01. Lime stabilisation is very effective in treating

a. Sandy soils
b. Silty soils
c. Non-plastic soils
d. Plastic clayey soils

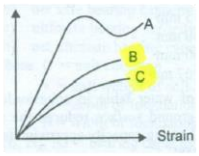
02. Undisturbed sample are obtained by

a. Direct excavations
b. Thin-walled samplers
c. Thick-walled samplers
d. augers

03. Select the correct statement.

a. Stationary piston sampler and rotary sampler are both thick-walled samplers.
b. Stationary piston sampler and rotary sampler are both thin-walled samplers.
c. Stationary piston sampler is a thick-walled sampler and rotary sampler is a thin-walled sampler
d. Stationary piston sampler is a thin-walled sampler and rotary sampler is a thick-walled sampler.

24. The curve A, B and C shown in Fig. 8.0 are respectively the stress-strain curves for stress



a. Dense sand, clay and loose sandy
b. Dense sand, loose sand and clay
c. Loose sand, dense sand and clay
d. Clay, loose sand and dense sand

05. Greater skin friction

a. Retards the sinking of well
b. Accelerates the sinking of well
c. Does not affect the sinking of well
d. None of the above

06. The bearing capacity of a strip footing on a saturated clay is 120 kN/m^2 . The bearing capacity of a circular footing (diameter = width) will be

a. More than 120 kN/m^2
b. Equal to 120 kN/m^2
c. Less than 120 kN/m^2
d. Any of the above

07. A plate load test is useful to estimate

a. Bearing capacity of foundation
b. Settlement of foundation
c. Both bearing capacity and settlement of foundation
d. None of the above

08. The radius of friction circle or ϕ-circle in friction circle method is

a. R
b. R sin ϕ
c. R cos ϕ
d. R tan ϕ

09. The largest value of stability number is

a. 0.261
b. 0.5
c. 1.0
d. 2.0

10. A shallow foundation is defined as a foundation which

a. Has low bearing capacity
b. Has a depth of embedment less than its width
c. Is resting on the ground surface
d. Causes less settlement

11. For an anisotropic soil, permeabilities in x and y directions are K_x and K_y respectively in a two dimensional flow the effective permeability k_{eq} for the soil is given by:

a. $K_x + k_y$
b. K_x / K_y
c. $(K_x^2 + K_y^2)^{1/2}$
d. $(K_x k_y)^{1/2}$

12. For sand of uniform spherical particles, the ratio of void in the loosest and the densest states is:

a. 2.6
b. 3.5
c. 4.6
d. 3.0

13. The description of 'sandy silty clay' signifies that

a. The soil contains unequal proportions of the three constituents in the order sand > silt > clay
b. The soil contains equal proportions of sand, silt and clay
c. The soil contains equal proportions of sand, silt and clay
d. The soil contains unequal proportions of the three constituents such that clay > silt > sand.

14. Increasing the depth of foundation in saturated clays results in an increased ultimate bearing capacity for strip footings

a. Because the bearing capacity factor N_γ decreases
b. Because the bearing capacity factor N_c increasesas the depth increases.
c. The term in the bearing capacity equation qN_q increases with depth.
d. Because the angle of internal friction decreases as the depth of foundation increases.

15. soil having particles of nearly the same size is known as:

a. Well graded
b. Uniformly graded
c. Poorly graded
d. Gap graded

16. The unit weight of a soil at zero air voids depends on:

a. Specific gravity
b. Water content
c. Unit weight of water
d. All the above

17. The soil most susceptible to liquefaction are

a. Saturated dense sand
b. Saturated fine and medium sand of uniform particle size
c. Saturated clalys of uniform size
d. Saturated gravels and cobbles

18. The value of bearing capacity factor for cohesion N_c for piles as per Meyerhof is taken as

a. 6.2
b. 9.0
c. 5.14
d. 5.17

19. The slope of the e-log p curve for a soil mass gives

a. Coefficient of permeability , K
b. Coefficient of consolidation, C_v
c. Compression index, C_c
d. Coefficient of volume compressibility, m_v

20. If r = frequency ratio, D = damping ratio then magnification factor in a damped forced vibration is equal to:

a. $1/\sqrt{(1-r^2)^2+4r^2D^2}$

b. $1/\sqrt{(1-r^2)^2+4Dr}$

c. $1/\sqrt{(1-r^2)^2-4r^2D^2}$

d. $1/\sqrt{(1+r^2)^2-4r^2D^2}$