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:) A sample of dry sand was tested in direct shear test apparatus under a normal load of 72 kg. The shear load required to fail the sample was found to be 36 kg. The angle of internal friction (ϕ) will be:

A : $\tan^{-1}(72+36/36)$

B : $\tan^{-1}(72+36/72)$

C : $\tan^{-1}(36/72)$

D : $\tan^{-1}(72/36)$

Q:) From the following statements, select the most appropriate statement:
Westergaard's analysis for stress computation within soil mass assumes.
A : Point load at the surface and soil being homogeneous and isotropic
B : Line load at the surface and soil being homogeneous and non-isotropic
C : Point load at the surface and soil being homogeneous and non-isotropic
D : Line load at the surface and soil being non-homogeneous and isotropic

Q:) Match the pairs:

List-I	List-II
A. Compaction	I. Expulsion of water
B. Swelling	II. Sudden volume decrease
C. Consolidation	III. Increase in volume
D. Collapse	IV. Expulsion of air

A : A-(i), B-(iii), C-(iv), D-(ii)

B : A-(ii), B-(iii), C-(iv), D-(i)

C : A-(i), B-(iv), C-(ii), D-(iii)

D : A-(iv), B-(iii), C-(i), D-(ii)

Q:) As per IS 10430-1982, the life of canal for concrete lining is assumed to be:
A : 40 years
B : 60 years
C : 80 years
D : 99 years

Q:) In _____ the overflowing water is guided smoothly over the crest and profile of the spillway.

A : Straight drop Spillway

B : Ogee Spillway

C : Tunnel Spillway

D : Siphon Spillway

Q:) The maximum width of expansion joint and maximum spacing between expansion joint for rough interface layer is:

A : 2.5 cm and 160 m

B : 2.0 cm and 130 m

C : 2.5 cm and 140 m

D : 2.5 cm and 100 m

Q:) The tests performed for detecting whether bitumen is cracked or not, is/are:
A : Spot test
B : Solubility test
C : Float test
D : Ductility test

Q:) Failure in flexible pavements are due to the failure of:

1. Sub grade
2. Base course
3. Wearing Course

A : 1 and 2 only

B : 1 and 3 only

C : 2 and 3 only

D : 1, 2 and 3

Q:) The critical condition of stresses for combination of stresses in cement concrete pavement during summer is:

A : load stress + wraping stress - frictional stress

B : load stress + wraping stress

C : load stress + wraping stress + frictional stress

D : load stress 4 - frictional stress

Q:) What should be the minimum width of foot path while designing a bridge for rural areas?

A : 1.5 m

B : 2.0 m

C : 2.5 m

D : 3.0 m

Q:) In waste water treatment plant secondary settling tanks are designed to remove:
A : Organic settleable solids
B : Inorganic settleable solids
C : Bioflocculated solids
D : Dissolved solids

Q:) As per Central Pollution Control Board (CPCB) Air Quality Index for satisfactory condition is in the range of:

A : 301 to 400

B : 201 to 300

C : 101 to 200

D : 51 to 100

Q:) Permanent hardness is removed by:
1. Lime soda process
2. Boiling
3. Demineralisation process
4. Base exchange process
A : 1 only
B : 2 only
C : All of the above
D : 1, 3 and 4

Q:) As per CPCB, ambient Air Quality Standards in respect of noise during day time and night time for residential area are:

A : 75 dB and 70 dB respectively

B : 65 dB and 55 dB respectively

C : 55 dB and 45 dB respectively

D : 50 dB and 40 dB respectively

Q:) What is the food to micro-organism ratio in an aeration tank having following data?
Flow=1 MLD, MLSS= 2000 mg/L
Influent BOD_5= 200 mg/L
Volume of aeration tank= 500 m³
A : 0.2
B : 5
C : 0.8
D : 1.25

Q:) The stone whose crushing strength is maximum, is:
A : granite
B : chalk
C : slate
D : marble

Q:) As per the Building Byelaws, how much should be the marginal distance that is to be left in the front?
A : At least 3 m
B : Ate least 5 m
C : More than 5 m
D : More than 10 m

Q:) What is a Mullion in a window shutter?
A : Vertical member running through shutter of window
B : Horizontal member of shutter
C : Inclined battening
D : None of the above

Q:) How much is the covering capacity of cement panit?

A : About 18 m²/kg per coat

B : About 20 m²/kg per coat

C : About 12 m²/kg per coat

D : About 4 m²/kg per coat

Q:) What does not fit into the classification of pile based on function?
A : BEaring pile
B : Friction pile
C : Compaction pile
D : Steel pile

Q:) Cavity or hollow space in a wall is provided for:

1. Prevention of dampness

2. Heat insulation

3. Sound insulation

4. Efforesence

A : 1 and 2

B : 1 and 3

C : 1, 2 and 4

D : 1, 2, 3 and 4

Q:) The distance from the centre of a pumped well to the point, where the drawdown is zero or is inappereciable, is known as
A : Drawdown
B : Cone of pressure
C : Radius of influence
D : Piezometric surface

Q:) In case of gravity dams, the factor of safety against over turning should not be less than

A : 1

B : 1.1

C : 1.25

D : 1.5

Q:) Sharper crest of an ogee spillway
A : Increases the value of coefficient of discharge
B : Decreases the effective head
C : Increases stability of crest due to hydrostatic pressure
D : Has no effect on any one of the above

Q:) 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

Q:) Match the following:

List-I	List-II
A.Primary survey	I. Collect general chracteristics of an arena
B.Map study	II. Improvement in horizontal and vertical alignments
C.Realignment of highway	III. Collect physical information
D.Reconnaissance	IV. Alignment avoiding valleys, ponds or lakes

A : A-I, B-IV, C-II, D-III

B : A-III, B-II, C-IV, D-I

C : A-I, B-II, C-IV, D-III

D : A-III, B-IV, C-II, D-I

Q:) 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

Q:) The Benkelman Beam Deflection method is used for
A : Flexible overlay on flexible pavment
B : Rigid overlay on rigid pavment
C : Flexible overlay on rigid pavment
D : Rigid overlay on flexible pavment

Q:) The width of carriageway for various classes of roads standardised by the Indian Road Congress (IRC) for two lanes without raised kerbs is

A : 3.75 m

B : 7.00 m

C : 7.50 m

D : 5.50 m

Q:) _____ loading is adopted on all roads on which permanent bridges and culverts are constructed.
A : IRC Class A
B : IRC Class AA
C : IRC Class B
D : IRC Class AB

Q:) Which one of the following shapes is suitable for the construction of tunnel in non-cohesive soils?
A : Rectangular
B : Horse-shoe
C : Egg-shaped
D : Circular

Q:) Which among the following is not a part of shield equipment?
A : Gravel tank
B : Trailing dam
C : Nipper car
D : Chute

Q:) Which of the following is a serious health issue in case of workers involved in tunnelling operations?
A : Pneumonia
B : Deafness
C : Silicosis
D : Jaundice

Q:) The amount of fresh air required to maintain ventilation for workers inside the tunnel should be
A : 1 - 5 m³/minute
B : 6 - 14 m³/minute
C : 20 - 30 m³/minute
D : 30 - 50 m³/minute

Q:) In compressed air tunnelling, the amount of air required per minute per m^2 of face area is

A : 1 m³/min/²

B : 6 m³/min/²

C : 10 m³/min/²

D : 30 m³/min/²

Q:) Activated sludge process is an
A : Aerobic attached growth system
B : Anaerobic attached growth system
C : Anerobic suspended growth system
D : Aerobic suspended system

Q:) 'If B.O.D. of waste water sample after 5 days incubation at 20°C is 100 mg/l, deoxygenation rate constant at 20°C is 0.1 per day, ultimate B.O.D. will be
A : 120.20 mg/l
B : 146.25 mg/l
C : 200.45 mg/l
D : 225.60 mg/l

Q:) 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

Q:) 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

Q:) 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

Q:) Closed contour lines with one or more higher value contours inside it represent

A : A hill

B : A depression

C : A cliff

D : A valley

Q:) The lines joining points of equal dip are called
A : Aclinic lines
B : Isogenic lines
C : Agonic lines
D : Isoclinic lines

Q:) Sataement A: Terzaghi's bearing capacity theory assumes strip foundation in the analysis.
Statement B: Terzaghi's theory does not consider development of shear resistance in the soil mass above founding level.
A : Both the statements A and B are true
B : Statement A is true but R is false
C : Statement A is false but R is true
D : Both the statements A and B are false