
- c) fabric tensile failure
- d) None of the above.

17. The most economical scour protection is:

- a) shotcrete
- b) rock fill
- c) sand fill
- d) concrete fill

18. To estimate uplift pressure beneath foundations, use:

- a) scour tests
- b) a hydrograph
- c) a hydrostatic meter
- d) flow nets.

19. Removing vegetation near a foundation:

- a) may lead to a higher water table
- b) will desiccate the foundation soil more.
- c) will not significantly alter the bearing capacity.
- d) None of the above.

20. Minimum slope from a foundation should be:

- a) 1 per cent
- b) 2 per cent
- c) 5 per cent
- d) 8 per cent

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