Q:) 'Talus' is the soil transported by

A : Wind

B : water

C : Glacier

D : Gravitational force

Q:) According to the Indian standards the specific gravity is the ratio of the unit weight of soil solids to that of water at a temperature of

A : 17^0C

B : 23^0C

C : 27^0C

D : 30^0C

Q:) Determination of water content of a soil sample suspected to contain gypsum is made by drying the sample for longer period at a temperature not more than

A : 60^{0}C

B : 80^{0}C

C : 100^{0}C

D : 110^{0}C

Q:) The weight of a pycnometer containing 400 g sand and water full to the top is 2150 g. The weight of pycnometer full of clean water is 1950 g. If specific gravity of the soil is 2.5, the water content is

A : 0.05

B : 0.1

C : 0.15

D : 0.2

Q:) The minimum water content at which the soil retains its liquid state and also possesses a small shearing strength against flowing, is known

A : Liquid limit

B : Plastic limit

C : Shrinkage limit

D : Permeability limit

Q:) The property of a soil which allows it to be deformed rapidly without rupture, elastic rebound and also a volume change, is known

A : Porosity

B : Plasticity

C : Permeability

D : Ductility

Q:) For general engineering purposes, soils are classified by

A : Particle size classification system

B : Textural classification system

C : High way research board (HRB), classification system

D : Unified soil classification system

Q:) The soil moisture driven off by heat, is called.

A : Free water

B : Hydroscopic water

C : Gravity water

D : None of these.

Q:) The capillary rise of water.

A : Depends upon the force responsible

B : increases as the size of the soil Particles increases

C : decreases as the size of the soil particles decreases

D : Is less in wet soil than in dry soil.

Q:) The internal molecular attraction of a soil, the cohesion.

A : Decreases as the moisture content increases

B : Increases as the moisture content decreases

C : Is more in well compacted clays

D : Depends upon the external applied load.

Q:) If there is no impervious boundary at the bottom of a hydraulic structure, stream lines tend to follow:

A : A straight line

B : A parabola

C : A semi-ellipse

D : A semi-circle.

Q:) A flow line makes angles θ1θ1 and θ2θ2 with the normal to the interface of the soils having permeabilities k_1, k_2 before and after deflection. According to the law of deflection of the flow lines at the interface of the dissimilar soils.

A : $\sin \theta_1 / \sin \theta_2 + k_1 / k_2$

B : $\cos \theta_1 / \cos \theta_2 + k_1 / k_2$

C : $\tan \theta_1 / \tan \theta_2 + k_1 / k_2$

D : $\tan \theta_2 / \tan \theta_1 + k_1 / k_2$

Q:) A phreatic line is defined as the line within a dam section below which there are.

A : Positive equipotential lines

B : Positive hydrostatic pressure

C : Negative hydrostatic pressure

D : None of these.

Q:) The shear strength in plastic undrained clay, is due to.

A : Inter-granular friction

B : Internal friction

C : Cohesion

D : None of these.

Q:) Through a point in a loaded soil mass, there exists n typical planes mutually orthogonal on which the stress is wholly normal and no shear stress acts, if n is

A : 1

B : 2

C : 3

D : 4

Q:) The Mohr's straight theory is based on the following fact :

A : Material fails essentially by shear

B : Ultimate strength of the material is determined by the stress in the plane of slip

C : Failure criterion is independent of the intermediate principal stress

D : All the above.

Q:) The coefficient of compressibility of soil, is the ratio of.

A : Stress to strain

B : Strain to stress

C : Stress to settlement

D : Rate of loading to that of settlement.

Q:) If drainage is permitted throughout the test, during the application of both normal, and shear stresses so that full consolidation occurs and no excess pore pressure is set up at any stage of the test, is known as.

A : Quick test

B : Drained test

C : Consolidated undrained test

D : None of these.

Q:) A direct shear test possesses the following disadvantage:

A : A relatively thin thickness of sample permits quick drainage

B : A relatively thin thickness of sample permits quick dissipation of pore pressure developed during the test

C : As the test progresses the area under shear, gradually changes

D : None of these.

Q:) The area of cross-section A at failure or during any stage of Triaxial Compression Test and its initial length (L) and volume (V), are related by the equation.

A : $A = \dfrac{V + \Delta V}{L - \Delta L}$

B : $A = \dfrac{V - \Delta V}{V + \Delta L}$

C : $A = \dfrac{V + \Delta V}{L - \Delta L}$

D : $A = \dfrac{V + \Delta V}{L + \Delta L}$

Q:) Pick up the correct statement from the following :

A : An unconfined compression test is a special case of triaxial compression test

B : An unconfined compression test is a special case of direct shear test

C : The confining pressure is maximum during an unconfined compression test

D : The cylindrical specimen of a soil is subjected to major principal stress till it fails due to shearing along the plane of the failure.

Q:) For testing a saturated clay for shear strength, the test recommended, is.

A : Direct shear test

B : Triaxial compression test

C : Unconfined compression test

D : All the above.

Q:) The angle of internal friction of clays, is usually.

A : 0° to 5°

B : 5° to 20°

C : 20° to 30°

D : 30° to 45°.

Q:) A soil mass is said to be in plastic equilibrium if.

A : It is stressed to maximum

B : It is on the verge of failure

C : It is in plastic stage

D : It starts flowing.

Q:) A failure wedge develops if a retaining wall.

A : Moves away from the backfill

B : Moves towards the backfill

C : Sinks downwards

D : Stresses equally by vertical and horizontal forces.

Q:) The lateral earth pressure on a retaining wall.

A : Is equal to mass of the soil retained

B : Proportional to the depth of the soil

C : Proportional to the square of the depth of the soil

D : None of these.

Q:) According to Coulomb's wedge theory, the active earth pressure slides the wedge.

A : Down and outwards on a slip surface

B : Up and inwards on a slip surface

C : Horizontal upward and parallel to base

D : Horizontal inward and parallel to base.

Q:) For slopes of limited extent the surface of slippage, is usually along.

A : A parabolic arc

B : An elliptical arc

C : A straight line

D : A circular arc.

Q:) Failure of a slope occurs only when total shear force is.

A : Equal to total shearing strength

B : Greater than total shearing strength

C : Less than total shearing strength

D : None of these.