Question Bank for JE (Works)

1. The horizontal tunnels constructed at shallow depths along the banks of a river to intercept the ground water table are called
   a) Canals   b) Infilteration galleries   c) springs   d) Lakes

2. A pipe sunk into the ground to top the underground water is called
   a) Open well b) tube well c) artisian well d) infilteration well.

3. The water bearing strata i.e. layers of sand gravel etc is called
   a) An acquifer b)an aquiclude c) an acquifuge d) zone of saturation

4. Runoff is the water which flows
   a) In infilteration galleries
   b) In sever pipes
   c) Due to leakage of pipes
   d) In rivers

5. The yield of a underground source may be obtained by
   a) Pumping test
   b) Recupating test
   c) Both a and b
   d) None of these

6. The amount of water collected in a reservoir is divided into three portions and their order of existence from bottom to the top is
   a) Useful storage, surcharge storage, dead storage
   b) Useful storage, dead storage, surcharge storage
   c) Dead storage, useful storage, surcharge storage
   d) None of the above.

7. In India as per Indian standards, water consumption per capita per day for domestic purpose is
   a) 85 lit b) 100 lit c) 115 lit d) 135 lit

8. Which of the following formula is used for computing the quantity of water for fire demand
   a) Freeman's formula
   b) Kuichling formula
   c) Buston's formula
   d) All of these.

9. The design period for a water supply project is taken as
   a) 5 to 10 years
   b) 10 to 15 years
   c) 15 to 20 years
   d) 20 to 30 years

10. For large cities, the suitable method for forecasting population is
    a) Arithmetical increase method
    b) Graplurd method

    c) Geometrical increase method

    d) Comparative method.

11. The presence of bacteria in water causes
    a) Hardness b) Alkalinity c) Diseases d) Bad taste.

12. The finely divided dispersion of solid particles which are not visible to the naked eye and cannot be removed by ordinary filters are known as
    a) Suspended impurities
    b) Dissolved impurities
    c) Collidal impurities
    d) None of these.

13. The presence of sodium chloride in water
    a) Causes bad taste
    b) Softens the water
    c) Increase hardness of water
    d) Stops epidemic

14. Turbidity of water is expressed in terms of
    a) Silica scale
    b) Platinum cobalt scale
    c) Ph value
    d) None of these

15. The maximum permissible chloride content in water for domestic supplies should not exceed
    a) 250 ppm b) 350 ppm c) 450 ppm d) 550 ppm

16. The maximum permissible chloride content for public supplies should be between
    a) 0.1 to 0.2 ppm
    b) 0.3 to 0.4 ppm
    c) 1.2 to 4 ppm
    d) 6.5 to 8 ppm

17. The bacteria which require oxygen for their survival is known as
    a) Anaerobic bacteria
    b) Pathogenic bacteria
    c) Aerobic bacteria
    d) Non pathogenic bacteria

18. Bio chemical oxygen demand (BOD) of safe drinking water must be
    a) 0 b) 10 c) 50 d) 100

19. In plain sedimentation tank, under normal conditions, impurities are removed upto
    a) 50% b) 60% c) 70% d0 80%

20. The most common coagulant is
    a) Magnesium sulphate b) alum c) chlorine d) bleaching powder

21. Slow sand filter is efficient to remove the bacteria from the raw water to an extent of   a) 50%   b) 70%   c) 85%   d) 99%

22. The yield of a rapid sand filter is ---------------- to that of slow sand filter   a) 10 times   b) 15 times   c) 20 times d) 30 times

23. The apparatus used for feeding chlorine into water is called
    a) Chlorine tank
    b) Aeration foundation
    c) Chlorinator
    d) None of these.

24. When the chlorine is added beyond the break point, the process of treating the water is known as
    a) Plain chlorination
    b) Post chlorination
    c) Dechlorination
    d) Super chlorination

25. The percentage of chlorine in fresh bleaching powder is
    a) 20 to 25%   b) 25 to 30%   c) 30 to 35%   d) 35 to 40%

26. The minimum size of a fire hydrant is
    a) 5 cm   b) 10 cm   c) 15cm   d) 20 cm

27. The valve which allows the water to flow in one direction but prevents its flow in the reverse direction is known as
    a) Sluice valve
    b) Reflux valve
    c) Air relief valve
    d) Pressure relief valve

28. For the sewers of diameter less than 600 m the type of joint prepared is
    a) spigot and socket joint
    b) collar joint
    c) bandage joint
    d) mechanical joint

29. The minimum dia of a manhole cover should be
    a) 25cm   b) 50cm   c) 75cm   d) 100cm

30. The minimum dissolved oxygen required in water to save the acquatic life is a) 1 ppm   b) 2 ppm   c) 4 ppm   d) 8 ppm

31. In preliminary treatment of sewage, the operation which takes place, is
    a) Removal of fine suspended particles
    b) Removal of fine dissolved organic matter
    c) Removal of lighter floating material
    d) Removal of harmful bacterias and other organisms

32. The sewage is treated by aerobic bacteria action in
    a) settling tank   b) trickling filter   c) oxidation pond d) all of these

33. A drop manhole is provided if

a) A sewer drop from a height
b) A branch sewer discharges into a main sewer at a higher level
c) Both a and b
d) None of these

34. A pipe used to carry discharge from sanitary fittings like bathrooms, kitchens etc is called
   a) waste pipe
   b) soil pipe
   c) vent pipe
   d) Anti siphonage pipe

35. For large sewers, the maximum distance between manholes should be   a) 75m   b) 150m   c) 200m   d) 300m

36. The fundamental principle of surveying is to work from the
   a) Whole to the part
   b) Part to the whole
   c) Lower level to higher level
   d) Higher level to lower level

37. The representative fraction 1/2500 means that the scale is
   a) 1 cm = 0.25 m
   b) 1 cm = 2.5 m
   c) 1 cm = 25 m
   d) 1 cm = 250 m

38. The instrument attached to the wheel of a vehicle in order to measure the distance travelled is called
   a) Passometer
   b) Pedometer
   c) Odometer
   d) speedometer

39. The error in measured length due to sag in chain or tape is known as
   a) Positive error
   b) Negative error
   c) Compensating error
   d) Instrumental error

40. A line joining the apex of a triangle to some fixed point on the opposite side is called a
   a) Check line
   b) Tie line
   c) Base line
   d) None of these

41. The optical square is used to measure angles by
   a) Refraction
   b) Reflection
   c) Double refraction
   d) Double reflection

42. In a quadrantal system, the bearing of a line is measured
    a) Always clockwise from the south point of the reference meridian towards the line right round the circle.
    b) Clockwise or anticlockwise from the east or west which ever is nearer the line towards north or south.
    c) Clockwise or anticlockwise from the north or south which ever is nearer the line towards east or west.
    d) None of the above.

43. In a whole circle bearing system, S25°15' E corresponds to
    a) 115° 15'
    b) 154° 15'
    c) 205° 15'
    d) 334° 45'

44. When the whole circle bearing of two lines AB and AC are 115° and 41° respectively then the included angle BAC will be
    a) 41°
    b) 74°
    c) 115°
    d) 156°

45. The horizontal angle between the true meridian and magnetic meridian is known as
    a) True bearing
    b) Dip
    c) Local attraction
    d) Magnetic declination

46. The theodolite is an instrument used for measuring very accurately
    a) Horizontal angles only
    b) Vertical angles only
    c) Horizontal and vertical angles
    d) Linear measurements

47. An imaginary line joining the point of interaction of the cross hairs of the diaphragm and the optical centre of the object glass is known as
    a) Fundamental line
    b) Axis of telescope
    c) Axis of level tube
    d) Line of collimation

48. An axis about which the telescope can be rotated in a horizontal plane is called
    a) Horizontal axis
    b) Vertical axis
    c) Axis of the level tube
    d) Line of collimation

49. In order to measure a horizontal angle more accurately than a vernier, a
    a) Method of repetition is used
    b) Method of reiteration is used
    c) Method of deflection angles is used

d) Method of double observation is used

50. The capacity of a telescope of producing a sharp image is called its
    a) Definition
    b) Brightness
    c) Sensitivity
    d) Magnification

51. A deflection angle in a traverse is equal to the
    a) Difference between the included angle and 180°
    b) Difference between 360 degree and the included angle
    c) Sum of the included angle and 180°
    d) None of the above

52. An angle between the inclined line of sight and the horizontal is called
    a) Direct angle
    b) Vertical angle
    c) Horizontal angle
    d) Deflection angle

53. The latitude and departure of a transverse line are both positive when the whole circle bearing of the line lies in the
    a) First quadrant
    b) Second quadrant
    c) Third quadrant
    d) Fourth quadrant

54. A method of surveying used for determining the relative height of points on the surface of the earth is called
    a) Levelling
    b) Simple levelling
    c) Longitudinal levelling
    d) Differential levelling

55. The vertical distance above or below the datum is called
    a) Reduced level of the point
    b) Elevation of the point
    c) Height of the instrument
    d) Either a or b

56. A fixed point of reference of known elevation is called
    a) Charge point
    b) Station point
    c) Bench mark
    d) datum

57. A staff reading taken on a bench mark or a point of known elevation is called
    a) Fore sight reading
    b) Back sight reading
    c) Intermediate sight
    d) None of these

58. To find the true difference of level between two points, the level should be kept
    a) At either of the points
    b) Exactly midway between the two points
    c) At any point on the line joining the two points
    d) None of the above.

59. The rise and fall method for obtaining the reduced levels of points provides a check on
   a) Fore sights only
   b) Back sights only
   c) Intermediate sights only
   d) All of these.

60. A vertical distance between any two consecutive contours is called
   a) Vertical equivalent
   b) Horizontal equivalent
   c) Contour interval
   d) Contour gradient

61. The method of surveying in which field work and plotting work are done simultaneously is called
   a) Compass surveying
   b) Levelling
   c) Plane tabling
   d) Chain surveying

62. A branch of surveying in which the horizontal and vertical distances of points are obtained by instrumental observations is known as
   a) Chain surveying
   b) Plane table surveying
   c) Tacheometric surveying
   d) Hydrographic surveying

63. The rocked formed due to solidification of molten mass laying below or above the earth surface are called
   a) Aqueous rock
   b) Sedimentary rock
   c) Metamorphic rock
   d) Igneous rock

64. A good building stone is one which does not absorb more than ---------- of its weight of water after one day's immersion.
   a) 5%   b) 10%   c) 15%   d) 25%

65. The specific gravity of sand stone is
   a) 1.1 to 1.80 b) 1.80 to 2.65   c) 2.65 to 2.95 d) 2.95 to 3.40

66. A first class brick should not absorb water more than --------- of its own dry weight after 24 hrs immersion in cold water.
   a) 10%   b) 15%   c) 20%   d) 25%

67. The bricks should be burnt at temperature from
   a) 300°C to 500°C
   b) 500° C to 700° C
   c) 700° C to 1000° C
   d) 1000° C to 1200° C

68. For one cubic meter of brick masonary the number of bricks required are
   a) 400   b) 450 c) 500 d) 550

69. Gypsum is added in the manufacture of Portland cement in order to
   a) Shorter the setting time of cement
   b) Lengthen the setting time of cement
   c) Decrease the burning temperature
   d) Decrease the grinding time

70. A compound responsible for the initial setting of cement is
   a) Tri calcium aluminate
   b) Zetra-calcium alumino ferrite
   c) Both a and b
   d) None of these

71. The percentage of the slag component of Portland slag cement from
   a) 10 to 40%
   b) 40 to 70%
   c) 70 to 80%
   d) 80 to 90%

72. Vicat's apparatus is used to determine the
   a) Initial setting time of cement
   b) Final setting time of cement
   c) Normal consistency of cement
   d) All of these

73. The initial setting time of rapid hardening cement should not be less than
   a) 30 min   b) 1 hour   c) 4 hours   d) 8 hours

74. The final setting time of ordinary cement should not be more than
   a) 2 hours   b) 4 hours   c) 8 hours   d) 10 hours

75. The expansion in Portland cement can be tested by
   a) Fineness test
   b) Soundness test
   c) Setting time test
   d) Normal consistency test

76. Le-chatelier method is used to determine
   a) Initial setting of cement
   b) Fineness of cement
   c) Soundness of cement
   d) Normal consistency of cement

77. The normal consistency of Portland cement is about
   a) 10%   b) 15%   c) 20%   d) 25%

78. For RCC construction, the maximum size of coarse aggregates is limited to
   a) 10mm   b) 15mm   c) 20mm   d) 25mm

79. According to Indian standard specifications, the full strength of concrete is achieved after
a) 7 days   b) 14 days   c) 21 days   d) 28 days

80. The liquid part of the paint is called
a) Pigment   b) vehicle   c) solvent   d) drier

81. Linseed acid in paint is used as a
a) Base   b) thinner   c) carrier   d) pigment

82. The commonly used cement in cement paint is
a) White cement
b) Portland cement
c) Alumina cement
d) Rapid hardening cement

83. Distemper is used on
a) Brick walls
b) Concrete surfaces
c) Plastered surfaces exposed to weather
d) Plastered surfaces not exposed to weather

84. The rail gauge is the distance between
a) Outer faces of rails
b) Running faces of rails
c) Centre to centre of rails
d) None of these

85. No sleeper is placed just below the rail joint as it will cause
a) More impact
b) Discomfort to passengers
c) Either a or b
d) Both a and b

86. The coning of wheel is made to prevent the
a) Lateral movement of the axle
b) Lateral movement of the wheels
c) Damage of the inside edges of rails
d) All of these

87. Creep is the ----------- movement of rail
a) Longitudinal
b) Lateral
c) Vertical
d) All of the above

88. When a train passes on curves which have no super elevation, it will give thrust on the
a) Inner rail

b) Outer rail
c) Inner side of inner rail
d) Inner side of outer rail

89. A rail seat is given a slope of
a) 1 in 10   b) 1 in 20   c) 1 in 30   d) 1 in 40

90. The number of sleepers used per rail length on track is known as
a) Sleeper strength
b) Sleeper density
c) Sleeper ratio
d) All of these

91. The boxing of ballast is done to prevent
a) Lateral movement of sleepers
b) Longitudinal movement of sleepers
c) Both lateral and longitudinal movement of sleepers
d) None of the above

92. For new embankments in block cotton soil, the material used as blanket is
a) Sand
b) Moorum
c) Coal ash
d) Broken stone

93. The maximum gradient in which a railway track may be laid in a particular section is known as
a) Pusher gradient
b) Ruling gradient
c) Momentum gradient
d) All of these

94. The relation between the radius of curve (R) and its degree of curvature (D) is seen by
a) R = 1245/D
b) R = 1546.8/D
c) R = 1746.5/D
d) R= 1835.6/D

95. If V is speed of train, G is gauge, R is radius of curve and g is acceleration due to gravity, the superelevation (s) to be provided on rails is determined by
a) $S=VG/gR$
b) $S=V^2G/gR$
c) $S=V^3G/gR$
d) $S=V^4G/gR$

96. When a main line is on a curve and has a turn out of contrary flexure leading to a branch line, then the branch line curve has a
a) Cant deficiency
b) Negative cant
c) Cant excess
d) None of these

97. When two tracks of same or different gauges cross each other at any angle the crossing provided is
   a) Diamond crossing
   b) Scissor's crossing
   c) Level crossing
   d) All of these

98. The platform should be provided ----------- away from the centre line of the track for broad gauge
   a) 1.219 m
   b) 1.346 m
   c) 1.676 m
   d) 1.854 m

99. The rail section is designated by its
   a) Total length
   b) Total weight
   c) Cross sectional area
   d) Weight per meter length

100. The soil transported by running water is called
   a) Aeolian soil
   b) Marine soil
   c) Alluvial soild
   d) Lacustrine soil

101. Cohesion less soils are
   a) sands
   b) clays
   c) silts
   d) silts and clays

102. Consolidation and compressibility of soil
   a) Is a measure of the ability of soil to allow the water to pass through its pores
   b) Is a measure of the ability of soil to bear stresses without failure
   c) Deals with changes in volume of pores in a soil under load
   d) Any one of the above

103. The ratio of the volume of voids to the total volume of soil mars is called
   a) Water cement ratio
   b) Porosity
   c) Void ratio
   d) Degree of saturation

104. The ratio of the unit weight of soil solids to that of water is called
   a) Void ratio
   b) Porosity
   c) Specific gravity
   d) Degree of saturation

105. The relation between porosity (n) and void ratio (e) is given by
   a) n = 1+e/e   b) n = e/1+e   c) e = n/1-n   d) e = 1-n/n

106. The degree of saturation for fully saturated soil is
   a) 0.25   b) 0.50   c) 0.75   d) 1

107. The ratio of the volume of air voids to the volume of voids is called
   a) Void ratio
   b) Air content
   c) Degree of saturation
   d) Porosity

108. The specific gravity of a soil is the ratio of unit weight of soil solids to that of water at a temperature
   a) 4° C   b) 17° C   c) 27° C   d) 36° C

109. The void ratio of a soil is defined as the ratio of the
   a) Weight of water to the weight of solids
   b) Volume of water to the volume of voids in the soil mars
   c) Total volume of voids to the volume of soil solids
   d) Total volume of voids to the total volume of soil

110. The approximate void ratio in sandy soil is
   a) 0.20   b) 0.60   c) 0.80   d) 1.20

111. According to Indian standards in a 2mm sieve
   a) There are two holes
   b) Each sieve is circular and its diameter is 2 mm
   c) Each hole is square and its side is 2 mm
   d) There are two holes per cm length of the mesh

112. Sieving is not practicable for grain sizes smaller than about
   a) 0.075 mm   b) 0.095 mm   c) 0.15 mm   d) 0.2 mm

113. The water content of soils can be accurately determined by
   a) Sand bath method
   b) Calcium carbide method
   c) Over drying method
   d) Pycnometer meter

114. The effective size of a soil is
   a) D10 b) D20   c) D40 d) D60

115. The particle size range is measured by
   a) Effective size   b) Curvative coefficient   c) Uniformity coefficient   d) None of these

116. The maximum water content of a saturated soil at which a reduction in its moisture does not cause a decrease in volume of the soil is called
   a) Liquid limit
   b) Plastic limit

c) Elastic limit
d) Shrinkage limit

117. The shrinkage index is equal to
    a) Liquid limit + plastic limit
    b) Plastic limit – liquid limit
    c) Liquid limit – shrinkage limit
    d) Shrinkage limit – liquid limit

118. The moisture contents of a clayey soil is gradually decreased from a large value. The correct sequence of the occurrence of the limits will be
    a) Liquid limit, plastic limit & shrinkage limit
    b) Plastic limit, liquid limit & shrinkage limit
    c) Shrinkage limit, plastic limit & liquid limit
    d) Plastic limit, shrinkage limit & liquid limit

119. Which of the following is highly permeable?
    a) Gravel   b) Sand mixture   c) Coarse sand   d) Clay

120. The property of soil mass which permits the seepage of water through its interconnecting voids is called
    a) Capillarity
    b) Permeability
    c) Porosity
    d) None of these

121. The permeability of a given soil is
    a) Directly proportional to the average grain size
    b) Inversely proportional to the average grain size
    c) Directly proportional to the square of the average grain size
    d) Inversely proportion to the square of the average grain size

122. The quantity of seepage of water in a soil medium is
    a) Directly proportional to the head of water at upstream
    b) Inversely proportional to the head of water at upstream
    c) Directly proportional to the coefficient of permeability
    d) Inversely proportional to the coefficient of permeability

123. Quick sand is a
    a) Moist sand containing small particles
    b) Condition which occurs in coarse sand
    c) Condition in which a cohesionless soil looses all its strength because of upward flow of water
    d) None of the above

124. Flow lines and equipotential lines are
    a) Perpendicular to each other
    b) Parallel to each other
    c) Intersecting lines at 90 degree to each other
    d) Intersecting lines at 45 degree to each other

125. The exit gradient of the seepage of water through a soil medium is the
    a) Slope of the flow line

b) Slope of equipotential line
c) Ratio of total head to the length of seepage
d) Ratio of head loss to the length of seepage

126. The critical gradient of seepage
    a) Directly proportional to void ratio
    b) Increases with the decrease in void ratio
    c) Inversely proportional to specific gravity
    d) Increases with the decrease in specific gravity of force

127. The effective stress on the soil is due to the
    a) External load acting on the soil
    b) Weight of soil particles
    c) Weight of water present in soil particles
    d) Both a and b

128. The neutral stress is
    a) Transmitted through the points of contact of the inter connected particles of soil
    b) Transmitted to the soil base through the pore water
    c) Independent of the depth of water above the soil mars
    d) Due to weight of soil particles.

129. The foundation in a building is provided to
    a) Distribute the load over a large area
    b) Increase overall stability of the structure
    c) Transmit load to the bearing surface (sub soil) at uniform rate
    d) All the above.

130. A foundation consisting of thick reinforced concrete slab covering the entire area of the bottom of the structure is known as
    a) Pile foundation
    b) Pier foundation
    c) Raft foundation
    d) Machine foundation

131. The type of foundation most suitable for bridges is
    a) Pier foundation
    b) Raft foundation
    c) Pile foundation
    d) Strap foundation

132. Precast concrete piles are usually
    a) Reinforced concrete only
    b) Plain or reinforced concrete
    c) Reinforced concrete or prestressed concrete
    d) Plain, reinforced concrete or prestressed concrete

133. In case of buildings without basement, the last position of damp proof course (DPC) lies at
    a) Plinth level
    b) Ground level
    c) 150mm above plinth level
    d) 150mm above ground level

134. A temporary rigid structure having platforms raised up as the building increases in height is called
   a) Underpinning
   b) Scaffolding
   c) Shoring
   d) Jacking

135. A brick which is cut in such a way that the width of its one end is half that of a full brick is called
   a) King closer
   b) Mitred closer
   c) Bevelled closer
   d) Queen closer

136. A type of bond in a brick masonry in which each course consist of alternate headers and stretchers is called
   a) English bond
   b) Flemish bond
   c) Stretching bond
   d) Heading bond

137. The most commonly used bond for all wall thickness is
   a) English bond
   b) Flemish bond
   c) Stretching bond
   d) Heading bond

138. A fine aggregate is one whose particles are of size
   a) 4.75 mm
   b) Below 4.75 mm
   c) 6.75 mm
   d) Above 6.75 mm

139. The phenomenon by virtue of which the cement does not undergo large change in volume when treated with water is known as
   a) Fineness
   b) Soundness
   c) Setting time
   d) None of these

140. Which of the following cements is expected to have the highest compressive strength after 03 day
   a) Ordinary Portland cement
   b) Rapid hardening cement
   c) High alumina cement
   d) Sulphate resisting cement

141. The percentage of water required for making a cement paste of normal consistency varies from
   a) 15 to 25%
   b) 25 to 35%
   c) 35 to 50%
   d) 50 to 60%

142. Initial setting time of Ordinary Portland Cement is
   a) 15 min
   b) 30 min
   c) 60 min
   d) 10 h

143. The aggregate which pass through 75mm IS sieve and entirely retain on 4.75mm IS sieve is known as
  a) Fine aggregates
  b) Coarse aggregates
  c) All in aggregates
  d) Cyclopean aggregates
144. The ratio of the volume of moist sand to the volume of dry sand is known as
  a) Crushing value
  b) Impact value
  c) Bulking factor
  d) None of these.
145. The development of first 28 days strength is on account of the hydration of
  a) Dicalcium silicate
  b) Tricalcium silicate
  c) Tricalcium aluminate
  d) Tera calcium alumino ferrite
146. The workability of cement is expressed by
  a) Water cement ratio
  b) Slump value
  c) Compaction factor
  d) Both a and b
147. For high degree of workability the slump value should vary between
  a) 0 to 25mm
  b) 25 to 50mm
  c) 50 to 80mm
  d) 80 to 100mm
148. The concrete mix of grade M25 means that the compressive strength of 15cm cubes at 28 days after mixing is
  a) 15 N/mm²
  b) 20 N/mm²
  c) 25 N/mm²
  d) 30 N/mm^2
149. If the proportions of different ingredients (cement, sand and aggregates) are in the ratio of 1:2:4 then the grade of concrete is
  a) M10
  b) M15
  c) M20
  d) M25
150. After the curing of 28 days, the concrete gains strength upto
  a) 40%
  b) 67%
  c) 100%
  d) 122%
151. In singly reinforced beams, steel reinforcement is provided in
  a) Tensile zone
  b) Compressive zone
  c) Both tensile and compressive zone
  d) Neutral zone
152. In singly reinforced beam, the effective depth is measured from the compression edge to the
  a) Tensile edge

b) Centre of tensile reinforcement
c) Neutral axis of the beam
d) None of these.

153. The maximum spacing of vertical reinforcement in RCC wall should not exceed......... the thickness of wall
a) Equal to
b) 1.5 times
c) 2 times
d) 3 times

154. The torsion resisting capacity of a given reinforced concrete section
a) Decreases with decrease in stirrup spacing
b) Decreases with increase in longitudinal bars.
c) Does not depend upon stirrup and longitudinal steels
d) Increases with increase in stirrup and longitudinal steels

155. A stirrup consists of .... diameter mild steel bars level around the tensile reinforcement
a) 1 to 5 mm
b) 5 to 12 mm
c) 12 to 18 mm
d) 18 to 30 mm

156. When the steel bars are embedded in concrete the concrete after setting, adheres to the surface of the bars and thus resist any force that tends to pull or push this rod. The intensity of this adhesive force is called
a) Bond stress
b) Tensile stress
c) Compressive stress
d) None of these.

157. The concrete below neutral axis
a) Resist the bending moment
b) Embeds the tensile steel
c) Both a and b
d) None of these

158. The section of the beam having greater width at top in comparison to the width below neutral axis is known as
a) Critical section
b) T section
c) L section
d) None of these

159. The portion of the slab which acts monolithically with the beam and which resists the compressive stresses is called...................... of flange of the T beam
a) Breadth
b) Thickness
c) Depth
d) None of the above.

160. The effective depth of a T beam is the distance between the
a) Centre of the flange and the top of the tensile reinforcement.
b) Top of the flange and the centre of the tensile reinforcement.

c) Bottom of the flange and the centre of the tensile reinforcement.

d) Centre of flange and the bottom of the tensile reinforcement.

161. When a vertical member is carrying mainly axial loads, it is turned as

a) Street

b) Column

c) Tile

d) All of these.

162. The diameter of bars for main reinforcement in slabs may vary from

a) 2 to 4 mm

b) 4 to 8 mm

c) 8 to 14 mm

d) 14 to 18 mm

163. If plain bars are used, the area of distribution reinforcement in slabs should not be less than

a) 0.12% of the gross area of concrete

b) 0.15% of the gross area of concrete

c) 0.18% of the gross area of concrete

d) 0.21% of the gross area of concrete

164. A reinforced slab, built monolithically with the supporting columns and is reinforced in two or more directions without any provision of beams is called a

a) Two way slab

b) Flat slab

c) Continuous slab

d) Circular slab

165. According to Terzaghi a foundation is said to be shallow if its depth is

a) Equal to its width

b) Less than its width

c) Greater than its width

d) Either a or b

166. The ultimate strength of the steel used for prestressing is nearly

a) 250 N/m^2

b) 415 N/m^2

c) 500 N/m^2

d) 1500 N/m^2

167. The cable for a prestressed concrete simply supported beam subjected to uniformly distributed load over the entire span should ideally be

a) Placed at the centre of cross section over the entire span

b) Placed at some eccentricity over the entire span

c) Varrying linearly from the centre of cross section at the ends to maximum eccentricity at the middle section

d) Parabolic with zero eccentricity at the ends and maximum eccentricity at the centre.

168. The major loss of prestress is caused due to

a) Creep of concrete

b) Relaxation of steel

c) Shrinkage of concrete

d) All of these

169. For prestressed structural elements, high strength concrete is used primarily because

a) Both shrinkage and creep are more
b) Shrinkage is less but creep is more
c) Modulus of elasticity and creep value are higher.
d) High modulus of elasticity and low creep.

170. The magnitude of loss of prestress due to relaxation of steel should be taken to vary from................. of the average initial stress.
a) 0.562%
b) 2 to 8%
c) 8 to 10%
d) 10 to 12%

171. The ratio of linear stress to the linear strain is called
a) Modulus of rigidity.
b) Modulus of elasticity
c) Bulk modulus
d) Poisson's ratio

172. When a body is subjected to two equal and opposite forces, acting tangentially across the resisting section, as a result of which the body tends to shear off across the section, the stress and strain induced is
a) Tensile stress, tensile strain
b) Compressive stress compressive strain
c) Shear stress, tensile strain
d) Shear stress, shear strain

173. The ratio of lateral strain to linear strain is called
a) Modular of elasticity
b) Modulus of rigidity
c) Bulk modulus
d) Poisson's ratio

174. The ratio of change in volume to the original volume is called
a) Linear strain
b) Lateral strain
c) Volumetric strain
d) Poisson's ratio

175. Strain energy is the
a) Energy stored in a body where strained within elastic limits.
b) Energy stored in a body where strained upto breaking of a specimen.
c) Maximum strain energy which can be stored in a body.
d) Proof resilience per unit volume of a material.

176. The stress induced in a body, when suddenly loaded is .... the stress induced when the some load is applied gradually
a) Equal to
b) One half
c) Twice
d) Four times

177. The capacity of a strained body for doing work on the removal of the straining force is called
a) Strain energy
b) Resilience
c) Proof resilience
d) Impact energy

178. When a load on the free end of a cantilever beam is increased, failure will occur
   a) At the free end
   b) At the fixed end
   c) In the middle of the beam
   d) At a distance 2l/3 from the free end.

179. The shear force of a cantilever beam for load w at free end is
   a) Zero at free end and W at the fixed end
   b) W at free end and zero at fixed end
   c) W throughout its length
   d) Wl throughout its length

180. When there is a sudden increase of decrease in shear force diagram between any two points it indicates that there is any two points it indicates that there is a
   a) Point load at the two points
   b) No loading between the two points
   c) Uniformly distributed load between the two points.
   d) Uniformly varying load

181. The point of contraflexure is a point where
   a) Shear force changes sign
   b) Bending moment changes sign
   c) Shear force is maximum
   d) Bending moment is maximum

182. The bending moment at a section tends to bend or deflect the beam and the interval stresses resists its bending. The resistance offered by the internal stresses, to the bending is called
   a) Compressive stress
   b) Shear stress
   c) Bending stress
   d) Elastic modulus

183. In a simple bending theory, one of the assumptions is that the plane sections before bending remain plane after bending. This assumptions means
   a) Stress is uniform throughout the bean
   b) Strain is uniform throughout the beam
   c) Stress is proportional to the distance from the neutral axis.
   d) Strain is proportional to the distance from the neutral axis.

184. The neutral axis of the cross section of a beam is that axis at which the bending stress is
   a) Zero
   b) Minimum
   c) Maximum
   d) Infinity

185. When a cantilever beam is loaded at free end, the maximum compressive stress shall develop at
   a) Bottom fibre
   b) Top fibre

c) Neutral axis
d) Centre of gravity

186. In a beam subjected to pure bending the intensity of stress in any fibre is .... the distance of the fibre from the neutral axis.
a) Equal to
b) Less than
c) More than
d) Directly proportional to

187. When a shaft is subjected to a twisting moment, every cross section of the shaft will be under
a) Tensile stress
b) Compressive stress
c) Shear stress
d) Bending stress

188. When a shaft is subjected to torsion the shear stress induced in the shaft varies from
a) Minimum at the centre to maximum at the circumference
b) Maximum at the centre to minimum at the circumference
c) Zero at the centre to the maximum at the circumference
d) Maximum at the centre to zero at the circumference

189. The strength of riveted joint is equal to the
a) Pull required to tear off the plate per pitch length (Pt)
b) Pull required to shear off the rivet per pitch length (Ps)
c) Pull required to crush the rivet per pitch length (Pc)
d) Minimum value of Pt, Ps and Pc

190. The hoop stress in a thin cylindrical shell is
a) Longitudinal stress
b) Compressive stress
c) Radial stress
d) Circumferential tensile stress

191. The lateral earth pressure is
a) Directly proportional to the depth of soil
b) Inversely proportional to the depth of soil
c) Directly proportional to the square of depth of soil
d) Inversely proportional to the square of the depth of soil

192. The bearing capacity of soil depends upon
a) Grain size of the soil
b) Size of footing
c) Shape of footing
d) All of these.

193. The ultimate bearing capacity of footing in sand
a) Decreases with depth of footing
b) Decreases with width of footing
c) Increase with depth and width of footing

d) None of the above

194. When the water table is close to the ground surface the bearing capacity of soil is reduced to
    a) One fourth
    b) One half
    c) Two third
    d) Three fourth

195. The contact pressure of rigid footing on cohesive soil is
    a) More in the centre than at the edges
    b) Less in the centre that at the edges
    c) Uniform throughout
    d) None of these.

196. The process of obtaining increases density of soil in a fill by reduction of its pore space by the expulsion of air is known as
    a) Soil exploration
    b) Soil stabilization
    c) Soil compaction
    d) Consolidation

197. The high density soil is filled in order to
    a) Increase its shear resistance
    b) Reduce future settlements
    c) Reduce percolation through the fill
    d) All of these.

198. Compression members always tend to buckle in the direction of the
    a) Axis of load
    b) Perpendicular to the axis of load
    c) Maximum cross section
    d) Least radius of gyration

199. A column of length (l) with both end fixed may be considered as equivalent to a column of length ---------- with both ends hinged
    a) l/8   b) l/4   c) l/2   d)l

200. A vertical column has two moments of inertia (i.e. Ixx and Iyy) the column will tend to buckle in the direction of the
    a) Axis of load
    b) Perpendicular to the axis of load
    c) Maximum moment of inertia
    d) Minimum moment of inertia

201. A column with maximum equivalent length has
    a) Both ends hinged
    b) Both ends fixed
    c) One ends fixed and other end hinged
    d) One end fixed and other end free

202. The ratio of largest loads in a test to the original cross section area of the test piece is called
    a) Elastic limit
    b) Yield stress
    c) Ultimate stress
    d) Breeding stress

203. If the percentage reduction of area of a certain specimen made of material 'A' under tensile test in 60% and the percentage reduction in area of a specimen with same dimensions made of material 'B' is 40% then
   a) The material 'A' is more ductile than material 'B'
   b) The material 'B' is more ductile than material 'A'
   c) The ductility of material A and B are equal
   d) A material is brittle and material 'B' is ductile

204. Factor of safety is defused as the ratio of
   a) Ultimate stress to working stress
   b) Working stress to ultimate stress
   c) Breaking stress to ultimate stress
   d) Ultimate stress to breaking stress

205. In compression test, the facture in cast iron would occur along
   a) The axis of load
   b) An oblique plane
   c) At right angles the axis of specimen
   d) Would not occur

206. The slenderness ratio is the ratio of
   a) Area of column to least radius of gyration
   b) Length of column to least radius of gyration
   c) Least radius of gyration to area of column
   d) Least radius of gyration to length of column

207. A column that fails due to direct stress is called
   a) Short column
   b) Long column
   c) Weak column
   d) Medium columns

208. The design of their cylindered shell is based on
   a) Hoop stress
   b) Longitudinal stress
   c) Arithmetic mean of hoop and the longitudinal stress
   d) Geometrical means of the hoop and longitudinal stress

209. The centre to centre distance between two consecutive rivets in a row is called
   a) Margin
   b) Pitch
   c) Back pitch
   d) Diagonal pitch

210. According to unwin formula, the relation between diameter of rivet hole (d) and thickness of plate (t) is given by
   a) d=t
   b) d=1.6 t
   c) d=2t
   d) d=6 t

211. The distance between the centre of a rivet hole to the nearest edge of plate is called
   a) Margin
   b) Pitch

c) Back pitch

d) Diagonal pitch

212. In order to avoid tearing off the plate at an edge, the distance from the centre of the rivet hole to the nearest edge of the plate (i.e. margin) should be

a) d

b) 1.5 d

c) 2 d

d) 2.5 d

213. The product of young's modulus (E) and moment of inertia (I) is known as

a) Modulus of rigidity

b) Bulk modulus

c) Flexural rigidity

d) Torsional rigidity

214. The mass per unit volume of a liquid at a standard temperature and pressure is called

a) Specific weight

b) Mass density

c) Specific gravity

d) None of the above

215. The ratio of specific weight of a liquid to the specific weight of pure water at a standard temperature is called

a) Density of liquid

b) Specific gravity of liquid

c) Compressibility of liquid

d) Surface tension of liquid

216. The force per unit length is the unit of

a) Surface tension

b) Compressibility

c) Capillarity

d) viscosity

217. The mercury does not wet the glass, this is due to the property of the liquid known as

a) Cohesion

b) Adhesion

c) Viscosity

d) Surface tension

218. The intensity of pressure at any point in a liquid is

a) Directly proportional to the area of the vessel containing liquid

b) Directly proportional to the depth of liquid from the surface

c) Directly proportional to the length of the vessel containing liquid

d) Inversely proportional to the depth of liquid from the surface

219. The pressure measured with the help of pressure gauge is called

a) Atmospheric pressure

b) Gauge pressure

c) Absolute pressure

d) Mean pressure

220. The absolute pressure is equal to

a) Gauge pressure + atmospheric pressure

b) Gauge pressure – atmospheric pressure

c) Atmospheric pressure – gauge pressure
d) Gauge pressure – vacuum pressure

221. A piezometer tube is used only for measuring
    a) Low pressure
    b) High pressure
    c) Moderate pressure
    d) Vacuum pressure

222. The liquid used in manometers should have
    a) Low density
    b) High density
    c) Low surface tension
    d) High surface tension

223. When a body is placed over a liquid, it will sink down if
    a) Gravitational force is equal to the up thrust of the liquid
    b) Gravitational force is less than the up thrust of the liquid
    c) Gravitational force is more than the up thrust of the liquid
    d) None of the above

224. The centre of gravity of the volume of the liquid displaced is called
    a) Centre of pressure
    b) Centre of buoyancy
    c) Metacentre
    d) None of these

225. When a body floating in a liquid, is given a small angular displacement, its starts oscillating about a point known as
    a) Centre of pressure
    b) Centre of gravity
    c) Centre of buoyancy
    d) Metacentre

226. If a body floating in a liquid returns backs to its original position, when given a small angular displacement, the body is said to be in
    a) Neutral equilibrium
    b) Stable equilibrium
    c) Unstable equilibrium
    d) None of these

227. One cubic meter of water weighs
    a) 100 lit
    b) 250 lit
    c) 500 lit
    d) 1000 lit

228. When a liquid is flowing through a pipe, the velocity of the liquid is
    a) Maximum at the centre and minimum near the walls
    b) Minimum at the centre and maximum near the walls
    c) Zero at the centre and maximum near the walls
    d) Maximum at the centre and zero near the walls

229. A flow in which each liquid particle has a definite path, and the paths of individual particles do not cross each other is called
    a) Ready flow
    b) Uniform flow
    c) Stream line flow

d) Turbulent flow
230. The flow in a pipe or channel is said to be uniform when
    a) The liquid particles at all the sectional have same velocities
    b) The liquid particles at different sections have different velocities
    c) The quantity of liquid flowing per second is constant
    d) Each liquid particle has a definite path
231. A flow in which the quantity of liquid flowing per second is constant, is called -
    ------ flow.
    a) Steady
    b) Streamline
    c) Turbulent
    d) Unsteady
232. a flow through an expanding tube at constant rate is called
    a) Steady uniform flow
    b) Steady non uniform flow
    c) Unsteady uniform flow
    d) Unsteady non uniform flow
233. A flow whose streamline is requested by a curve is called
    a) One dimensional flow
    b) Two dimensional flow
    c) Three dimensional flow
    d) Four dimensional flow
234. In one dimensional flow, the flow
    a) Is steady and uniform
    b) Takes place in straight line
    c) Takes place in curve
    d) Takes place in one direction
235. The total energy of a liquid particles in motion is equal to
    a) Pressure energy + kinetic energy + potential energy
    b) Pressure energy – kinetic energy + potential energy
    c) Potential energy – pressure energy + kinetic energy
    d) Kinetic energy – pressure energy + kinetic energy
236. For a perfect incompressible liquid, flowing in a continuous stream, the total
    energy particle remains the same, while the particle moves from one point to
    another. This statement is called
    A) Continuity equation
    B) Bernoulli's equation
    C) Pascal's equation
    D) Archimede's principle

237. Barometer is used to measure
    a) Velocity of liquid
    b) Atmospheric pressure
    c) Pressure pipes and channels
    d) Difference of pressure between two points in a pipe

238. Venturimeter is used to
    a) Measures the velocity of a flowing liquid
    b) Measure the pressure of a flowing liquid
    c) Measure the discharge of liquid flowing in a pipe

d) Measure the pressure difference of liquid flowing between two points in a pipe line.

239. In order to measure the flow with a Venturimeter, it is installed in
   a) Horizontal line
   b) Inclined line with flow upwards
   c) Inclined line with flow downwards
   d) Any direction and in any location

240. A notch is used to measure ------------- of liquids.
   a) Pressure
   b) Discharge
   c) Velocity
   d) Volume

241. Loss of head at entrance in a pipe is
   a) $V^2/2g$
   b) $0.5v^2/2g$
   c) $0.375v^2/2g$
   d) $0.75v^2/2g$

242. A weir generally, used as spillway of a dam is
   a) Narrow crested weir
   b) Broad crested weir
   c) Ogee weir
   d) Submerged weir

243. The frictional resistance of a pipe varies approximately with ----------- of the liquid.
   a) Pressure
   b) Velocity
   c) Square of velocity
   d) Cube of velocity

244. The total energy of a liquid particle in motion is equal to
   a) Pressure energy + Kinetic energy + Potential energy
   b) Pressure energy – (Kinetic energy + Potential energy)
   c) Potential energy – (Pressure energy + Kinetic energy)
   d) Kinetic energy – (Pressure energy + Potential energy)

245. The maximum efficiency of transmission through a pipe is
   a) 50%   b) 56.7%   c) 66.67%   d) 76.66%

246. A nozzle placed at the end of a water pipe line discharges water at a
   a) Low pressure
   b) High pressure
   c) Low velocity
   d) High velocity

247. The hammer blow in pipe occurs when
   a) There is excessive leakage in the pipe
   b) The pipe bursts under high pressure of fluid
   c) The flow of fluid through the pipe is suddenly brought to rest by closing of the valve
   d) The flow of fluid through the pipe is gradually brought to rest by closing of the valve

248. The discharge through a channel of a rectangular section will be maximum if
   a) Its depth is twice the breadth
   b) Its breadth is twice the depth

c) Its depth is thrice the breadth
d) Its breadth is thrice the depth

249. The discharge through a channel circular section will be maximum when the depth of water is --------------- the diameter of the circular channel
    a) 0.34 times
    b) 0.67 times
    c) 0.81 times
    d) 0.95 times

250. The highest efficiency is obtained with a channel of ------------- section
    a) Circular
    b) Square
    c) Rectangular
    d) Trapezoidal

251. Newton's law of viscosity is a relationship between
    a) Pressure, velocity and temperature
    b) Shear stress and rate of shear strain
    c) Shear stress and velocity
    d) Rate of shear strain and temperature

252. A fluid whose viscosity does not change with the rate of deformation or shear strain is known as
    a) Reel fluid
    b) Ideal fluid
    c) Newtonian fluid
    d) Non Newtonian fluid

253. Water is a ---------------- fluid
    a) Real   b) ideal   c) Newtonian d) non-newtonial

254. The shear stress strain graph for a Newtonian fluid is a
    a) Straight line
    b) Parabolic curve
    c) Hyperbolic curve
    d) Elliptical
255. The velocity at which the flow changes from laminar flow to turbulent flow is called
    a) Critical velocity
    b) Velocity of approach
    c) Sub-sonic velocity
    d) Super-sonic velocity
256. A point in a compressible flow where the velocity of fluid s zero is called
    a) Critical point
    b) Vena contracta
    c) Stagnation point
    d) None of these
257. A product of mass and acceleration of flowing liquid is called
    a) Inertia force

b) Viscous force
c) Gravity force
d) Pressure force
258. The ratio of the inertia force to the viscous force is called
a) Reynold's number
b) Froude's number
c) Weber's number
d) Euler's number
259. Which of the following pump is suitable for small discharge and high heads
a) Centrifugal pump
b) Axial flow pump
c) Mixed flow pump
d) Reciprocating pump
260. Which of the following pump is successfully used for lifting water from deep wells
a) Centrifugal pump
b) Reciprocating pump
c) Jet pump
d) Air lift pump
261. The portion of a road surface, which is used by vehicular traffic, is known as
a) Carriage way
b) Shoulder
c) Express way
d) All of these
262. The camber recommended for water bounds macadam roads in
a) 1 in 24 to 1 in 30
b) 1 in 30 to 1 in 48
c) 1 in 48 to 1 in 60
d) 1 in 60 to 1 in 80
263. The inward tilt given to be cross section of the road surface, throughout the length of the horizontal curve is known as
a) Superelevation
b) Cant
c) Banking
d) All of these
264. The rate of rise or fall of the road surface along its length, is called
a) Cant
b) Superelevation
c) Gradient
d) banking
265. the superelevation is
a) Directly proportional to the velocity of vehicles
b) Inversely proportional to the velocity of vehicles
c) Directly proportional to the width of pavement
d) Inversely proportional to the width of pavement
266. The equilibrium super elevation is given by
a) V^2/R
b) V^2/gR
c) $V^2/127R$
d) None of these

267. The total rise or fall between any two points chosen on the alignment derided by the horizontal distance between the two points is called
a) Average gradient
b) Exceptional gradient
c) Ruling gradient
d) Floating gradient

268. A curve, whose radius gradually changes from a infinite value to a finite value or a vice versa for the purpose of giving easy change of direction of a road is called a
a) Circular curve
b) Transition curve
c) Simple curve
d) Compound curve

269. Alignment of a road is finally decided on the basis of
a) Selection of route
b) Field survey
c) Trace cut
d) None of these

270. In detailed survey of a hill road, the interval for plotting the contours at sharp curves is generally
a) 1m   b) 2m   c) 4m   d) 6m

271. A terrian with cross slope less than 10% is called
a) Step terrian
b) Mountainous terrian
c) Level terrian
d) Rolling terrian

272. The parapet walls are usually required on the valley side of the roadway in order to
a) Retain the earth from slippage
b) Properly guide the vehicles to the roadway
c) Provide good drainage system
d) heap the road dry

273. The California bearing ratio (CBR) method of flexible pavement design given an idea about
a) The quality of road making material
b) The traffic intensities
c) The characteristics of soil
d) All of these

274. The longitudinal joint in concrete pavements as recommended by 1 RC is of
a) Tongue and groove type
b) Butt type
c) Weakened plane type
d) Hinged type

275. The increase in traffic volume, due to the general increase in the number of transport vehicles from year to year, is known as
a) Normal traffic growth
b) Generated traffic
c) Development traffic
d) Existing traffic

276. Highway density is defined as the total number of vehicles
   a) That can be accommodated as a unit length of the road
   b) That can pass a given point in a unit period of time
   c) That can pass a given point in a specified period of time
   d) None of the above

277. The design capacity is also known as
   a) Basic capacity
   b) Theoretical capacity
   c) Practical capacity
   d) Possibility capacity

278. The number of vehicles passing at a point on the highway in unit time is known as
   a) Traffic capacity
   b) Traffic volume
   c) Traffic density
   d) All of these.

279. A golden rule for the procurement of construction stores is that
   a) Half of the construction stores should be at work site and half under procurement.
   b) Two third of the construction store should be at work site and one third under procurement
   c) Three fourth of the construction stores should be at work site and one fourth under procurement
   d) Whole of the construction stores should be at work site.

280. PERT stands for
   a) Programme Estimation and Reporting Technique
   b) Process Estimation and Review Technique
   c) Programme Evaluation and Review Technique
   d) Planning Estimation and Resulting Technique.

281. CPM stands for
   a) Combined Process Method
   b) Critical Path Method
   c) Common Planning Method
   d) Critical Process Method

282. A critical activity has
   a) Maximum float
   b) Minimum float
   c) Zero float
   d) Average float

283. Which of the following is a dummy activity ?
   a) Excavation of foundations
   b) Laying the foundation concrete
   c) Awaiting the arrival of concrete material
   d) Curing the foundation concrete.

284. The softest and hardest rocks (in that order) are
   a) Marble and diamond
   b) Gypsum and orthoclase
   c) Talc and diamond
   d) Quartz and topaz

285. Shale, slate, marble, limestone and sandstones etc. are

a) Stratified rocks
b) Unstratified rocks
c) Foliated rocks
d) None of the above

286. Rocks formed from molten magma are known as
a) Sedimentary rocks
b) Igneous rocks
c) Metamorphic rocks
d) None of these

287. Rocks formed due to alteration of original structure under heat and excessive pressure are :
a) Sedimentary rocks
b) Igneous rocks
c) Metamorphic rocks
d) None of these

288. Lime stone and marble – on the basis of their chemical characteristics may be classified as
a) Calcareous rocks
b) Argillaceous rocks
c) Siliceous rocks
d) None of the above

289. Petrology confines itself to the study of the
a) Petroleum products
b) Formation of various groups of rocks and their composition
c) Features of the surface of the earth
d) None of the above

290. The phenomenon of peeling off of curved shells or layers from rocks under the influence of thermal effects is called
a) Spheroidal weathering
b) Chemical weathering
c) Exfoliation
d) None of the above

291. Bituminous coal – which is also known as common coal, cooking coal etc – contains carbon upto the maximum extent of
a) 30%   b) 50%   c) 60%   d) 90%

292. For irrigation purposes, the pH value of water should be
a) Between 3 and 6
b) Between 6 and 8.5
c) Between 8.5 to 11.0
d) More than 11

293. The amount of water required to fill up the pore spaces in soil particles by replacing all air held in pore spaces is known as
a) Field capacity
b) Saturation capacity
c) Available moisture
d) All of these

294. The water content at which plants can no longer extract sufficient water from the soil for its growth is called.
a) Field capacity
b) Saturation capacity
c) Permanent wilting point

d) Available moisture
295. The amount of precipitation is measured by
   a) Rain gauge
   b) Osmoscope
   c) Turbidimeter
   d) All of these
296. A canal aligned nearly parallel to the contours of a country is known as
   a) Side slope canal
   b) Contour canal
   c) Water shed canal
   d) Ridge canal

297. A gap or margin of height, between full supply level (FSL) and top of bank is called
   a) Free board
   b) Dowel
   c) Inspection roadway
   d) Berm
298. The contour lines can cross one another on map only in case of
   a) Vertical cliff
   b) A valley
   c) A ridge
   d) An overhanging cliff
299. The cement concrete from which entrained air and excess water are removed after placing it in position is called
   a) Vacuum concrete
   b) Light weight concrete
   c) Prestressed concrete
   d) Sawdust concrete
300. The most commonly used chemical for dechlorination of water is
   a) Sodium thiosulphate
   b) Sodium sulphite
   c) Potassium permanganate
   d) All of these
301. Bleaching powder is
   a) Slaked lime
   b) Chloride of lime
   c) Hypochloride of lime
   d) Hypo-clorite of lime
302. A drop manhole is provided of
   a) A sewer drops from a height
   b) A branch sewer discharges into main sewer at a higher level
   c) Both a and b
   d) None of these

303. A pipe used to carry discharge from sanitary fittings like bathrooms, kitchens, etc is called
   a) Waste pipe
   b) Soil pipe
   c) Vent pipe

d) Anti siphonage pipe

304. The station where lines from three or more directions meet is called a
a) Crossing station
b) Flag station
c) Junction station
d) Terminal station

305. A temporary structure constructed a river for excluding water from a given site to enable the building operation to be performed on dry surface is called
a) Caisson
b) Cofferdam
c) Well foundation
d) Raft foundation

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