

Q)The value of coefficient of lateral pressure at rest can be determine if the value of -----is known.-->

Poissons ratio

Q)The expression for vertical stress at a point below the corner of a rectangular loaded area was derived from--> **Boussinesqs theory**

Q)For layered deposits, which show large lateral restraint, the more appropriate theory of stress distribution is considered to be ----- --> **Westergaard theory**

Q)The soil pressure distribution below a rigid footing on the surface of a cohesion less soil is--> **maximum at centre**

Q)When a uniformly loaded (load intensity q per unit area) circular area tends to be very large in comparison with depth z , the vertical stress at point P (which is at centre) is approximately equal to--> **q**

Q)When the ground surface is horizontal and the properties of the soil do not change along a horizontal plane, the stress due to self-weight is known as--> **geostatic stress**

Q)Isobar is a contour of equal ----- --> **stress**

Q)----- are useful for determining vertical stresses at any point on that horizontal plane due to a number of concentrated loads on ground.--> **influence diagrams**

Q)The stress developed at a point in the soil exactly below a point load at the surface is--> **inversely proportional to the square of the depth of the point.**

Q)The intensity of vertical pressure directly below a concentrated load of $3/2$ tones at a depth of $3/2$ meters is given by--> **1 t/m^2**

Q)Vertical stress on a vertical line at a constant radial distance from the axis of a vertical load--> **first increases, attains a maximum value and then decreases**

Q)Which of the following statement is true in case of Boussinesqs solution?--> **the point loads applied below ground surface cause smaller stresses than are caused by surface load.**

Q)In Westergaard and Boussinesqs theories, when r/z is greater than 2, the effect of load becomes--> **negligibly small**

Q)The soil pressure distribution below a rigid footing on the surface of a cohesive soil is--> **minimum at centre**

Q)Which is false in the following statements?--> **the vertical stress increases with an increase in r/z ratio.**

Q)Borowickas results can be used to determine----- in cohesive soil.--> **contact pressure**

Q)Newmarks chart are based on--> **Boussinesqs solution**

Q)The pressure transmitted from the base of a foundation to soil is--> **contact pressure**

Q)The value of compression index for a remoulded sample whose liquid limit is 50% is--> **0.28**

Q)Even after the complete dissipation of excess pore pressure, a little more consolidation is possible. This is known as ----- --> **secondary consolidation**

Q)The slope of linear portion of the void ratio versus $\log p$ plot is called as--> **Compression Index**

Q)Which of the following is incorrect--> **the recompression index is greater than the compression index.**

Q)In Terzaghis theory of one-dimensional consolidation--> **hydrodynamic lag alone is considered and plastic lag is ignored.**

Q)Direct measurement of permeability of the specimen at any stage of loading can be made--> **only in fixed ring type consolidometer**

Q)The changes that take place during the process of consolidation of a saturated clay would include--> **a decrease in pore water pressure and an increase in effective pressure.**

Q)The ultimate consolidation settlement of a structure resting on a soil--> **decreases with the increase in the initial void ratio.**

Q)Select the correct statement.--> **coefficient of compressibility of an over consolidated clay is less than that of a normally consolidated clay.**

Q)The unit of the coefficient of consolidation is--> **cm^2/sec**

Q)If the time required for 50% consolidation of a remoulded sample of clay with single drainage path is t , then the time required to consolidate the same sample with same degree of consolidation but with double drainage is--> **$t/4$**

Q)Degree of consolidation is--> **Directly proportional to time and inversely proportional to square of drainage path**

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- Q) Coefficient of consolidation of a soil is affected by--> **both compressibility and permeability**
- Q) If the initial excess pore pressure is u_0 and that at a particular instant is u , the consolidation (percent) U is--> **$(1-u/u_0) \times 100$**
- Q) The aim of doubling the pressure each time in the consolidation test is to see that the soil is always in a condition.--> **normally consolidated**
- Q) The stress responsible for the mobilization of shearing strength of a soil is--> **effective normal stress.**
- Q) The time factor for a particular average degree of consolidation--> **depends upon the distribution of initial excess hydrostatic pressure.**
- Q) Which one of the following clays behaves like a dense sand?--> **over consolidated clay with a high over consolidation ratio**
- Q) Within the consolidation process of a saturated clay--> **a gradual decrease in neutral pressure and a gradual increase in effective pressure takes place and sum of the two is constant.**
- Q) Consolidation--> **is a function of the effective stress.**
- Q) The ratio of volumetric strain per unit increase in effective stress is called--> **coefficient of volume change**
- Q) Compressibility of sandy soil is--> **much less than that of clayey soil**
- Q) With an increase in the liquid limit, compression index--> **increases**
- Q) The empirical relationship established by Skempton between the compression index (C_c) and liquid limit (w_L) for a undisturbed sample is..... --> **$C_c = 0.009 (w_L - 10)$**
- Q) A cohesion less soil having an angle of shearing resistance of ϕ , is standing at a slope angle of i . the factor of safety of the slope is--> **$\frac{\tan \phi}{\tan i}$**
- Q) Mohr coulomb theory neglects--> **the effect of the intermediate principal stress**
- Q) Which one of the following tests cannot be done without undisturbed sampling--> **shear strength of clay**
- Q) Which one of the following planes is most likely to be the failure plane in sandy soil?--> **plane with the maximum angle of obliquity.**
- Q) In the stress- strain graph of triaxial test, normal consolidated clay curve is--> **below the over consolidated clay curve**
- Q) In direct shear test, for loose sand, the shear stress increases gradually and finally attains a constant value is known as--> **residual stress**
- Q) The void ratio at which further strain does not produce volume changes is called--> **critical void ratio**
- Q) For a clay the stress-strain curve shows a peak.--> **over consolidated**
- Q) In direct shear test generally the failure strain is 2% to 4% for dense sand and ----for loose sand.--> **12% to 16%**
- Q) A cylindrical specimen of saturated soil failed under an axial vertical stress of 100 kN/m^2 when it was laterally unconfined. The failure plane was inclined to the horizontal plane at an angle of 45° . the value of cohesion and angle of internal friction are respectively--> **0.05 N/mm^2 and 0°**
- Q) An undrained triaxial compression test is carried out on a saturated clay sample under a cell pressure of 100 kN/m^2 . The sample failed at a deviator stress of 200 kN/m^2 . The cohesion of the given sample of clay is--> **100 kN/m^2**
- Q) When a sample of sand is sheared under undrained condition, then--> **volume does not change**
- Q) In a triaxial compression test when drainage is allowed during the first stage only and not during the second stage, the test is--> **consolidated un drained test**
- Q) Unconfined compressive strength test is--> **undrained test**