Q:) A soil mass coated with a thin layer of paraffin weighs 460 g. when immersed, it displaces 299 cc of water. the weight of paraffin is 10 g. if specific gravity of solids is 2.5 and that of paraffin is 10 g. if specific gravity of solids is 2.5 and that of paraffin 0.9, the void ratio of soil, is.

A : 0.55

B : 0.6

C : 0.65

D : 0.70.

Q:) A moist soil sample of volume 60 cc. weighs 108 g and its dried weight is 86.4 g. if its absolute density is 2.52, the degree of saturation is.
A : 54%
B : 64%
C : 74%
D : 84%

Q:) A decrease in water content results in s reduction of the volume of a soil in.

A : Liquid state

B : Plastic state

C : Semi solid state

D : All of these.

Q:) The shearing strength of a cohesionless soil depends upon.

A : Dry density

B : Rate of loading

C : Confining pressure

D : Nature of loading.

Q:) Match list I with list II and select the correct answer using the codes given under the lists:

List I	List II
A. Oven - drying method	1. Most accurate laboratory method
B. Sand bath method	2. For rough value of the water content
C. Calcium carbide methods	3. For embankment soil
D. Pycnometer method	4. For soil whose specific gravity is accurately known

Codes:

A : A - 1, B - 4, C - 3, D - 2

B : A - 4, B - 3, C - 2, D - 1

C : A - 1, B - 2, C - 3, D - 4

D : A - 2, B - 3, C - 1, D - 4

Q:) Consider the following statements regarding using dispensing agent for preparing soil suspension.
1. Sodium oxalate
2. Sodium silicate
3. Tetra sodium pyrophosphate
4. Sodium hexameta phosphate Of these statements:
A : 1, 2 and 3 are correct
B : 2, 3 and 4 are correct
C : 1, 3 and 4 are correct
D : 1, 2, 3 and 4 are correct.

Q:) Consider the following statements regarding the factors affecting permeability of soils
1. Permeability varies approximately as the square of the grain size
2. Permeability is directly proportional to the unit coefficient of water and its viscosity
3. Permeability is greatly influenced in fine grained soils
4. Permeability is reduced in the presence of organic matter
Of these statements:
A : 1, 2 and 3 are correct
B : 2, 3 and 4 are correct
C : 1, 3 and 4 are correct
D : 1, 2, 3 and 4 are correct

Q:) Consider the following inequalities regarding the filters provided in a dam.

1. $\dfrac{(D_{15})_f}{(D_{85})_s} < 4-5$

2. $\dfrac{(D_{15})_f}{(D_{15})_s} > 4-5$

3. $\dfrac{(D_{25})_f}{(D_{75})_s} < 20$

4. $\dfrac{(D_{50})_f}{(D_{50})_s} < 25$

A : 1 alone is correct

B : 2 and 3 are correct

C : 1, 2 and 4 are correct

D : 3 and 4 are correct,

Of these inequalities:

Q:) Assertion A: The temperature at which water freezes in the pores of a soil depends on the pore size

Reason R: The smaller the pores the higher the freezing temperature in soil

Codes:

A : Both A and R are true and R is the correct explanation of A

B : Both A and R are true but R is not the correct explanation of A

C : A is true but R is false

D : A is false but R is true.

Q:) Consider the following statements regarding isotropic consolidation of clays
1. Consolidation in the triaxial apparatus under equal all-round pressure is known as isotropic, consolidation
2. The maximum value of effective stress in the past divided by the present value is known as the over consolidation ratio (OCR)
3. A normally consolidated clay has an over consolidation ratio greater than unity.
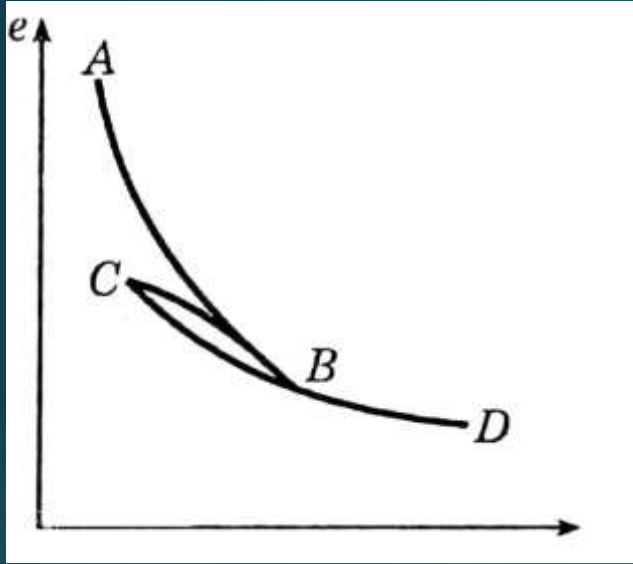4. An over consolidated clay has an over consolidation ratio of unity.
Of these statements:
A : 1, 2, 3 and 4 are correct
B : 1, 2, 3 are correct
C : 1 and 2 are correct
D : 1 alone is correct.

Q:) The characteristic relationship between e and a3 of clay is shown in the figure Consider the following statements:

1. AB is the curve for the normally consolidated condition
2. BC is the curve is effective stress if reduced after consolidation to point B.
3. CD is the curve if the effective stress is increased.
4. CD is known as recompression curve Of these statements:
A : 1 alone is correct
B : 1 and 2 are correct
C : 1, 2 and 3 are correct
D : 1, 2, 3 and 4 are correct.

Q:) Consider the following statements regarding the Rankine's Theory of Earth Pressure
1. Movement of a retaining wall away from the soil introduces active pressure
2. Movement of a retaining wall against the soil mass introduces passive pressure
3. Product of active pressure coefficient and passive pressure coefficient is 1/2
4. Active and passive pressures in retaining walls increase linearly with depth. Of these statements:
A : 1 and 2 are correct
B : 1 and 3 are correct
C : 2 and 3 are correct
D : 1, 2 and 4 are correct

Q:) Consider the following statements regarding the assumptions in Terzaghi's Theory of One-Dimensional Consolidation.
1. The soil is homogeneous
2. The soil is fully saturated
3. The solid particles are incompressible
4. The water particles are compressible Of these statements
A : 1 and 2 are correct
B : 2 and 3 are correct
C : 3 and 4 are correct
D : 1, 2 and 3 are correct.

Q:) The tendency of sand to expand by applying the shearing load, is called.

A : Thixotropy

B : DA latancy

C : Remoulding loss

D : Degree of sensitivity.

Q:) Atterburg, a scientist, based on water content (w) defined:

A : Four states of a soil and four boundaries between them

B : Five states of soil and four boundaries between them

C : Four states of soil and three boundaries between them

D : Three states of soil and four boundaries between them

Q:) If the consistency index of a soil is equal to unity, its moisture content is.

A : At the plastic limit

B : at the liquid limit

C : In a semi-solid state

D : None of these.

Q:) When the diameter of the capillary tube is d cm, the rise of the column in cm is.

$$A : Hc = \frac{0.206}{d}$$

$$B : Hc = \frac{0.306}{d}$$

$$C : Hc = \frac{0.406}{d}$$

$$D : Hc = \frac{0.5}{d}$$

Q:) Geologic cycle for the formation of soil, is

A : Upheaval → transportation → deposition → weatheringUpheaval → transportation → deposition → weathering

B: Weathering → upheaval → transportation → deposition Weathering → upheaval → transportation → deposition

C: Trasportation → upheaval → weathering → deposition Trasportation → upheaval → weathering → deposition

D : None of these

Q:) According to IS:2720-1965, the composition of a dispersing solution used in pipette analysis for determining the size of particles, is

A : Sodium-hexametaphosphate 33 g, sodium carbonate 7 g and distilled water one litre

B : Sodium-hexametaphosphate 7 g, sodium carbonate 33 g and distilled water one litre

C : Sodium-hexametaphosphate 23 g, sodium carbonate 17 g and distilled water one litre

D : None of these