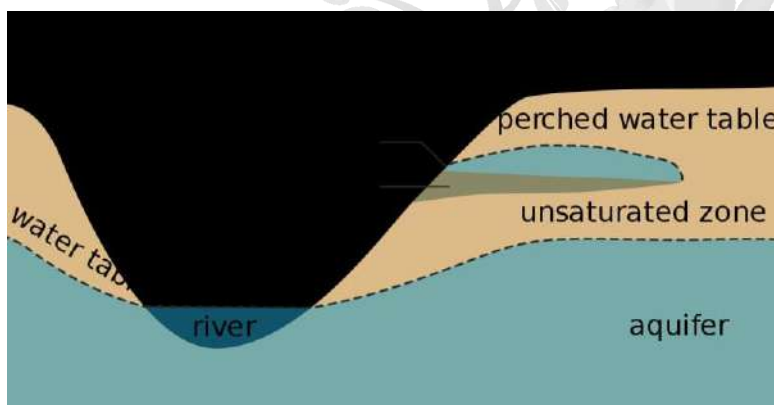**Question : If within a zone of saturation, an impervious deposit below a pervious deposit is found to support a body of saturated material, then this body of saturated material is known as**

A : Plowing well
B : Aquiclude
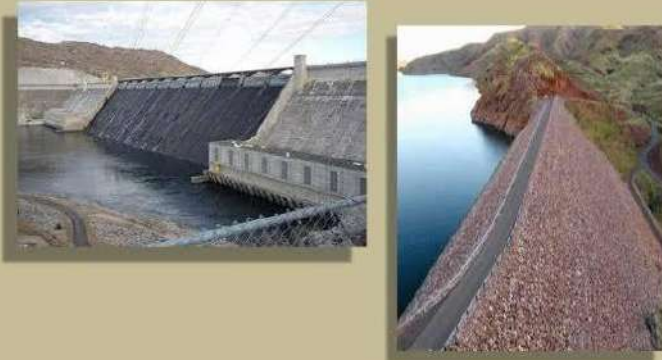**C : Artesian aquifer**
D : Perched aquifer

Question : _____ is an example of a non-rigid dam.

A : Arch dam
B : Timber dam
C : Steel dam
D : Rockfill dam

Rigid Dams & Non-Rigid Dams

Question : For the purpose of measuring the stopping sight distance, IRC had suggested the height of eye level of driver and the height of the object above the road surface as

A : 1.5 m and 0.15 m
B : 1.2 m and 0.12 m
C : 1.2 m and 0.15 m
D : 1.5 m and 0.12 m

Question : The road length of National Highway by Third Road Plan Formulae, in a cretain district in india having its area as 13,400 sq.m will be

A : 134 km
B : 268 km
C : 402 km
D : 1340 km

Question : As per the modified classification of road system by the Third Road Development Plan, 1981-2001, the roads in the country under 'Primary System' of road network consist of

A : Expressways and National Highways
B : State Highways (SH) and Major District Roads (MDR)
C : Other District Roads (ODR) and Village Roads (VR)
D : All of the above

Question : As per IS 10500, acceptable limit for chlorides in mg/l in drinking water is

A : 100 mg/l
B : 250 mg/l
C : 500 mg/l
D : 1500 mg/l

Question : In the activated sludge process, sludge volume index is used to decide

A : Quality of raw sewage
B : Quality of final effulent
C : Recirculation ratio of sludge
D : Rate of aeration

Question : An appurtenance used to connect high level branch sewer to low level branch sewer is

A : Mahhole
B : Drop manhole
C : Inverted siphon
D : Catch basin

Question : The maximum tolerance in overall length of a 20 in and 30 m metric chain shuld be respectively

A : ±2 mm, ±8 mm
B : ±3 mm, ±5 mm
C : ±5 mm, ±8 mm
D : ±8 mm, ±5 mm

Question : The lines joining points of equal dip are called

A : Aclinic lines
B : Isogenic lines
C : Agonic lines
D : Isoclinic lines

Question : In a typical compaction curve as indicated in the diagram, points 'A' and 'B' have dry densities. Choose the moat appropriate statement from the following:
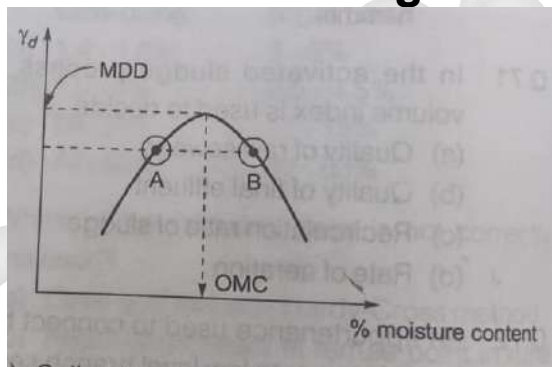
A : Soil at 'A' will have more swelling potential and less shrinking upon moisture-variation, compared to 'B'.
B : Soil at 'A' will have same swelling and shrinking potential as soil at 'B'.
C : Soil at 'A' will have loss swelling potential and higher shrinking potential compared with soil at 'B'.
D : The swelling-shrinking potential for soil at 'A' and 'B' cannot be predicted with the given date.

Question : Select the appropirate alternative from the following:
Soil deposit is called as 'over-consolidated', if where P_o is the present effective overburden pressure and P_c is preconsolidation pressure.

A : $P_o > P_c$
B : $P_o \leq P_c$
C : $P_o = P_c$
D : $P_o < P_c$

Question : A wall 6 m high has a smooth vertical back and retained sand as a backfill which is submerged. The sand has $\gamma_{sat} = 20$ kN/m^3 and $\varphi = 30_o$. The total active earth pressure is

A : 90 kN/m^2
B : 60 kN/m^2
C : 120 kN/m^2
D : None of the above

Q. Least count of a levelling staff is:

   A.   1 cm

   B.   5 mm

   C.   1 mm

   D.   None of the above

Q. What will be the curvature correction for staff reading, in levelling for a distance of 1000 m?

A. 0.0673 m

B. 0.0785 m

C. 78.50 m

D. 6.73 m

Q. Spire test is carried out for the permanent adjustment of:

    A.   Dumpy level
    B.   Auto level
    C.   Tilting level
    D.   None of these

Q.What is the food to micro-organism ratio in an aeration tank having following data

    1.   Flow=1 MLD, MLSS= 2000 mg/L
    2.   Influent BOD_5= 200 mg/L
    3.   Volume of aeration tank= 500 m³

    A.   0.20
    B.   5.00
    C.   0.80
    D.   1.25

Q. Select the correct sequence of different phases of biomass curve:

A : Lag phase → Log growth phase → stationery phase → endogenous phase
B : Lag phase → endogenous phase → stationery phase → Log growth phase
C : Endogenous phase → Lag phase → stationery phase → Log growth phase
D : Log growth phase → Lag phase → endogenous phase → stationery phase

Q.Which one of the following expresses the degree of disturbance of undisturbed clay sample due to remolding?

A : Thixotropy
B : Dilatancy
C : Sensitivity
D : Plasticity

Q.Given the coefficient of curvature = 1.4, D_{30} = 3 mm, D_{10} =0.6 mm. Based on this information of praticle size distribution for use as sub grade, this soil is classified as

A : Uniformly-graded sand
B : Well-graded sand
C : Very find sand
D : Poorly-graded sand

Q.From a flownet which of the following information can be obtained?
1. Rate of flow
2. Pore water pressure
3. Exit gradient
4. Permeability
Select the correct answer using the codes given below:

A : 1, 2, 3 and 4   B : 1, 2 and 3
C : 2, 3 and 4 only   D : 1 only

Q. Given that for a soil deposit, K_o = earth pressure coefficient at rest; K_p= pressure coefficient; μ = Poisson's ratir. The value of $(1-\mu)\mu$ is given by

A : KaKp

B : KoKa

C : KpKa

D : 1Ko

Q. The minimum bearing capacity of a soil under a given footing occurs when the groundwater table at the location is at

A : The base of the footing

B : The ground level

C : Depth equal to one-half the width of the footing

D : A depth equal to the width of the footing

Q. In Terzaghi's bearing capacity analysis, the soil wedge immediately below the footing remains in state of

A : Plastic equilibrium

B : Radial shear

C : Elastic equilibrium

D : Linear shear

Q. The maximum number of vehicles beyond which the rotary may not function effectively is

A : 500 Vehicles per hour

B : 500 Vehicles per day

C : 5000 vehicles per hour

D : 5000 Vehicles per day