

1. A weir is a _____ barrier.
 (a) gated (b) ☒ ungated (c) controlled (d) 3-gated
2. Weirs are usually aligned at _____ degree angle to the direction of flow in the river.
 (a) 45° (b) 80° (c) ☒ 90° (d) 120°
3. The destabilising moment acting on the dam due to water stored upto 30 m. depth behind the dam will be
 (a) $9.0 \times 10^6 \text{ kg-m}$ (b) ☒ $4.5 \times 10^5 \text{ kg-m}$ (c) $9.0 \times 10^5 \text{ kg-m}$ (d) $4.5 \times 10^6 \text{ kg-m}$ $\frac{1}{2} \times 4$
4. Which is not a weir?
 (a) ☒ steel weir (b) rock fill weir (c) masonry weir (d) concrete weir $\frac{1}{2} \times 10$
5. _____ weir is the simplest in structure.
 (a) Masonry (b) ☒ Rock fill (c) Concrete (d) Concrete with glacis
6. The upstream slope of the weir is fixed between _____.
 (a) $2(H) : 1(V)$ to $3(H) : 1(V)$ (b) $2.5(H) : 1(V)$ to $3.5(H) : 1(V)$
 (c) $3.0(H) : 1(V)$ to $4.0(H) : 1(V)$ (d) $2.0(H) : 1(V)$ to $4.0(H) : 1(V)$
7. Kennedy's gauge outlet is a _____.
 (a) Non-modular outlet (b) ☒ Flexible outlet
 (c) Rigid module (d) None of these
8. The flexibility of hyper proportional outlet is -
 (a) 0.6 (b) 0.8 (c) 1.0 (d) ☒ More than 1.0
9. Which of the following is not a Canal regulation work?
 (a) Canal fall (b) Canal escape (c) ☒ Super passage (d) All of these
10. The discharge of canal can be measured by _____.
 (a) meter falls (b) non-meter falls (c) Neither (a) nor (b) (d) ☒ Both (a) and (b)
11. Cross regulator is provided on _____.
 (a) main canal at D/S of off-taking channel (b) ☒ main canal at U/S of off-taking channel
 (c) Neither (a) nor (b) (d) Both (a) and (b)
12. The capacity of escape channel should not be less than _____ percent of capacity of parent channel.
 (a) 40 (b) 50 (c) 60 (d) ☒ 70
13. A fall is provided in a canal when _____.
 (a) ☒ ground slope exceeds canal bed slope (b) canal bed slope exceeds ground slope
 (c) Neither (a) nor (b) (d) Both (a) and (b)
14. Rectangular crest of Sarda type fall is adopted when discharge is less than _____.
 (a) ☒ 14 cumec (b) 20 cumec (c) 22 cumec (d) 26 cumec
15. Function(s) of cross regulator is/are generally _____.
 (1) Feed off-taking canal in low supplies.
 (2) Ensure safety of canal lining where sub-soil water level is high.
 (3) Assists in raising the water level in parent channel.
 (a) (1) only (b) ☒ (1) and (3) only (c) (2) and (3) only (d) (1), (2) and (3)

16. The slope of U/S and D/S glacis in a canal, when discharge is more than 10 cumec, is (d) 2.5 : 1
 (a) 1 : 1 (b) 1.5 : 1 (c) 2 : 1
17. Structure(s) to carry a canal over a natural drainage includes _____.
 (i) Syphon aqueducts (ii) Super passage (iii) Aqueducts (d) (i) and (iii) only
 (a) (i) only (b) (i) & (ii) only (c) (i), (ii) & (iii)
18. A cross drainage work is a structure constructed to carry an aligned canal
 (1) At the same level as that of drainage (2) Over the drainage (3) Under the drainage (d) (2) and (3)
 (a) (1) and (2) (b) (1), (2) and (3) (c) (1) and (3)
19. Cross sections of barrels of a box syphon is/are _____. (d) All of these
 (a) parabola (b) triangular (c) rectangular
20. In an aqueduct, the natural drain runs _____.
 (a) at the same level (b) under the canal (c) partly at the same level partly under the canal (d) None of these
21. In a cross drainage works, the function of an inlet is to admit drain water into a _____.
 (a) canal (b) field (c) drain (d) None of these
22. Cross drainage works where the bed levels of Canal and drain are equal is called _____.
 (a) level crossing (b) super passage (c) aqueduct (d) syphon-aqueduct
23. A super passage is a cross drainage work provided when bed of natural drain is _____.
 (a) well above FSL in Canal (b) below bed level of Canal (c) at the same level as Canal bed (d) All of these
24. For very large cross drainage works, the design discharge should be based on :
 (a) Project design flood (b) 25 to 50 years frequency of flood (c) Maximum probable flood (d) All of these
25. A masonry gravity dams may fail due to _____.
 (a) overturning (b) sliding (c) tension (d) Any of these or combination of them
26. According to use, the various types of dams are _____.
 (1) Storage (2) Diversion (3) Detention (c) (1), (2) and (3) (d) (2) and (3)
 (a) (1) only (b) (1) and (2) only
27. An overflow dam is commonly known as _____.
 (a) spillway (b) level crossing (c) aqueduct (d) syphon
28. The failure of a gravity dam is _____.
 (a) not possible (b) immediately (c) not sudden (d) during sudden drawdown

29. In a river valley project _____ types of dams are combined.
 (a) Arch dam & steel dam (b) Overflow & non-overflow dams
 (c) Floating (d) Earth & gravity
30. The benefit cost ratio of a gravity dam is _____.
 (a) 0.1 to 0.2 (b) more than 1 (c) 0.2 to 0.4 (d) 0.4 to 0.8
31. Following are the forces acting on a gravity dam :
 (1) Water pressure and uplift pressure
 (2) Weight of dam and earthquake pressure
 (3) Wave pressure
 (a) (1) and (2) (b) (1), (2) and (3) (c) (1) and (3) (d) (2) and (3)
32. Earthen dams are :
 (1) Storage dam (2) Rigid dam (3) Non-overflow dam
 (a) (1) and (2) (b) (2) and (3) (c) (1) and (3) (d) (1), (2) and (3)
33. For a dam, safety valve is
 (a) Flood routing (b) spillways (c) upstream (d) down stream
34. A syphon spillway operates _____.
 (a) with mechanical devices (b) automatically
 (c) with moving parts (d) All of these
35. The discharge capacity of a tunnel spillway is _____.
 (a) Limited (b) Negligible (c) Large (d) Very large
36. The most disastrous effect of inadequate spillway capacity is on _____.
 (a) gravity dams (b) arch dams
 (c) buttress dams (d) earth and rock fill dams
37. The overflow spillway has maximum efficiency, when run at a pressure _____ the designed head.
 (a) 1.5 times (b) equal to (c) 0.8 times (d) 2 times
38. In a slightly curved gravity dam, where there is no arch action, the resisting force is _____.
 (a) arch thrust (b) reinforcement (c) foundation (d) the weight of the dam
39. For a gravity dam the normal stress at the toe of dam is _____.
 (Symbols have their usual meanings)
 (a) $\frac{V}{b} \left(1 - \frac{6e}{b}\right)$ (b) $\frac{V}{b} \left(1 + \frac{6e}{b}\right)$ (c) $\frac{V}{b} \left(1 + \frac{6b}{e}\right)$ (d) $\frac{V}{b} \left(1 - \frac{6b}{e}\right)$
40. The highest gravity dam in India is _____.
 (a) Sardar Sarovar dam (b) Tehri dam
 (c) Indira Sagar dam (d) Bhakra dam

41. Which of the following forces does not impart stability to a gravity dam ?
(a) dead weight
(b) reservoir water pressure
(c) thrust of tail water
(d) weight of water on upstream sloping surface

42. Very suitable soils for impervious core in zoned earth dam are _____.

- (a) gravel with appreciable amount of clay (GC)
(b) clean sand
(c) silt and clays with compressibility and liquid limit greater than 50
(d) Sand with appreciable amount of fines

43. The settlement allowance generally provided in an earthen dam is _____ percentage of embankment height.

- (a) 1
(b) 1 to 2
(c) 2 to 3
(d) 3 to 4

44. Flow net in a dam is a graphical method to determine _____.

- (a) velocity of flow
(b) phreatic line
(c) discharge through the dam
(d) pore pressure

45. The most critical condition for the stability of slopes in a homogeneous earth dam is _____.

- (a) Just after construction
(b) Reservoir full condition
(c) Sudden draw-down condition
(d) None of these

46. Overtopping of the dam is caused by _____ failure.

- (a) seepage
(b) structural
(c) earthquake
(d) hydraulic

47. Water logging occurs due to _____.

- (a) Rise of water table up to 4 m below GL
(b) Rise of water table up to 5 m below GL
(c) Rise of water table up to root zone of crops
(d) Rise of water table up to 1 m below root zone of crops

8. Higher water table can be tolerated in _____ type of soils.

- (a) Loamy
(b) Silty
(c) Sandy
(d) All of these

9. The yield of the crop starts falling at a pH value of _____.

- (a) 7.0
(b) 7.5
(c) 8.0
(d) 8.5

10. In lined canal system, water losses are reduced to less than _____.

- (a) 20%
(b) 30%
(c) 40%
(d) 80%

51. Drainage becomes necessary
 (i) when there is excess rainfall.
 (ii) when the land is over irrigated.
 (iii) when there is scanty rainfall. ✓
 (a) (i) only (b) (ii) only (c) (i) & (ii) (d) (ii) & (iii)
52. Tile drainage is a/an _____.
 (a) subsurface drainage (b) open drainage
 (c) deep drain (d) Both (b) and (c) ✓
53. The drainage system used to drain too deep or too large depressions is the _____.
 (a) bedding (b) random (c) diversion (d) converging
54. When a blind inlet is provided over the subsurface drain, it is termed as
 (a) surface inlet (b) cover drain (c) French drain (d) All of these
55. The side slopes, for surface drains, in sandy loam soil, is recommended as _____.
 (a) 1 : 1 (b) 1.5 : 1 (c) 2 : 1 (d) 3 : 1
56. The maximum permissible velocity of flow for surface drain in clay loam soil is
 (a) 1.2 m/sec (b) 1.6 m/sec (c) 2.0 m/sec (d) 2.5 m/sec
57. In case of field drain system, the maximum spacing of parallel drains in sands is provided as _____.
 (a) 100 m (b) 200 m (c) 300 m (d) 400 m
58. In India, Kharif crop is also known as
 (a) Winter crop (b) Perennial crop (c) Monsoon crop (d) Eight months crop
59. River training works are provided to guide the river flow axially through the _____.
 (1) Barrage (2) Escape (3) Bridge ✓
 (a) (1) and (2) (b) (2) and (3) (c) (1) and (3) (d) (1), (2) and (3)
60. River training works are based on -
 (a) Tractive Force theory (b) Regime flow theory
 (c) Both (a) and (b) (d) None of these
61. Types of river training works are -
 (1) Guide Banks (2) Artificial cut off (3) Bank protection
 (a) (1), (2) and (3) (b) (2) and (3) (c) (1) and (3) (d) (1) and (2)
62. The angle of sweep of curved head according to the river curvature varies from _____.
 (a) 45° to 60° (b) 60° to 90° (c) 90° to 110° (d) 120° to 145°



63. Afflux embankments are of _____.
(a) Steel (b) Earthen (c) Wooden (d) None of these
64. A temporary permeable structure provided on the curve of the river to protect the river bank from erosion is known as _____.
(a) SPURS (b) Guide bank (c) Embankment (d) Bandalling
65. Which one of the following is not a permeable spur?
(a) Pile (b) Bamboo (c) Tree (d) Rock fill
66. Submerged permeable spurs are recommended for _____ type of River.
(a) wide and deep (b) narrow and deep
(c) narrow and shallow (d) wide and shallow
67. The objective of irrigation management is to supply and apply water _____.
(1) in right amount (2) at right place (3) at right time
(a) (1) and (2) (b) (1), (2) and (3) (c) (3) and (1) (d) (2) and (3)
68. A good canal irrigation management can be achieved by _____.
(1) lining of canals (2) educating farmers (3) charging farmers for water quantity
(a) (1) and (2) (b) (2) and (3) (c) (1), (2) and (3) (d) (1) and (3)
69. The term "command area development" is related to _____.
(a) military (b) irrigation (c) residential (d) structures
70. "In India, Canal water charges are generally fixed on the basis of _____".
(1) area served basis
(2) crop basis
(3) volume of water supplied
(a) (1) and (2) (b) (1) and (3) (c) (2) and (3) (d) (1), (2) and (3)
71. Beas project was a joint venture of
(a) Punjab, Haryana and Madhya Pradesh (b) Punjab and Haryana
(c) Haryana and Rajasthan (d) Punjab, Haryana and Rajasthan
72. Hirakud dam is constructed in _____.
(a) Rajasthan (b) Odisha (c) Bihar (d) Punjab
73. The Nagarjuna project comprises the construction of dam on _____.
(a) Satluj river (b) Ganga river (c) Tapti river (d) Krishna river

74. Tungabhadra multi-project serving irrigation, hydro energy, flood control etc. benefits to
 (a) Andhra Pradesh (b) Karnataka
 (c) Andhra Pradesh and Karnataka (d) Tamil Nadu
75. Gandhi Sagar dam was constructed under _____ project.
 (a) Chambal (b) Farakka (c) Tungabhadra (d) Beas
76. Damodar Valley Project Corporation was set up in the year _____.
 (a) 1942 (b) 1946 (c) 1948 (d) 1950
77. Height of Liquid in a capillary tube _____.
 (a) increases with increase in specific weight (b) increases with increase in diameter
 (c) increases with decrease in diameter (d) All of these
78. The pressure in meters of oil having Sp. Gr. 0.8, equivalent to 100 m. of water is _____.
 (a) 80 (b) 90 (c) 125 (d) 130
79. Dimensions of viscosity are $N-s/m^2$
 (a) $FL^{-1}T^{-1}$ (b) FL^2T (c) FLT^{-2} (d) $FL^{-2}T$
80. To avoid correction due to capillary action, the diameter of tube should be _____.
 (a) more than or equal to 6 mm (b) less than 3 mm
 (c) more than 8 mm but less than 10 mm (d) equal to 2 mm
81. Loss of head due to sudden enlargement in a pipe's diameter is given by _____.
 (where symbols have their usual meanings).
 (a) $(V_1^2 - V_2^2)/2g$ (b) $(V_1^2 - V_2^2)/g$ (c) $(V_1 - V_2)^2/g$ (d) $(V_1 - V_2)^2/2g$
82. Discharge through a V-notch varies as _____.
 (Where symbols have their usual meanings.)
 (a) H (b) $H^{5/2}$ (c) $H^{3/2}$ (d) $H^{1/2}$
83. A flow is said to be laminar when
 (a) the fluid particles move in layers parallel to the boundary.
 (b) the Reynolds number is high.
 (c) the fluid particles move in a Zig-Zag way.
 (d) All of these
84. An ideal fluid is defined as the fluid which _____.
 (a) is compressible (b) is incompressible and viscous
 (c) is incompressible and non-viscous (d) has appreciable surface tension
85. Kinematic viscosity is defined as $\frac{\mu}{\rho}$.
 (a) Dynamic viscosity $\times$ density (b) Dynamic viscosity / density
 (c) Dynamic viscosity $\times$ pressure (d) Pressure $\times$ density
86. The resultant hydrostatic force acts through a point known as _____.
 (a) Centre of gravity (b) Centre of buoyancy
 (c) Centre of pressure (d) None of these

87. The metacentric height of a floating body is _____.
 (a) The distance between meta centre and centre of buoyancy.
 (b) The distance between the centre of buoyancy and centre of gravity.
 (c) The distance between meta centre and centre of gravity.
 (d) None of these
88. The flow rate through a circular pipe is measured by _____.
 (a) pitot tube (b) venturimeter only
 (c) orifice meter only (d) orifice meter and venturimeter both
89. For a laminar flow through a circular pipe, the ratio of the maximum velocity to average velocity is _____.
 (a) 1.5 (b) 2.0 (c) 2.5 (d) 3.0
90. The range of coefficient of discharge (C_d) for a venturimeter is _____.
 (a) 0.60 to 0.70 (b) 0.70 to 0.80 (c) 0.80 to 0.90 (d) 0.95 to 0.99
91. If the fluid characteristics like velocity, pressure, density etc. do change with respect to times, the fluid flow is called _____.
 (a) Steady flow (b) Unsteady flow (c) Uniform flow (d) Non-uniform flow
92. The coefficient of discharge (C_d), coefficient to contraction (C_c) and Coefficient of velocity (C_v) are related as _____.
 (a) $C_d = \frac{C_v}{C_c}$ (b) $C_d = C_v \times C_c$ (c) $C_d = \frac{C_c}{C_v}$ (d) $C_d = \frac{1}{C_c \times C_v}$
93. The velocity distribution in laminar flow through a circular pipe follow the _____.
 (a) parabolic law (b) linear law (c) logarithmic law (d) hyperbolic law
94. If Re is the Reynold number, the co-efficient of friction (f) for laminar flow through a circular pipe is given by _____.
 (a) $f = \frac{0.0791}{(Re)^{1/4}}$ (b) $f = \frac{16}{Re}$ (c) $f = \frac{64}{Re}$ (d) $f = \frac{32}{Re}$
95. Hydraulic Gradient Line (HGL) represents the sum of
 (a) Pressure head and kinetic head
 (b) Kinetic head and datum head
 (c) Pressure head, kinetic head and datum head
 (d) Pressure head and datum head
96. Reynolds number is expressed as _____.
 (Symbols have their general meanings.)
 (a) $Re = \frac{\rho \mu L}{V}$ (b) $Re = \frac{V \mu L}{\rho}$ (c) $Re = \frac{\rho V L}{\mu}$ (d) $Re = \frac{V \times d}{\mu}$
97. If the density of a fluid is constant from point to point in a flow region, it is called _____.
 (a) Steady flow (b) incompressible flow (c) non-uniform flow (d) rotational flow

98. The difference in pressure head, measured by a mercury water differential manometer for a 20 cm difference of mercury level will be _____
 (a) 0.2 m of water (b) 2.0 m of water (c) 2.52 m of water (d) 2.72 m of water
99. When pipes are connected in parallel, the total loss of head _____
 (a) is equal to the sum of the loss of head in each pipe.
 (b) is same as in each pipe
 (c) is equal to reciprocal of the sum of the loss of head in each pipe
 (d) None of these
100. Chezy's formula is given by : _____
 If m - hydraulic mean depth
 i - slope of bed
 c - Chezy's constant
 V - velocity
- (a) $V = i\sqrt{mc}$ (b) $V = c\sqrt{mi}$ (c) $V = m\sqrt{ci}$ (d) $V = i \times m \times c$
101. The discharge through a trapezoidal channel is maximum when _____
 (a) half of top width = sloping side (b) top width = half of sloping side
 (c) top width = $1.5 \times$ sloping side (d) top width = $3.0 \times$ sloping side
102. If q is the rate of flow per unit width of channel, the critical depth (y_c) is given by ____.
- (a) $\left(\frac{q^2}{g}\right)^{1/2}$ (b) $\left(\frac{q}{g}\right)^{1/3}$ (c) $\left(\frac{q^2}{g}\right)^{1/3}$ (d) $\left(\frac{q^2}{g}\right)^{2/3}$
103. The most economical section is one which, for a given cross sectional area, slope of bed (i) and coefficient of resistance, has _____
 (a) Maximum wetted perimeter (b) Maximum discharge
 (c) Maximum depth of flow (d) Minimum discharge
104. A pump is defined as a device which converts _____
 (a) hydraulic energy into mechanical energy. (b) mechanical energy into hydraulic energy.
 (c) kinetic energy into mechanical energy. (d) hydraulic energy into kinetic energy.
105. The overall efficiency of a turbine is the ratio of _____.
 (a) Power at the inlet of turbine to the power at the shaft.
 (b) Power at the shaft to the power given to the runner.
 (c) Power at the shaft to the power at the inlet of turbine.
 (d) None of these
106. A turbine is called reaction turbine, if at the inlet of the turbine, the total energy is _____.
 (a) Kinetic energy only (b) Kinetic energy and pressure energy
 (c) Pressure energy only (d) None of these

$$\frac{H_1}{H_2} = \frac{V_2}{V_1}$$

$$\frac{0.20}{H_2} = \frac{1}{13.5}$$

$$H_2 = 0.2 \times 13.5$$

$$2.70$$



$$\frac{d^2 + n^2 + 1}{d^2 + (nd)^2} = \frac{1}{\sqrt{d(1+n^2)}}$$

$$\underline{WP - RP - SP}$$

107. In Bandhara irrigation, the length of the canal system is limited to :
 (a) 8 km (b) 16 km (c) 24 km (d) 30 km
108. Inundation canals serve during _____.
 (a) Rainy months (b) Winter months (c) Whole year (d) Eight months
109. The largest area under tubewell irrigation in India is in _____.
 (a) Punjab (b) West Bengal
 (c) Uttar Pradesh (d) Bihar and Jharkhand
110. For steep land, irrigation is done by -
 (a) Border flooding (b) Free flooding (c) Basin flooding (d) Sprinkler or Drip
111. Irrigation frequency is the function of _____.
 (a) crop only (b) soil-crop-climate
 (c) soil-crop-climate-fertilizer (d) soil-climate only
112. Sub-irrigation _____.
 (a) is suitable for arid or semi-arid area (b) is also known as seepage irrigation
 (c) is also known as basin irrigation (d) cannot be used for tomatoes
113. The drum technique determines _____.
 (a) peak runoff (b) evapotranspiration (c) rainfall efficiency (d) effective rainfall
114. The amount of effective rainfall increases with :
 (a) Increase in water holding capacity of soil
 (b) Increase in deep percolation ratio
 (c) Increase in infiltration rate
 (d) Increase in permeability rate
115. The average pan coefficient for the Colorado Sunken Pan is
 (a) 0.70 (b) 0.78 (c) 0.90 (d) 0.95
116. The diameter of the rainfall collector in a Symon's rain gauge is _____.
 (a) 8.0 cm (b) 12.7 cm (c) 13.5 cm (d) 35.0 cm
117. Dicken's formula for high flood discharge is useful for catchment area in :
 (a) Southern India (b) Central and Northern India
 (c) Eastern India (d) Western India
118. The ratio of number of days the canal has actually been kept open to the number of days the canal was designed to open during the base period is -
 (a) Capacity factor (b) Irrigation factor (c) Time factor (d) Crop ratio
119. In Irrigation, C.C.A. means
 (a) Cross Commanded Area (b) Culturable Commanded Area
 (c) Culturable Cultivated Area (d) Culturable un-cultivated Area
120. Intensity of rainfall is _____.
 (a) Total rainfall in a period
 (b) Rainfall per unit area
 (c) Volume of water collected per unit time
 (d) Depth of rainfall per unit time during which it fell

$$CIR = C_u - R_e$$



121. Evapotranspiration is confined to _____.
 (a) Day light hours only (b) Night time only
 (c) Fallow land surfaces only (d) During 18 hours of the day
122. The amount of water which flows over the surface of the earth after all the losses have taken place is called _____.
 (a) Maximum flood discharge (b) Precipitation
 (c) Hydrograph (d) Run-off
123. The precipitation is measured in terms of _____.
 (a) Intensity of pressure (b) Depth of water per unit time
 (c) Flow velocity (d) Volume of water
124. For a calculation of storm hydrograph, one may use unit hydrograph for _____.
 (a) the same duration or time of concentration only
 (b) the same duration only
 (c) the base period only
 (d) any period
125. Ryve's formula for determining maximum flood discharge (Q_P) is –
 (Where symbols have their usual meanings)
 (a) $Q_P = C_R A^{2/3}$ (b) $Q_P = C_R A^{3/4}$ (c) $Q_P = C\sqrt{A}$ (d) $Q_P = CA^{4/3}$
126. The most preferred method for calculating the rainfall in Hilly areas is _____.
 (a) Arithmetic average method (b) Thiessen polygon method
 (c) Isohyetal method (d) Normal ratio method
127. Hydrograph is a graphical representation of _____.
 (a) Surface run-off
 (b) Ground water flow
 (c) Rainfall
 (d) Catchment response corresponding to a particular storm
128. _____ crop is Rabi crop.
 (a) Wheat (b) Maize (c) Rice (d) Bajra
129. The time between first watering of a crop at the time of its sowing to its last watering before harvesting is called _____.
 (a) Crop period (b) Base period (c) Duty (d) Delta
130. Permanent wilting point is _____.
 (a) a characteristic of the plant
 (b) a soil characteristic
 (c) a soil characteristic modified by the crop
 (d) dependent on soil water plant fertilizer interaction

131. If the depth of water for a crop is 1.20 m for which base period is 120 days, the duty of Canal is _____.
 (a) 86.4 ha/cumec (b) 864 m²/cumec (c) 864 ha/cumec (d) 8.64 ha/cumec
132. The harvesting time of Kharif Crop RICE is _____.
 (a) October – November (b) June – July
 (c) May – June (d) February – March
133. The consumptive use of water for a crop –
 (i) is measured as the volume of water per unit area.
 (ii) is measured as depth of water on irrigated area.
 (iii) may be supplied partly by precipitation and partly by irrigation.
 (a) (i) & (ii) only (b) (ii) & (iii) only (c) (i) & (iii) only (d) (i), (ii) and (iii)
134. The outlet duty is the duty at the head of _____.
 (a) Distributary (b) Branch canal (c) Water course (d) Main canal
135. The factors affecting the duty of water are :
 (i) Method of cultivation
 (ii) System of irrigation
 (iii) Type of crops
 (a) (i) & (ii) only (b) (i) and (iii) only (c) (i), (ii) and (iii) (d) (ii) & (iii) only
136. The crops which are ordinarily grown without irrigation water are called _____.
 (a) Wet crops (b) Irrigated crops (c) Dry crops (d) Seasonal crops
137. Delta of crop means _____.
 (a) Area under crop
 (b) Crop period
 (c) Depth of water required by the crop
 (d) Crop production
138. Water present in the soil which cannot be removed except by heating is called _____.
 (a) Gravity water (b) Hygroscopic water (c) Capillary water (d) Free water
139. The duty of irrigation water will be less if _____. $D = 8.64 \frac{B}{\Delta}$
 (a) Area of irrigation is more (b) Water supply required is less
 (c) Water supply required is more (d) None $D = \frac{Q}{\Delta} = \frac{m^3/sec}{\frac{m}{ha}}$
140. First watering of a crop is called _____.
 (a) Paleo (b) Kor (c) Flooding (d) None of these
141. Crop rotation means _____.
 (a) Giving rest to cultivated land
 (b) Adding manure to land
 (c) Growing different crops in successive season
 (d) Taking only one crop during a year
142. The depth of water required to bring the soil moisture content of a given soil upto its field capacity is called _____.
 (a) Hygroscopic water (b) Equivalent moisture
 (c) Soil moisture deficiency (d) Pellicular water

143. The yield of a well depends on _____.
 (i) Permeability of soil
 (ii) Area of aquifer layer opening into well
 (iii) Actual flow velocity
 (a) Only (i) (b) Only (i) and (ii) (c) Only (ii) and (iii) (d) (i), (ii) & (iii)

144. Greater skin friction _____.
 (a) retards the sinking of well (b) accelerates the sinking of well
 (c) does not affect the sinking of well (d) well sinking is independent of skin friction

145. The geological formation which is neither porous nor permeable, and hence neither contains nor yields ground water is termed as
 (a) Aquiclude (b) Aquifer (c) Aquitard (d) Aquifuge

146. The general Average discharge (yield) of a standard tubewell is about
 (a) 10 to 20 litres/sec (b) 40 to 45 litres/sec
 (c) 100 to 140 litres/sec (d) above 150 litres/sec

147. As compared to shallow wells, deep wells have _____.
 (a) Less discharge (b) Less depth
 (c) More discharge (d) Discharge is independent of well type

148. The yield of well is measured in _____.
 (a) cubic m/hr (b) litres/hr (c) (a) and (b) both (d) m²/day

149. The source of lift irrigation is the nearest _____.
 (1) Canal (2) River (3) Lake
 (a) (1) and (2) (b) (1), (2) and (3) (c) (2) and (3) (d) (1) and (3)

150. The maximum height of lift in a lift irrigation is decided by _____.
 (a) Power limitation (b) Mechanical limitation
 (c) Both (a) and (b) (d) Cost limitations

151. For lift irrigation, water is lifted by
 (a) Gravity (b) Naturally (c) Mechanical means (d) All of these

152. Advantages of lift irrigation are _____.
 (1) Minimum land acquisition problem
 (2) Low water losses
 (3) Low income
 (a) (1) and (2) (b) (2) and (3) (c) (1) and (3) (d) (1), (2) and (3)

153. The double mass curve method is used to determine the _____.
 (a) Intensity of rainfall (b) Number of required rain gauges
 (c) Consistency of rainfall record (d) Average rainfall

154. Stage records measures _____.
 (a) Velocity of flow (b) Water depth in a channel
 (c) Discharge ratio (d) Width of a channel

155. Cyclonic precipitation is caused by lifting of air mass due to _____.

- (a) Pressure difference
- (b) Striking with mountain
- (c) Rising of warmer air in cold surrounding
- (d) Earthquake

156. In a shallow stream, the water velocity is recommended to be measured at a depth which is _____.

- (a) 0.6 of depth of water
- (b) 0.8 of depth of water
- (c) 0.5 of depth of water
- (d) 0.2 of depth of water

157. Which of the following is the most accurate instrument for measuring stream velocity ?

- (a) Twin float
- (b) Surface float
- (c) Partially submerged rod
- (d) Current meter

158. Khosla (1960) gave a formula for the determination of _____.

- (a) monthly run-off
- (b) periodic run-off
- (c) daily run-off
- (d) daily rainfall

159. Streams which behave like stream drains, are called _____.

- (a) perennial streams
- (b) intermittent streams
- (c) ephemeral streams
- (d) flow hydrographs

160. Dicken's formula and Ryve's formula are used for the determination of –

- (a) peak discharge
- (b) monthly run-off
- (c) periodic run-off
- (d) velocity of water

161. Which of the following instruments is not connected to stream flow measurement ?

- (a) Hydrometer
- (b) Echo depth recorder
- (c) Electromagnetic flow meter
- (d) Sounding weight method

162. The minimum land slope required in land irrigated with surface methods of water application is _____.

- (a) 0.01%
- (b) 0.05%
- (c) 0.10%
- (d) 0.15%

163. The size of the furrow stream usually varies between

- (a) 0.1 to 0.5 litre/sec
- (b) 0.5 to 1.0 litre/sec
- (c) 0.5 to 2.0 litre/sec
- (d) 0.5 to 2.5 litre/sec

164. Electrical conductivity of a soil solution is a measure of

- (a) Soil dryness
- (b) Soil iron content
- (c) Soil salinity
- (d) Clay content of the soil

165. A dispersed clay soil has _____.

- (a) high infiltration
- (b) low infiltration
- (c) good workability
- (d) good internal drainage

166. Minor irrigation projects have CCA less than _____.

- (a) 3000 hectare
- (b) 2500 hectare
- (c) 2000 hectare
- (d) 1500 hectare

167. Hygroscopic water is also called _____.

- (a) free water
- (b) adsorbed water
- (c) gravity water
- (d) combined water

168. Paleo irrigation is given _____.
 (a) prior to sowing (b) at the time of sowing
 (c) as the first watering after sowing (d) as the last watering after sowing
169. The surface velocity of any vertical section of a stream is _____.
 (a) not of any use in stream flow measurement.
 (b) smaller than the mean velocity in that vertical section.
 (c) larger than the mean velocity in that vertical section.
 (d) equal to the velocity in that vertical section at 0.6 times the depth.
170. For row crops, the preferred method of irrigation is _____.
 (a) furrow method (b) basin method
 (c) border strip method (d) controlled flooding method
171. For Orchards, preferred method of irrigation is _____.
 (a) check - basin (b) border (c) drip (d) free flooding
172. Ground-water Irrigation accounts for about _____ percent of irrigated area in India.
 (a) 40 (b) 50 (c) 67 (d) 80
173. Mota formation is a/an _____ layer.
 (a) pervious (b) impervious (c) semi-pervious (d) fissured
174. _____ can also be used for drainage purpose.
 (a) surface irrigation (b) lift irrigation
 (c) overhead irrigation (d) sub-irrigation
175. Canal headworks can be -
 (1) diversion headworks
 (2) storage headworks
 (3) distribution headworks
 (a) (1) only (b) (2) only (c) (1) and (2) only (d) (1), (2) and (3)
176. Mostly constructed canal headworks in India are -
 (a) diversion headworks (b) distribution headworks
 (c) storage headworks (d) None of these
177. The initial cost of headworks in boulder stage is generally _____ than that in the alluvial stage.
 (a) lower (b) higher (c) almost same (d) very high
178. Construction of temporary bunds is generally not possible in the _____ stage of River.
 (a) flow (b) boulder (c) alluvial (d) dry
179. In _____ reach of the river, loss of water through sub-soil flow is much less.
 (a) silty (b) alluvial (c) boulder (d) sandy
180. Discharge through a rectangular notch is equal to (where symbols have their usual meanings)
 (a) $\frac{8}{15} C_d L H^{3/2}$ (b) $\frac{8}{15} C_d L H^{5/2}$ (c) $\frac{2}{3} C_d L H^{5/2}$ (d) $\frac{2}{3} C_d L H^{3/2}$