CIVIL ENGINEERING

1. The average rainfall of our country is
(a) 109 cm (b) 119.4 cm
(c) 115.6 cm (d) 99 cm
Ans.: (b) 119.4 cm

2.The odour of water can be determined by
(a) Thermometer (b) Osmoscope
(c) Jackson's turbid meter (d) None
Ans:- (b) Osmoscope

3.The safe speed on a highway is
(a) 50th percentile speed
(b) 75th percentile speed
(c) 85th percentile speed
(d) 98th percentile speed
Ans:- (c) 85th percentile speed

4.The smallest scale adopted for topographical survey is
(a) 1: 25,000 (b) 1: 50,000
(c) 1: 2,50,000 (d) 1: 5,00,000
Ans:-(d) 1: 5,00,000

5.Flash and fire point test is conducted using
(a) Ring and bell
(b) Benkelman test
(c) Pensky martens closed cup (d) None
Ans:- (c) Pensky martens closed cup

6.In a turbulent pipe flow, inside the laminar sublayer the velocity distribution is
(a) Parabolic (b) Linear
(c) Logarithm (d) Exponential decay type
Ans:- (c) Logarithm

7.Total station is the combination of
(a) Compass & theodolite
(b) Electronic theodolite and EDM
(c) Level and EDM
(d) EDM only
Ans:-(b) Electronic theodolite and EDM

8.Impulse turbines have
(a) Low head and high specific speed
(b) High head and low specific speed
(c) High head and high specific speed
(d) Low head and low specific speed
Ans:- (b) High head and low specific speed

9.The standard recording rain-gauge adopted in India is
(a) Symon's rain gauge
(b) Natural siphon type
(c) Tipping bucket type
(d) Telemetry type
Ans.: (b) Natural siphon type

10.The maximum number in two way two lane roads meeting at right angles is
(a) 12 (b) 32 (c) 4 (d) 24
Ans:- (d) 24

11. An instrument used to study 'Spot Speeds' intraffic engineering is
(a) speedometer (b) enoscope
(c) speed recorder (d) enometer
Ans:- (b) enoscope

12.Residual error of a measurement is the differenceof
(a) true and observed value
(b) most probable and observed value
(c) true and most probable value
(d) observed value and measured value
Ans:-(b) most probable and observed value

13. In CBR test the value of CBR is calculated for a penetration of
(a) 0.125 mm (b) 2.5 mm only
(c) 5 mm also (d) 7 mm also
Ans:- (c) 5 mm also

14. Pickup the incorrect pair

Instrument		**Use**
(a) Clinometer	:	Slope
(b) Prism square	:	To set perpendicular
(c) Line ranger	:	Ranging end points of survey line
(d) Tellurometer	:	Distance

Ans:- (c) Line ranger : Ranging end points of survey line

15. If fore bearing of a line is S 49°52′E (assumingthere is no local attraction), the back bearing of theline will be
(a) S 52°49′ E (b) S 49°52′ E
(c) N 49°08′ E (d) N 49°52′ E
Ans:-(d) N 49°52′ E

16. Formation width" for National Highway single lane road is
(a) 7 m (b) 9 m (c) 12 m (d) None
Ans:- (c) 12 m

17. The instrument used to measure the wind velocity in the atmosphere is
(a) Currentmeter (b) Atmometer
(c) Pycnometer (d) Anemometer
Ans.: (d) Anemometer

18. A geological formation which is essentially impermeable for flow of water even though it may contain water in its pores is called
(a) aquifer (b) aquifuge
(c) aquitard (d) aquiclude
Ans.: (d) aquiclude

19. Calibration of a current meter for use, in channel flow measurement is done in a
(a) wind tunnel (b) water tunnel
(c) Towing tank (d) flume
Ans.: (c) towing tank
Hints:- Calibration of current meter is done in a towing tank.

20.Parallax bar is used to measure
(a) Parallax (b) height
(c) Parallax difference
(d) Relief displacement
Ans:-(c) parallax difference

21.The St. Venant equations for unsteady open – channel flow are
(a) Continuity and momentum
(b) Momentum equation in two different forms
(c) Momentum and energy equation
(d) Energy equation
Ans.: (a) continuity and momentum

22. Linear and Angular accuracy of total station respectively are
(a) 0.1 mm & 0.1" (b) 10 mm & 20"
(c) 5 mm & 10" (d) 1 mm & 10"
Ans:-(a) 0.1 mm & 0.1"

23.A quantity of GW held above an impervious startum, and not connected to the main water table body, is known as
(a) perched GW (b) confined GW
(c) leaky aquifer (d) vadose zone
Ans.: (a) perched GW

24.Which of the following system provides three-dimensional positioning system is
(a) ISS (b) TRANSIT
(c) GPS (d) All of the above
Ans:-(c) GPS

25. A soil formation through which only seepage is possible, being partly permeable and capable of giving insignificant yield, is classified as
(a) aquifage (b) aquifer
(c) aquiclude (d) aquitard
Ans.: (d) aquitard

26. Nagpur road plan is based on
(a) Block pattern
(b) Star and grid pattern
(c) Star and circular pattern
(d) Hexagonal pattern
Ans:- (b) Star and grid pattern

27. The construction of'express way" was planned for first time by
(a) Jayakar Committee
(b) Bombay plan
(c) Nagpur road plan
(d) Lucknow plan
Ans:-(b) Bombay plan

28.The satellite constellation of GPS consists of
(a) 4 satellites (b) 6 satellites
(c) 18 satellites (d) 24 satellites
Ans:-(d) 24 satellites

29.Simpson's rule can be used for computations ofareas when the number of offsets is
(a) Even (b) odd
(c) Any number (d) 3
Ans:-(b) odd

30. The angle of intersection of a contour and a ridge line is
(a) 30° (b) 60° (c) 45° (d) 90°
Ans:- (d) 90°

31.The dynamic viscosity unit of a fluid is
(a) m-s/kg (b) N-m/s^2
(c) N-s/m (d) kg/m-s
Ans:- (d) kg/m-s

32.For open wells the ratio of safe depression head to critical depression head is
(a) 3/4 (b) 4/3 (c) 1/3 (d) 2/3
Ans.: (c) 1/3

33.The properties of cohesion & adhesion in additionto surface tension results in_____
(a) Compressibility (b) Capillarity
(c) Viscosity (d) Density
Ans:- (b) Capillarity

34.Loss of head at the exit of a pipe is
(a) 0.5V^2/2g (b) V^2/2g (c) V^2/g (d) none
Ans:- (b) V^2/2g

35. The BOD_5 of the effluents obtained from septic tanks, isof the order of
(a) 10 - 20 mg / *l* (b) 50 -100 mg / *l*
(c) 100 - 200 mg / *l* (d) more than 200 mg / *l*
Ans:- (c) 100 - 200 mg / *l*

36.Two pipe systems are said to be equivalent when
(a) Length and dia. are same
(b) Length and friction factor are same
(c) Length and discharge are same
(d) Head loss and discharge are same
Ans: (d) Head loss and discharge are same

37.The surface joining the static water levels in several wells penetrating a confined aquifer represents
(a) water table surface
(b) capillary fringe
(c) piezometric surface of the aquifer
(d) cone of depression
Ans.: (c) piezometric surface of the aquifer

38.Cavitation in a hydraulic turbine may occur in all likelihood
(a) In the spiral casing
(b) In the guide passages
(c) At the inlet to runner
(d) At the inlet to draft tube
Ans:- (d) at the inlet to draft tube

39. In 'Collimation method' there is a check on
(a) B.S and F.S only (b) B.S and I.S only
(c) B.S only (d) B.S, F.S and I.S
Ans:- (a) B.S and F.S only

40.The angle of dip at equator is
(a) 0° (b) 45° (c) 90° (d) 180°
Ans:- (a) 0°

41.The two chambered tank in which the upper one is usedfor sedimentation and the lower for digestion is
(a) Imhoff tank (b) Septic tank
(c) Detritus tank (d) Sedimentation tank
Ans:- (a) Imhoff tank

42. "Agonic lines" pass through points of
(a) Zero declination (b) Equal declination
(c) Equal dip (d) Equal bearing
Ans:-(a) Zero declination

43.The aerobic method of composting as practiced in Indiais called
(a) Bangalore method (b) Mangalore method
(c) Indore method (d) Nagpur method
Ans:- (c) Indore method

44.The concept of unit hydrograph was first introduced by
(a) Dalton (b) Sherman
(c) Horton (d) Thiessen
Ans.: (b) Sherman

45.The eyepiece that is generally used for high precise instruments is
(a) Huygen's (b) Ramsden's
(c) Kepler's (d) Euler's
Ans:-(b) Ramsden's

46. The most commonly used type of tube well in India is
(a) Cavity type (b) Strainer type
(c) Slotted type (d) Perforated pipe type
Ans:- (b) Strainer type

47.The upper limit on the area of the basin for the applicability of unit hydrograph is generally taken to be
(a) 100 km^2 (b) 2500 km^2
(c) 5000 km^2 (d) 10000 km^2
Ans.: (c) 5000 km^2

48.Elutrition is the process of
(a) Sludge digestion
(b) Filtration
(c) Sedimentation
(d) Washing digested sludge
Ans:- (d) washing digested sludge

49.The survey carried out to fix the boundary of a building site is
(a) Engineering survey
(b) Topographic survey
(c) Cadastral survey
(d) EDM survey
Ans:-(c) Cadastral survey

50.Coincident draft in relation to water demand, is basedon:
(a) Peak hourly demand
(b) Maximum daily demand
(c) Maximum daily + fire demand
(d) Greater of (a) and (b)
Ans:- (c) Maximum daily + fire demand

51.The effective size of sand particles used in slow sandfilters is
(a) 0.25 to 0.35 mm (b) 0.45 to 0.70 mm
(c) 0.60 to 1.00 mm (d) 1.00 to 1.80 mm
Ans:- (a) 0.25 to 0.35 mm

52. For growing irrigated paddy, the ideal water application method is
(a) furrow irrigation
(b) check method
(c) border method of irrigation
(d) sprinkler irrigation
Ans:-(b) check method

53. Cohesion
(a) increases the active pressure and decreases the passive pressure
(b) decreases both the active and passive resistance
(c) increases both active pressure and passive resistance
(d) decreases active pressure and increases passive resistance
Ans:- (d) decreases active pressure and increases passive resistance

54. The average angle of wall friction 'δ' in terms of ϕ,according to Terzaghi, is
(a) $\delta = (2/3)\ \phi$ (b) $\delta = (3/2)\ \phi$
(c) $\delta = (1/3)\ \phi$ (d) $\delta = \phi$
Ans:- (a) $\delta = (2/3)\ \phi$

55. For standing crops in undulating sandy fields, the best method of irrigation, is
(a) sprinkler irrigation
(b) free flooding
(c) check method
(d) furrow method
Ans:- (a) sprinkler irrigation

56. A base failure is likely to occur when
(a) $\phi \geq 0° \ \& \ i < 53°$ (b) $\phi \geq 0° \ \& \ i > 53°$
(c) $\phi = 0° \ \& \ i < 53°$ (d) $\phi > 0° \ \& \ i < 53°$
Ans:- (c) $\phi = 0° \ \& \ i < 53°$

57.Canal drops are required to
(a) dissipate excess energy
(b) dissipate inadequate land slope
(c) dissipate excess land slope
(d) none of the above
Ans:- (c) dissipate excess land slope

58.Irrigation water having concentration of Na^{++}, Ca^{++} and Mg^{++} as 20, 3 and 1 milliequivalent per litre, respectively will be classified as
(a) Low sodium water
(b) Medium sodium water
(c) High sodium water

(d) Very high sodium water
Ans:-(b) Medium sodium water

59. A soil has a bulk density of 2.4 g/cc and water content of 20% the dry density of the sample is
(a) 1.25 g/cc (b) 1.5 g/cc
(c) 2 g/cc (d) 2.5 g/cc
Ans:- (c) 2 g/cc

60. In the case of silts, the following type of soil structure is exhibited
(a) single grained (b) honey combed
(c) flocculated (d) dispersed
Ans:- (b) honey combed

61. Diffuse double layer is present in the case of
(a) clay (b) silt (c) sand (d) all the above
Ans:- (a) clay

62.What type of canal fall, do you recommend for very high drops and very low discharges
(a) sardar type fall (b) siphon well drop
(c) glacis fall (d) inglis fall
Ans:- (b) siphon well drop

63. Coefficient of permeability measures flow of
(a) Free water (b) Capillary water
(c) Absorbed water (d) Contact water
Ans:- (a) Free water

64. A soil has a discharged velocity of 6×10^{-7} m/sand porosity of 0.5. Its seepage velocity is
(a) 18×10^{-7} m/s (b) 12×10^{-7} m/s
(c) 6×10^{-7} m/s (d) 3×10^{-7} m/s
Ans:- (b) 12×10^{-7} m/s

65. The slope of isochrones at any point at a given time indicates the rate of change of
(a) Effective stress with depth
(b) Effective stress with time
(c) Excess pore water pressure with time
(d) Excess pore water pressure with depth
Ans:- (d) Excess pore water pressure with depth

66. If coefficient of permeability is doubled and coefficient of volume compressibility is halved, the coefficient of consolidation.
(a) increases to 2 times
(b) decreases to 2 times
(c) decreases to 4 times
(d) increases to 4 times
Ans:- (d) increases to 4 times

67.“Economical height of a dam” is that height for which the
(a) cost per unit storage is minimum
(b) benefit-cost ratio is maximum
(c) net benefits are maximum
(d) none of the above

Ans:- (a) cost per unit storage is minimum

68.The maximum value of stability number is
(a) 0.465 (b) 0.261 (c) 0.542 (d) 1
Ans:- (b) 0.261

69. ϕ_u = 0 Analysis is suitable for
(a) all type of soils (b) dry clays
(c) saturated sands (d) saturated clays
Ans:- (d) saturated clays

70.Which one of the spillways is least suited for earthen dams
(a) ogee spillways
(b) side channel spillway
(c) chute spillway
(d) shaft spillway
Ans:- (a) ogee spillways

71.The method of slices of Swedish circle method is applicable in
(a) Homogeneous soils only
(b) Uniform slopes only
(c) Stratifies soils only
(d) Non-uniform slopes also
Ans:- (d) Non-uniform slopes also

72. Fellenius stability analysis by method of slices considers
(a) shear stress on the interface of slice
(b) normal stress on the interface of slice
(c) both a & b
(d) no interface forces between slices
Ans:- (d) no interface forces between slices

73. Water stored in a reservoir below the minimum pool level is called
(a) Valley storage (b) Bank storage
(c) Surcharge storage (d) Dead storage
Ans:- (d) Dead storage

74.A trapezoidal crest in a sarda type canal fall is preferred and used in compared to a rectangular crest, when
(a) $Q < 14$ cumec (b) $Q \geq 14$ cumec
(c) $Q < 30$ cumec (d) $Q \geq 30$ cumec
Ans:- (b) $Q \geq 14$ cumec

75. In passive case, the wall moves
(a) towards the backfill
(b) away from backfill
(c) no movement at all
(d) downwards
Ans:- (a) towards the backfill

76. The failure plane in the soil behind a verticalwall in the passive pressure case horizontal at

(a) 45° - $\phi/2$ (b) 45°- ϕ
(c) 45° + $\phi/2$ (d) 45° + ϕ
Ans:- (a) 45° - $\phi/2$

77. The lateral earth pressure coefficient of a soil, K_a for active state, K_p for passive state and K_o for at-rest condition, compare as
(a) $K_o < K_a < K_p$ (b) $K_a < K_o < K_p$
(c) $K_a < K_p < K_o$ (d) $K_p < K_o < K_a$
Ans:- (b) $K_a < K_o < K_p$

78. Taylor's stability number curves are used for the analysis of stability of slopes. The angle of shearing resistance used in the chart is the
(a) effective angle (b) apparent angle
(c) mobilized angle (d) weighted angle
Ans:- (c) mobilized angle

79. Taylor's stability number 'S_n' is
(a) $\frac{C}{F_c \gamma H}$ (b) $\frac{C}{\gamma H}$ (c) $\frac{CH}{F_c \gamma}$ (d) $\frac{C^2}{F_c \gamma H}$
Ans:- (a) $\frac{C}{F_c \gamma H}$

80. Taylor's stability charts are based on the total stresses using the
(a) friction circle method
(b) method of slices
(c) $\phi_u = 0$ analysis
(d) none of the above
Ans:- (a) friction circle method

81. The void ratio in soils is defined as the ratio of volume of
(a) voids to solids volume
(b) voids to soil volume
(c) solids to voids volume
(d) solids to total volume
Ans:- (a) voids to solids volume

82. Water content w in %
(a) $w < 0$ (b) $0 < w < 100$
(c) $0 \leq w \leq 100$ (d) $w \geq 0$
Ans:- (d) $w \geq 0$

83. For a soil in natural state, void ratio is 1, water content is 30% and G = 2.50, the degree of saturation.
(a) 0% (b) 150%
(c) 75% (d) 30%
Ans:- (c) 75%

84. Flocculated structure is formed by attraction ofparticles and the particles have the
(a) edge to face orientation
(b) edge to edge orientation
(c) face to face orientation
(d) parallel orientation
Ans:- (a) edge to face orientation

85. The flow index in soils indicates

(a) shear strength variation with water content
(b) variation of liquid limit
(c) rate of flow of water through the soil
(d) ratio of liquid limit to plastic limit
Ans:- (a) shear strength variation with water content

86. The shrinkage index is equal to
(a) liquid limit-plastic limit
(b) liquid limit-shrinkage limit
(c) plastic limit-liquid limit
(d) plastic limit-shrinkage limit
Ans:- (d) plastic limit-shrinkage limit

87. For a stable packing of regular spheres at the minimum density, the void ratio is
(a) 0.91 (b) 0.81 (c) 0.65 (d) 0.34
Ans:- (a) 0.91

Hints:- For density packing at maximum density, void ratio = 0.35.

88. China clay is an example for
(a) Kaolinite (b) Illite
(c) Montmorillonite (d) Halloysite
Ans:- (a) kaolinite

89. Stoke's law is applicable for spheres of diameter
(a) 0.002 to 0.0002 mm
(b) 0.2 to 0.0002 mm
(c) 0.02 to 0.0002 mm
(d) 2.00 to 0.02 mm
Ans:- (b) 0.2 to 0.0002 mm

90. The maximum water content at which a reduction in water content does not cause a decrease in volume of soil mass is known as
(a) liquid limit (b) plastic limit
(c) shrinkage limit (d) ductile limit
Ans:- (c) shrinkage limit

91. The laboratory classification of fine grained soils is based on
(a) Plasticity Index (b) Liquid limit
(c) Plasticity chart
(d) Sedimentation analysis
Ans:- (c) Plasticity chart

92. Boundary classification is to be resorted for coarse grained soils, when percentage fines is
(a) less than 5%
(b) lies between 5% and 12%
(c) greater than 12% (d) none
Ans:- (b) lies between 5% and 12%

93. According to IS classification system, the soils can be classified into
(a) 15 groups (b) 18 groups
(c) 3 groups (d) 7 groups
Ans:(b)

94. Sandy silty clay indicates
(a) Sand > Silt > clay
(b) Sand < Silt < clay

(c) Sand = Silt = Clay
(d) None
Ans:- (b) Sand < Silt < clay

95. In the plasticity chart, soil that falls above A-line and has having liquid of 40 is
(a) MI (b) CH (c) CL (d) CI
Ans:- (d) CI

96. The arrangement made in a canal network, which acts as its safety valve is
(a) canal module
(b) canal drop
(c) canal regulator
(d) canal escape
Ans:- (d) canal escape

97. The soil is said to be impermeability whencoefficient of permeability is
(a) $< 10^{-7}$ cm/sec (b) $<10^{-10}$ cm/sec
(c) $> 10^{-9}$ cm/sec (d) $<10^{-15}$ cm/sec
Ans:- (a) $< 10^{-7}$ cm/sec

98. In a compaction test, with increase in compactive effort
(a) maximum dry density increases but OMC decreases
(b) the compactive curve is shifted to the left and higher
(c) both the above
(d) both maximum dry density and OMC increases
Ans:- (c) both the above

99. Quick sand is occurring when its:
(a) Effective pressure = zero
(b) Effective pressure = atmospheric pressure
(c) Effective pressure = seepage pressure
(d) Effective pressure becomes = submerged weight of the soil
Ans:- (a) effective pressure is reduced to zero

100.Contact pressure for rigid footing in cohesive soil is
(a)Maximum at center & minimum at edge
(b)Maximum at edge & minimum at center
(c) Uniform
(d) Non uniform
Ans :- (b)

101. For a floating body if B = center of buoyancy, M = Metacentre and G = center of gravity, then to maintain stable equilibrium,
(a) BM >BG (b) BM < BG
(c) BM = BG (d) GM >BG
Ans:- (a) BM>BG

102. When the depth of immersion of a plane surfaceis increased, the centre of pressure will
(a) Come closer to the centroid
(b) Move farther away from centroid
(c) Be at the same distance from centroid
(d) Depend on the specific weight of the liquid
Ans: - (a) come closer to the centroid

103. For a submerged body G, B, and M represent thecentre of gravity, centre of buoyancy and themetacentre, respectively. The body will be unstable if
(a) G is located above B (b) B is located above M
(c) M is located above B (d) G is located above B
Ans: - (d) G is located above B

104. The wind orientation is made so that the landing and take-off are
(a) Against wind direction
(b) Along wind direction
(c) Perpendicular to wind direction
(d)None
Ans: - a

105. The strength of wind is measured bt
(a) Benfort scale
(b) Wind indicator
(c) Barometer
(d) None
Ans:-a

106. The average normal efficiency of BOD removal inimhoff tank is
(a) 95 % (b) 75 % (c) 60 % (d) 30 %
Ans: - (d) 30 %

107. Which one of the following surveys is employedfor collecting sufficient data in connection withsewage disposal and water supply works?
(a) Topographic survey
(b) Cadastral survey
(c) Geodetic survey
(d) Cross-sectioning & profile levelling
Ans: -(d) Cross-sectioning & profile levelling

108. Which of the following conditions requiresgeodetic surveying?
(a) Horizontal curve ranging
(b) Vertical curve ranging
(c) Survey of a country
(d) Reconnaissance survey
Ans: -(c) Survey of a country

109. The detention period adopted for grit chamber is of theorder of
(a) 1 minute (b) 5 minutes
(c) 2 – 4 min (d) 12 min
Ans: - (a) 1 minute

110. The detention period in a septic tank is of the order of
(a) 2 – 6 hours (b) 2 – 4 hours
(c) 12 – 36 hours (d) 4 – 8 hours
Ans:- (c) 12 – 36 hours

111.The type of needle used in prismatic compass is
(a) Edge bar type (b) Broad needle
(c) Blunt needle (d) Line needle
Ans:-(b) Broad needle

112. In primary settling tank, suspended solids are reducedfrom
(a) 10 to 20% (b) 20 to 40 %
(c) 40 to 70% (d) 70 to 90%

Ans:- (c) 40 to 70%

113.According to I.C.A.O. all markings on runways are painted
(a) White
(b) Yellow
(c) Green
(d) Red
Ans:-a

114. Cavitation is due to
(a) Low pressure
(b) High pressure
(c) Medium pressure
(d) Both a& b
Ans:-a

115.Under-reamed pile has minimum stem diameter of
(a) 250 mm
(b) 300 mm
(c) 350 mm
(d) 200 mm
Ans:-a

116. In a conventional ASP, MLSS is generally kept in which range
(a) <1000 mg/*l* (b) 1000-2000 mg/*l*
(c) 2000-3000 mg/*l* (d) 3000-5000 mg/*l*
Ans: - (a) <1000 mg/*l*

117. For normal sludge, the value of sludge index for Indianconditions is
(a) 0 to 50 (b) 50 to 150
(c) 150 to 350 (d) 350 to 500
Ans: - (b) 50 to 150

118. In triaxial test the height of soil sample is
(a) 2 *dia of sample
(b) 3*dia of sample
(c) 4*dia of sample
(d)5*dia of sample
Ans:-a

119. Minimum spacing of friction piles is
(a) 5*dia of piles
(b) 2*dia of piles
(c) 3*dia of piles
(d) 4*dia of piles
Ans:-c

120. Ringelmann's scale is used to
(a) Measure CO
(b) Measure SO_2
(c) Grade density of smoke
(d) Grade automobile exhaust gas
Ans:- (c) grade density of smoke

121. In non cohesive active case major principal stress is
(a) Horizontal
(b) Vertical
(c) Inclined
(d) All the above
Ans:-b

122. A gradient of +0.08 % is followed by a gradient of -0.07 %.If the permissible rate of change of grade is 0.003 per 30 m ,the length of transition curve is
(a) 150
(b) 120
(c) 160
(d) 140
Ans:-a

123. For night landing thresholds are lighted
(a) Blue
(b) Red
(c) Green
(d) Yellow
Ans:-c

124. Distribution layout in which a large number of scourvalves required is
(a) Dead end system (b) Grid iron system
(c) Radial System (d) Ring system
Ans: - (a) Dead end system

125. Cippoleti weir is a
(a) Rectangular weir
(b) Trapezoidal weir
(c) circular weir
(d) Triangular weir
Ans:-b

126. Sutro weir is known as
(a) Broad crested weir
(b) Ogee weir
(c) Sharp crested weir
(d) Proportional weir
Ans:-d

127. The pH of fresh sewage is usually
(a) Less than 7 (b) More than 7
(c) Equal to 7 (d) Equal to Zero
Ans: - (b) More than 7

128. The area of any irregular figure can be determined accurately with a
(a) Pantograph (b) Planimeter
(c) Cross staff (d) Graph papers
Ans: -(b) Planimeter

129. For small orifice
(a) Dia>>height
(b) Dia<<height
(c) Dia = height

(d) Dia <=height
Ans:-b

130. Contour lines of different elevation can unite to form one line, only in the case of
(a) A ridge (b) a valley
(c) A vertical cliff (d) an overhanging cliff
Ans: -(c) a vertical cliff

131. Cauchy's number is
(a) square of Mach's no
(b) Cube of Mach's no
(c) square of Euler's no
(d) Cube of Euler's no
Ans:-a

132. The first stage of natural process of sludge digestion is
(a) Hydrolysis
(b) Acid fermentation
(c) Alkaline fermentation
(d) Methane fermentation
Ans:- (b) Acid fermentation

133. If the declination is 5°40′ W, which one of the following magnetic bearing would represent the true bearing of S 25°20′ E?
(a) S 19°40′ E (b) S 31°0′ E
(c) S 20°0′ E (d) S 19°20′ E
Ans:-(a) S 19°40′ E

134. Weber's no is equal to
(a) Inertia force /Pressure force
(b) Inertia force/viscous force
(c)Inertia force /surface tension force
(d)Inertia force /elastic force
Ans:-c

135. MLT unit of kinematic viscosity
(a) $M^2 L^2 T^{-2}$
(b) $M^0 L^2 T^{-1}$
(c) $M^2L^1T^2$
(d) $M^0L^0 T^0$
Ans:-b

136. Pseudo plastic fluids are
(a) Shear thickening fluids
(b) Shear fluids
(c) Shear thinning fluids
(d)Newtonian fluids
Ans:-c

137.The percentage of chlorine in fresh bleaching powder is
(a) 10 to 15 (b) 20 to 25
(c) 30 to 35 (d) 40 to 50
Ans:- (c) 30 to 35

138. For algae control the chemical used is
(a) Calcium hydroxide (b) Sodium carbonate

(c) Copper Sulphate (d) Alum
Ans: - (c) copper Sulphate

139. Dilatent fluids increases with
(a) Increase in deformation rate
(b) Decreases with deformation rate
(c) Remains constant with deformation rate
(d) Uniform with deformation rate
Ans:-a

140. Mercury doesn't wet the glass due to
(a) Cohesion
(b) Adhesion
(c) Surface tension
(d) Capillarity
Ans:-c

141. The magnetic azimuth of one end of a runway is 80° measured clock wise from the magnetic north. The other end of the runway will be
(a) 160°(b) 240° (c) 260° (d) 80°
Ans:- (c) 260°

142. Capillarity is due to
(a) Surface tension
(b) Cohesion
(c) Adhesion
(d)Both a & c
Ans:-d

143. Viscosity of liquids increases with
(a) Increase in temp
(b) Decrease in temp
(c) Both a & b
(d) Remains constant with temp
Ans:-b

144. Dynamic viscosity of water is approximately equal to
(a) 55 *of air
(b) 40*of air
(c)15*of air
(d)10*of air
Ans:-a

145.The process of turning the telescope of aTheodolite in a horizontal plane is called
(a) Transiting (b) Plunging
(c) Swinging (d) Reversing
Ans:-(c) Swinging

146. Choose the correct relationship:
(a) Atmospheric pressure= Absolute pressure +gauge pressure
(b) Absolute pressure= Atmospheric pressure -gauge pressure
(c)Absolute pressure= Atmospheric pressure +vacuum pressure
(d)Absolute pressure= Atmospheric pressure + gauge pressure
Ans:-d

147. Total energy line and hydraulic gradient line differs by

(a) Pressure head
(b) Datum head
(c) Velocity head
(d) Both a & b
Ans:-c

148. In Reciprocal leveling the errors which is not completely eliminated is due to
(a) Earth's Curvature
(b) Non adjustment of line of collimation
(c) Refraction
(d) Non adjustment of bubble tube
Ans: -(c) Refraction

149. Minimum depth of ballast for Board Gauge trunk lines in Indian Railways is
(a) 15
(b) 10
(c) 20
(d)25
Ans:-d

150. The correct relationship between Theoretical OxygenDemand (TOD), Biochemical Oxygen Demand (BOD) andChemical Oxygen Demand (COD) is given by
(a) TOD > BOD > COD
(b) TOD > COD > BOD
(c) COD > BOD > TOD
(d) BOD > COD >TOD
Ans:- (b) TOD > COD > BOD

151. "Spire test" is used for adjustment of
(a) Plate levels (b) Line of sight
(c) Horizontal axis (d) Altitude bubble
Ans:-(c) Horizontal axis

152. A welded joint is generally
(a) Suspended
(b) Supported on sleepers
(c) Supported on metal plates
(d) None
Ans:-a

153. Distance between inner rail & check rail provided on sharp curve is
(a) 40
(b) 46
(c)44
(d)42
Ans:-c

154. Wing rails are provided
(a) Near tongue rail
(b)Crossings
(c) Near stock rails
(d)Near check rail
Ans:-b

155. With the help of Hellige turbid meter one can measureturbidity in the range of
(a) 0 to 50 ppm (b) 100 to 500 ppm

(c) 500 to 1000 ppm (d) 1000 to 2000 ppm
Ans:- (a) 0 to 50 ppm

156. The standard accuracy of tacheometric distance determination is
(a) 1:10 (b) 1:1000
(c) 1:500 (d) 1:10000
Ans: -(b) 1:1000

157. Piezometric head is the summation of
(a) Velocity head and elevation head
(b) Velocity head and pressure head
(c) Pressure head and elevation
(d) None of the above
Ans:- (c) Pressure head and elevation

158. The cross sectional areas of three sections of an embankment at an interval of 30 m are 30 m^2, 63 m^2 and 105 m^2.The volume usingprismoidal rule is (in m^3)
(a) 3870 (b) 3915
(c) 3960 (d) 4260
Ans:- (a) 3870

159.To prevent creep in rails the steel sleepers are fixed with rails by clips,bolts &
(a) 2 keys
(b) 1 keys
(c) 3 keys
(d)4 keys
Ans:-d

160. In Indian railways the ratio of axle load and weight of rail is
(a) 312
(b) 412
(c)512
(d)612
Ans:-c

161. The following are the consecutive readings were taken with a dumpy level 0.695; 1.525; 2.395; 0.635; 0.605; 0.805; 0.125; the instrument was shifted after third and fifth readings. The readings 2.395 and 0.635 respectively represent
(a) FS and BS (b) FS and IS
(c) BS and FS (d) IS and BS
Ans:-(a) FS and BS

162. The periodicity with which rapid sand filters needcleaning is usually
(a) 1 to 3 days (b) 10 to 15 days
(c) 1 to 3 months (d) 1 to 2 years
Ans:- (a) 1 to 3 days

163. Rapid sand filters remove bacteria to as much as
(a) 70 to 80 % (b) 80 to 90 %
(c) 90 to 95 % (d) 98 to 99 %
Ans:- (b) 80 to 90 %

164.The sensitiveness of a level tube decreases if
(a) Radius of curvature of its inner surface is increased
(b) Diameter of the tube is increased
(c) Length of the vapour bubble is increased

(d) Both viscosity and surface tension are increased
Ans:-(d) both viscosity and surface tension are increased

165. The percentage of filtered water which is used for backwashing in rapid sand filters is about
(a) 0.2 to 0.6% (b) 0.6 to 1%
(c) 2 to 5% (d) 6 to 8%
Ans:- (c) 2 to 5%

166. The minimum residual pressure for single storeybuildings is
(a) 5m (b) 7m (c) 10m (d) 15m
Ans:- (b) 7m

167. The valve used for controlling the flow is
(a) Sluice valve (b) Check valve
(c) Scour valve (d) Pressure relief valve
Ans:- (a) Sluice valve

168. The valve provided on the suction pipe in a tube well is
(a) Sluice valve (b) Air relief valve
(c) Pressure relief valve (d) Reflux valve
Ans:- (d) Reflux valve

169. In aerial photogrammetry, map details are plotted by
(a) Graphical method
(b) Mechanical method
(c) Stereo plotters
(d) All of the above
Ans:-(d) all of the above

170. Which of the following remote sensing systems employs only one detector?
(a) Scanning system (b) Framing system
(c) Both of the above (d) Spectral resolution
Ans:-(a) Scanning system

171. Stefan-Boltzman Law is
(a) M = σT^4 (b) M = σT^2
(c) λ_m = AT (d) λ_m = A/T
Ans:-(a) M = σT^4

172. The observation made over the same area on different dates to monitor ground features like crop growth is called
(a) Temporal resolution
(b) Radiometric resolution
(c) Spatial resolution
(d) Spectral resolution
Ans:- (a) Temporal resolution

173. Minor loss due to sudden contraction is due to
(a) Uniform flow contraction
(b) Expansion of flow after sudden contraction
(c) Boundary friction (d) Cavitation
Ans:- (b) Expansion of flow after sudden contraction

174. A surge tank is provided in hydro power schemes to
(a) Strengthen the penstocks
(b) Reduce water hammer pressure
(c) Reduce frictional losses in the system
(d) Increase the net head
Ans:-(b) reduce water hammer pressure

175. Ratio of maximum velocity to mean velocity ofviscous flow in between fixed parallel plates is
(a) 2/3 (b) 4/3 (c) 3/2 (d) 2
Ans:- (c) 3/2

176.Ratio of displacement thickness (δ^*) to the momentum thickness (θ) of an external flow boundary layer is called
(a) Shape factor (H) (b) Shape number (H)
(c) Energy factor (d) All of the above
Ans:- (a) Shape factor (H)

177. Boundary Layer separation occurs in
(a) Zero pressure gradient
(b) Negative pressure gradient
(c) Positive pressure gradient
(d) None of the above
Ans:- (c) positive pressure gradient

178. The normal altitude of GPS satellite is about
(a) 36,100 km (b) 24, 400 km
(c) 20, 200 km (d) 16, 200
Ans:- (c) 20, 200 km

179. The station which is selected close to the main triangulation station, to avoid intervening obstruction, is not known as
(a) Satellite station (b) eccentric station
(c) False station (d) pivot station
Ans: -(a) satellite station

180. An adjustable propeller turbine is called
(a) Pelton turbine (b)Banki turbine
(c) Kaplan turbine (d) Francis-Pelton turbine
Ans:- (c) Kaplan turbine

181.Mottling of teeth is associated with
(a) Chloride
(b) Fluoride
(c) Calcium
(d) Sulphur
Ans:-b

182.Path of particle in sedimentation tank is
(a) Straight
(b) Elliptical
(c) Parabolic

(d) circular
Ans:-c

183. Attracting groynes are built
(a) Perpendicular to bank
(b) Inclined downstream
(c) Inclined upstream
(d) None
Ans:-b

184.When a canal flowing under pressure is carried below a natural drain such that its FSL doesn't touch the underside of the supporting structure ,the structure provided is
(a) Syphon
(b) Aqueduct
(c) Syphon aqueduct
(d)Super passage
Ans:-d

185. The standard BOD at 20^0 C is taken as
(a) 1 day
(b) 6 days
(c)4 days
(d)5 days
Ans:-d

186. A dimensionless form of specific speed, known as shape number, for a hydraulic turbine may be written as

(a) $\frac{N\sqrt{P}}{H^{\frac{5}{4}}}$ (b) $\frac{N\sqrt{\frac{P}{\rho}}}{(gH)^{5/4}}$

(c) $\frac{N\sqrt{P/\rho g}}{H^{5/4}}$ (d) $\frac{N\sqrt{\frac{P}{\rho}}}{(\rho gH)^{5/4}}$

Ans:- (b) $\frac{N\sqrt{\frac{P}{\rho}}}{(gH)^{5/4}}$

187. The unit power P_u of a turbine developing a power P under a head H is
(a) $\frac{P}{\sqrt{H}}$ (b) $\frac{P}{H^{3/2}}$
(c) $\frac{P}{H^{5/2}}$ (d) $\frac{P}{H^{4/5}}$
Ans:- (b) $\frac{P}{H^{3/2}}$

188. A surge tank is provided to protect the
(a) Turbine runner (b) Spiral casing
(c) Draft tube (d) Penstock
Ans:- (d) penstock

189. Snow fall is generally measured in terms of
(a) Weight of snow per unit area
(b) Equivalent depth of water
(c) Depth of snow fallen
(d) Any of the above
Ans.: (b) Equivalent depth of water

190. The accurate method for calculating average rainfall of a catchment area is
(a) Arithmetic mean (b) Theissen polygon

(c) Isohyetal (d) Any of the above
Ans.: (c) isohyetal

191.In case of non-availability of space due to topography most suitable spillway
(a) Shaft
(b) Straight drop
(c) Chute
(d) Ogee
Ans:-a

192. Drifters are used to drill
(a) Up hole
(b) Down hole
(c) Horizontal or up hole
(d) Horizontal / up/ down hole
Ans:-d

193.Which of the following is a component of a shield for tunneling
(a) Liner plate
(b) Trench jack
(c) Stiffener
(d) Cutting edge
Ans:-d

194. In multiple point mooring system vessel is secured to a minimum of
(a) 2 points
(b) 3 points
(c) 4 points
(d) 6 points
Ans:-c

195. Which of the following is a fixed type mooring accessory
(a) Buoys
(b) Bollard
(c)Cables
(d) Anchors
Ans:-b

196. Unit of measurement of shutter of doors and windows
(a) m
(b) m^3
(c)m^4
(d)m^2
Ans:-d

197.The percentage levied for house rent fixation is kept at
(a) 5-10 % of total cost
(b) 10-15 % of total cost
(c)15-20 %of total cost
(d)1-5 % of total cost
Ans:-a

198. Finite slope failure is due to
(a) Translational failure
(b) Rotational Failure
(c) Both a & b

(d) None
Ans:-b

199. Floating piles are also called
(a) End bearing piles
(b) Compaction piles
(c) Friction piles
(d) Batter piles
Ans:-c

200. In SPT test the number of blows is measured at a penetrationdepth of
(a) 150 mm
(b) 200 mm
(c) 300 mm
(d) 400 mm
Ans:-c