

MAGDALINE COACHING CENTRE (mc²)
AGRICULTURAL ENGINEERING
(Paper-1 JUNE)
ANSWE KEY IS AT THE BOTTOM

1. The quantity of water transpired by the plants during their growth or retained in the plant tissue, plus moisture evaporated from the surface of the soil and the vegetation is known as
 - a) Potential evaporation
 - b) Evapotranspiration
 - c) Transpiration
 - d) None of the above

2. An isohyet is a line joining points having
 - a) Equal evaporation value
 - b) Equal barometric pressure
 - c) Equal evapotranspiration value
 - d) Equal rainfall depth

3. The detachment and transportation processes on the inter rill areas occur essentially independent of
 - a) Rill erosion
 - b) Sheet erosion
 - c) Splash erosion
 - d) Stream bank erosion

4. The surface velocity at any vertical section of a stream is
 - a) Equal to the velocity in that vertical at 0.6 times the depth
 - b) Smaller than the mean velocity in that vertical section
 - c) Greater than the mean velocity in that vertical section
 - d) None of the above

5. A river is said to be uniform section if in its section
 - a) A segment of circle can be fitted
 - b) A parabolic section can be fitted
 - c) A rectangular section can be fitted
 - d) All of the above

6. Water balance method gives satisfactory result on ET estimation for
 - a) Smaller watershed
 - b) Larger watershed
 - c) Cropped areas
 - d) Forest areas

7. Rain splash erosion is normally pronounced on the
 - a) Upper parts of slopes
 - b) Ridges
 - c) Elevated tracts of the land
 - d) All of the above

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8. Quantity of soil movement through wind varies as the
 - a) Square of the particle diameter
 - b) Square root of the particle diameter
 - c) cube of the particle diameter
 - d) square of wind velocity

9. Measurement of precipitation is expressed as
 - a) Depth to which rainfall water would stand on an area
 - b) Volume to which rainfall water would form on an area
 - c) Depth per unit area
 - d) All of the above

10. Indirect runoff includes
 - a) Interflow flow only
 - b) Base flow only
 - c) Delayed interflow
 - d) Both a & b

11. The minimum thickness of gravel pack for a well construction is
 - a) 7.5 mm
 - b) 7.5 cm
 - c) 5 cm
 - d) 0.5 mm

12. Gross irrigation requirement is given by
 - a) Consumptive use + conveyance losses
 - b) Field irrigation requirement + conveyance losses
 - c) Net irrigation requirement + conveyance losses
 - d) Consumptive use + field application losses

13. Depth-Area-Duration curves of precipitation at the station would normally be
 - a) Curves, concave upwards, with duration increasing outwards
 - b) Curves, concave downwards, with duration increasing outwards
 - c) Curves, concave upwards, with duration decreasing outwards
 - d) Curves, concave downwards, with duration decreasing outwards

14. If the time of concentration is more than the rainfall duration, then the rational method will
 - a) Calculate the runoff volume
 - b) Calculate the runoff rate
 - c) Calculate the peak runoff rate
 - d) Not able to calculate the peak runoff rate

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15. The momentum of raindrop compared to that of runoff is
- 30 times more
 - 100 times more
 - 100 times less
 - 250 times more
16. Which of the soil characteristics is not considered for determination the land capability?
- Soil depth
 - Soil horizon
 - Soil texture
 - Permeability
17. In which of the following watershed as intense rainfall will cause peak runoff at outlet, very shortly
- Small watershed
 - Large watershed
 - Black soil watershed
 - Arid watershed
18. Curve number estimates the direct runoff for
- AMC-I
 - AMC-II
 - AMC-III
 - All of the above
19. If the major part or the entire ponding of water is achieved by the raised crest and smaller part or nil part of it is achieved by the shutters then this barrier is known as
- Barrage
 - River regular
 - Weir
 - Afflux
20. The uniformity coefficient of sprinkler irrigation is (as per BIS)
- 75 %
 - 80 %
 - 85 %
 - 90 %
21. An aquifer which is overlain by impervious layer and top is open to atmosphere, is called as
- Confined aquifer
 - Water table aquifer
 - Unconfined aquifer
 - Both b & c

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22. When the reservoir is full, the maximum compressive force in gravity dam is produced at
- At the toe
 - At the heel
 - Within the middle third of base
 - At centre of base
23. Crop ratio is defined as the ratio of area irrigated
- In Rabi season to kharif season
 - In kharif season to rabi season
 - Under perennial crop to non-perennial crops
 - Under perennial crop to total area
24. Capillary movement is always from a
- Lower suction region to higher suction region
 - Higher suction region to lower suction region
 - Higher elevation to lower elevation
 - None of the above
25. Which of the following are not the direct methods for determination of stream flow?
- Area-velocity
 - Dilution
 - Weirs
 - None of the above
26. The prism storage in a river reach during the passage of flood wave is
- a constant
 - function of inflow only
 - function of outflow only
 - Both b & c
27. The time interval between centre of mass of rainfall to the centre of mass of hydrograph is called as
- Time to peak
 - Lag time
 - Time of concentration
 - Runoff duration
28. Stage discharge curve represents the relationship between
- Gauge height and stream flow rate
 - Gauge height and flow velocity
 - Stream flow depth and time
 - Both a & b

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29. The admissible soil loss under normal condition lies in the range of
- 1-2 t/ha/yr
 - 2-5 t/ha/yr
 - 5-10 t/ha/yr
 - 10-20 t/ha/yr
30. In an isotropic soil, the flow path is
- Always perpendicular to the equipotential line
 - Along the line of force
 - Along the lowest force path
 - Not always perpendicular to the equipotential line
31. If the water consumed is more, duty will be
- Less
 - More
 - Same
 - None of the above
32. The major factor influencing the efficiency of a well-designed sprinkler irrigation system is
- Operating pressure
 - Wind velocity
 - Sprinkler spacing
 - Diameter of the sprinkler lateral
33. The passage of a flood hydrograph through a reservoir or channel is the case of
- Steady flow
 - Unsteady flow
 - Uniform flow
 - Critical flow
34. Root growth is very good in the soil, when
- Water table is in root zone
 - Water table is below root zone
 - Soil is highly permeable
 - Both b & c
35. The dimensionless number of uses in geometric similarity is
- Mach number
 - Reynold number
 - Froude number
 - Nusselt number

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36. The difference between normal and minimum free board is called as
- Surcharge
 - Settlement allowance
 - Seepage factor
 - None of the above
37. A point rainfall indicates the rainfall
- Of a watershed
 - Measured by rain gauge
 - Measured by symon type rain gauge
 - All the above
38. The convergence of stream line near the wall screen results in _____well loss
- Low
 - Higher
 - No effect
 - None of the above
39. The uplift pressure on the roof of an inverted syphon will be maximum when
- Drain is running with H.F.L
 - Drain is running dry
 - Canal is running with F.S.L
 - Canal is running dry
40. Mean precipitation over an area is best obtained from gauged amounts by
- Arithmetic mean method
 - Thiessen method
 - Weighted isohyetal method
 - All of the above
41. The primary objective of graded board base terrace is to
- Conserve moisture in the soil
 - Drain excess water from the area
 - Control soil erosion
 - All of the above
42. In a structure, when eccentricity (e) is less than $b/6$, the minimum stress will be
- In compressive nature
 - In tensile nature
 - Zero
 - None of the above
43. The water ponding depth in infiltrometer should correspond the
- Water depth, expected during border irrigation
 - Water depth, expected during furrow and check basin irrigation

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- c) Total water to be infiltrated
 - d) All of the above
44. Pick up the incorrect statement from the following:
- a) At two meteorologically homogeneous stations, the average annual precipitation is same
 - b) If the average annual precipitation at two places is same, these are meteorologically homogeneous stations
 - c) Neither a & b
 - d) Both a & b
45. The diameter of modified Class A pan is
- a) 1210 mm
 - b) 1220 mm
 - c) 1230 mm
 - d) 1240 mm
46. A stilling well is required when the stage measurement is made by
- a) Bubble gauge
 - b) Float gauge recorder
 - c) Vertical staff gauge
 - d) Incline staff gauge
47. Sloughing type stream bank erosion takes place during
- a) Influent flow in stream
 - b) Effluent flow in stream
 - c) Intermittent flow in stream
 - d) Both a & b
48. Most commonly, the side slope of dugout farm pond is kept as
- a) 1:2
 - b) 2:1
 - c) 3:2
 - d) 1:1
49. To determine the discharge from parshal flume
- a) Only u/s flow depth is measured
 - b) Both u/s and d/s flow depth are measured
 - c) Only d/s flow depth is measured
 - d) None of the above
50. The ratio of total quantity of water supplied to a crop during its base period to the area is called
- a) Duty

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- b) Delta
 - c) Consumptive use
 - d) Crop factor
51. Most critical condition for stability of d/s slope of earth fill dam occurs, when
- a) Reservoir is in full condition
 - b) Reservoir contain half of water of its capacity
 - c) Average seepage is at the maximum rate
 - d) Earth quake takes place
52. In drip irrigation design, the design criteria are generally based on an emitter flow variation of
- a) < 20 per cent
 - b) > 20 per cent
 - c) < 10per cent
 - d) > 10per cent
53. Water held in soil pores is known as
- a) Pore water
 - b) Capillary water
 - c) Soil water
 - d) All of the above
54. A well-designed irrigation system should satisfy the condition that
- a) Irrigation period is not greater than the irrigation frequency
 - b) Irrigation frequency is not greater than irrigation period
 - c) Irrigation period is equal to irrigation frequency
 - d) None of the above
55. In super critical flow, as the depth of flow increase, the specific energy
- a) Increases
 - b) Decreases
 - c) Does not change
 - d) None of the above
56. The depth of water required to bring the soil moisture content of a given soil up to its field capacity is called
- a) Hygroscopic water
 - b) Equivalent moisture
 - c) Soil moisture deficiency
 - d) Pellicular water
57. A unit hydrograph has one unit of
- a) Peak discharge
 - b) Direct runoff

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- c) Indirect runoff
 - d) Rainfall duration
58. Grassed water ways are generally laid out for
- a) Irrigation channel
 - b) Drainage of high velocity
 - c) Gully control
 - d) All of the above
59. Area of parabolic shape grassed water ways is given by
- a) $Bd + zd^2$
 - b) $\frac{2}{3} td$
 - c) Zd
 - d) All of the above
60. The diversion drains should be located at stable slope to
- a) Prevent sloughing
 - b) Reduce soil loss
 - c) Control soil erosion
 - d) All of the above
61. At the wind velocity greater than threshold value, the vibration of particles will be
- a) Zero
 - b) Less
 - c) More
 - d) None of the above
62. Keeping the hydraulic properties as constant, doubling the diameter of well screen in a phreatic aquifer, well discharge will increase about
- a) 5 %
 - b) 10 %
 - c) 15 %
 - d) 20 %
63. Soil conservation practices always reduce the
- a) Soil detachment
 - b) Soil entrainment
 - c) Soil transportation
 - d) All of the above
64. The gauge used to measure the depth of flow over a weir is located upstream of the weir at the distance of about

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- a) Twice the approximate head
 - b) Thrice the approximate head
 - c) Four the approximate head
 - d) Five the approximate head
65. In a fully penetrating well in confined aquifer depth of the observation well should be up to
- a) Top of the well screen
 - b) Centre of the well screen
 - c) Bottom 2/3rd of the well screen
 - d) Bottom of the well screen
66. WHP of centrifugal pump at 15 litres/sec capacity and 30 meters total head will be
- a) 4
 - b) 6
 - c) 8
 - d) 10
67. Drip system can be used with
- a) Low available discharge
 - b) Medium available discharge
 - c) High available discharge
 - d) All of the above
68. On the water table depth map at any specific point, the difference in elevation between the surface contour and ground water contour, indicates
- a) Water table depth
 - b) Artesian head
 - c) Piezometric head
 - d) Both a & c
69. In determination of curve number, the hydrological group C belong to
- a) Low runoff potential
 - b) Moderate runoff potential
 - c) Moderately high runoff potential
 - d) High runoff potential
70. The irrigation canals are generally aligned along
- a) Ridge line
 - b) Straight line
 - c) Contour line
 - d) Valley line
71. In saline soils, the suitable block for measurement of moisture content is

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- a) Gypsum block
 - b) Nylon block
 - c) Fibre glass block
 - d) All of the above
72. If a soil absorbs water slowly, then relatively
- a) Wide furrows are recommended to construct
 - b) Shallow furrows are recommended to construct
 - c) Deep and narrow furrows are recommended to construct
 - d) Both a & b
73. Erosivity refers to the potential ability of
- a) Soil to get erode
 - b) Wind to erode particles
 - c) Rain to erode particles
 - d) Both b & c
74. When drop height exceed 4 m and there is possibility of silt accumulation in farm pond then most suitable mechanical spillway to use is
- a) Drop spillway
 - b) Drop inlet spillway
 - c) Chute spillway
 - d) All of the above
75. Factor C for barren lands is equal to
- a) 0
 - b) 1
 - c) 1.5
 - d) 2
76. In surface creep process the transportation of soil particle varies from
- a) 7 to 25%
 - b) 3 to 38%
 - c) 55 to 72%
 - d) None of the above
77. For the estimate of high floods in fan shaped catchment, the formula used is
- a) Dicken's formula
 - b) Ryve's formula
 - c) Inglis formula
 - d) None of this

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78. For design of drainage system, the important study component under soil investigation is
- Soil profile
 - Exchangeable sodium
 - Amount of soluble salt
 - All of the above
79. The cone of depression gets stabilized, when
- Pumping is done with low rate
 - Pumping is done for a longer time to reach a steady state condition
 - Recharge of aquifer is equal to the pumping rate
 - All of the above
80. The use of unit hydrograph for estimating floods is generally limited to catchments of size less than
- 500 ha
 - 5000 ha
 - 500 km²
 - 5000 km²
81. Clark has used the following model for routing analysis of its IUH model
- Reservoir routing
 - Good rich method
 - Muskingum routing method
 - Pul's method
82. Sediment delivery ratio is always
- Less than 1
 - More than 1
 - Equal to 1
 - All of the above
83. The geological actions such as abrasion, attrition and solution are responsible to cause
- Particle detachment
 - Particle transportation
 - Particle deposition
 - All of the above
84. When a well is dug in water table aquifer the static water level in the well stands at
- Upper elevation of water table
 - Lower elevation of water table
 - Same elevation of water table

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- d) None of the above
85. A soil having $EC < 4$, $pH > 8.5$ and $ESP > 15$ is known as
- Saline soil
 - Sodic soil
 - Saline-alkali soil
 - None of the above
86. For an annual crop, the consumptive use is greater during
- Emergence period and development of complete vegetative cover
 - Maximum vegetative cover with abundant soil moisture
 - Crop maturation stage
 - All of the above
87. Stream size in border irrigation is generally expressed as
- Rate of flow per unit border length
 - Rate of flow per unit border width
 - m^3/s
 - All of the above
88. The difference in levels between the top of capillary zone and the water table is
- Zero
 - Negative
 - Positive
 - Difficult to tell
89. In laminar flow through a pipe discharge varies
- Linearly as the viscosity
 - As the square of radius
 - Inversely as the pressure drop
 - Inversely as the viscosity
90. USLE does not predict
- Rill erosion
 - Gully erosion
 - Sheet erosion
 - None of the above
91. Table top terrace are known as
- Irrigated terraces
 - Paddy terraces
 - Level terraces
 - All of the above
92. The logarithm to the base 10 of the numerical value of negative pressure of the soil moisture expressed in cm of water is
- pH
 - pF

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- c) Base exchange capacity
 - d) None of the above
93. The branch canal generally carries a discharge from
- a) 10 to 8.5 cum/sec
 - b) 8.5 to 4cum/sec
 - c) 4 to 2cum/sec
 - d) 1.5 to 0.5cum/sec
94. At critical flow condition, the discharge is maximum and specific energy is
- a) Maximum
 - b) Minimum
 - c) No change
 - d) All of the above
95. As compared to clays and other colloids, the sands and silts have
- a) Much less surface area
 - b) More surface area
 - c) Much less specific surface
 - d) Both a & c
96. If the curvature in a varied flow is large and depth changes appreciably over a short length, the flow is called as
- a) Steady rapidly varied flow
 - b) unsteady rapidly varied flow
 - c) Unsteady gradually varied flow
 - d) None of the above
97. Mechanism of lifting of air mass to form cloud is associated to
- a) Frontal lifting
 - b) Orographic lifting
 - c) Convective lifting
 - d) All of the above
98. Levees are designed for the return period of
- a) 50 years
 - b) 25 years
 - c) 10 years
 - d) 15 years
99. Contour bunding is used for permeable soils having a slope
- a) Less than 6 %
 - b) More than 6%
 - c) 12 %

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- d) All of the above
100. Excess water from trapezoidal bunds during water harvesting is released from
- Outlet made in the bund
 - Tip of the bund
 - Side of the bund
 - None of the above
101. Hydraulic conductivity will be higher, when
- Straight pore channels are available in soil
 - Uniform pore channels with larger diameter are available in the soil
 - Non-uniform pore channels with smaller diameter are available in the soil
 - Both a & b
102. A hydraulic jump in a control meter will be formed above the control, if its original
- Depth is more than critical depth
 - Depth is less than the critical depth
 - Depth is equal to critical depth
 - None of the above
103. The value of hydraulic conductivity gets rapidly reduced due to
- Entrapped air
 - Saturation
 - Existence of hard pan
 - All of the above
104. The intensity of pressure for a liquid at its free surface in open channel is equal to
- Atmospheric pressure
 - Zero pressure
 - Suction head
 - None of the above
105. Relative tolerance of crop salinity is
- Barley > Alfalfa > Sweet potato > Sugarcane
 - Barley > alfalfa > Sugarcane > Sweet potato
 - Alfalfa > Sweet potato > Barley > Sugarcane
 - Alfalfa > Barley > Sugarcane > Sweet potato
106. Spacing of spur is equal to
- 7 times the vertical projection
 - 3 times the stream water depth
 - 0.5 times the stream width
 - All of the above
107. To reduce salinity by leaching the best method of irrigation is
- Sprinkler irrigation

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- b) Furrow irrigation
 - c) Check flooding
 - d) Drip irrigation
108. Consumptive use of crop is defined as the
- a) Total amount of water applied to the crop during its life period
 - b) Total amount of water applied minus the total rainfall during its life period
 - c) Total amount of water utilized by the crop for its evapotranspiration requirement
 - d) All of the above
109. The primary objective of level bench terrace is to
- a) Conserve water and soil erosion
 - b) Reduce runoff
 - c) Make steeply level cultivable
 - d) All of the above.
110. The Froude number of steady flows in permanent structure is
- a) 1 - 1.7
 - b) 1.7 – 2.5
 - c) 2.5 – 4.5
 - d) 4.5 – 9
111. The specific storage is
- a) Storage coefficient per aquifer depth
 - b) Specific capacity per unit depth of aquifer
 - c) Specific yield per unit area
 - d) Porosity-specific duration
112. The downward movement of water through saturated or nearly saturated soil in response to force of gravity is
- a) Infiltration
 - b) Percolation
 - c) Seepage
 - d) All of the above
113. V-shaped gullies are developed, when
- a) Flow velocity is high but runoff volume is less
 - b) Flow velocity is less but runoff volume is more
 - c) Flow velocity is less and runoff volume is also less
 - d) Flow velocity is more and runoff volume is also more

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114. Uniformity coefficient for gravel envelopes is the ratio of
- D60/D10
 - D10/D60
 - D60 filter/D60 base
 - D60 base/D60 filter
115. The velocity of flow in poor grassed diversion is
- 0.9-1.2 m/s
 - 1.5-2 m/s
 - 2-2.5 m/s
 - None of the above
116. The flow of water after spilling over the weir crest in chute spillway and side channel spillway respectively are
- At right angle and parallel to weir crest
 - Parallel and at right angle to weir crest
 - Parallel to weir crest in both
 - At right angle to weir crest in both
117. For supersonic flow, if the area of flow increases, then
- Velocity decreases
 - Velocity increases
 - Velocity is constant
 - None of the above
118. Terrace is constructed to reduce
- Soil erosion
 - Soil loss
 - Gully erosion
 - Both a & b
119. The muskingum method of flood routing assumes the storage S is related to inflow rate I and outflow rate Q of a reach as $S =$
- $K [xI + (1-x) Q]$
 - $K [xI - (1-x) Q]$
 - $K [xQ + (1-x) I]$
 - None of the above
120. Which water way is considered as the most economical c/s of waterways?
- Triangular
 - Rectangular
 - Trapezoidal
 - Parabolic

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121. A geological formation through which only seepage is possible is called
- Aquifuge
 - Aquitard
 - Aquiclude
 - Perched aquifer
122. In sprinkler irrigation, the irrigation interval can be changed by
- Amount of water applied per shift
 - Altering the hours of set
 - Growing different categories of crops in the same field
 - All of the above
123. In order to avoid a correction for effect of capillarity in manometers used for measuring pressure, the diameter of the tube should be
- Less than 3 mm
 - Equal to 5 mm
 - More than 3 mm but less than 5 mm
 - Greater than or equal to 6 mm
124. Flow net can drawn for
- Irrotational flow only
 - Rotational flow only
 - Neither Rotational flow and Irrotational flow
 - Both a & b
125. A localized body above the water table in an unconfined aquifer is known as
- Unconfined aquifer
 - Confined aquifer
 - Perched aquifer
 - Artesian aquifer
126. Volume of precipitated water trapped in depressions is called
- Depression storage
 - Trapped water
 - Ponding water
 - All the above
127. The line representing equal slope are called
- Isosines
 - Isohytes
 - Isochrones
 - None of the above

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128. For determination of irrigation water requirement, the maximum rooting depth is considered in case of
- Shallow rooted crops
 - Long tap rooted crops
 - Fibrous root crops
 - All of the above
129. The live storage requirement for a reservoir is to be determined by
- Topographical survey
 - Annual demand
 - Double mass curve analysis
 - Mass curve analysis
130. At critical flow condition, the discharge is maximum and specific energy is
- Maximum
 - Minimum
 - No change
 - All of the above
131. Least effective crops to reduce soil erosion from a field are
- Vegetable
 - Surface sealing
 - Fruit crops
 - Coconut
132. The LUCC-VII is symbolized by the colour
- Yellow
 - Red
 - Brown
 - Purple
133. Toricelli formula is given by
- $q = C_d \sqrt{2gh}$
 - $q = C_d A \sqrt{2gh}$
 - $q = C_d A \sqrt{mv^2}$
 - None of the above
134. Grade of open ditches is fixed based on
- Outlet elevation
 - Outlet distance from the lowest point
 - Depth of ditch
 - All of the above

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135. In furrow, the hydraulic resistance is mainly offered by
- Crops
 - Wetted soil surface
 - Soil clods
 - All of the above
136. In rational method, the runoff coefficient represents
- Loss of water from various source
 - Integral effect of climatic losses
 - Integral effect of watershed losses
 - All of the above
137. Whenever the available natural ground slope is steeper than the designed bed slope of the channel, the difference is adjusted by constructing
- CHR
 - Siphon
 - Aqueduct
 - Falls
138. Spacing of mole drain varies from
- 2 to 5 m
 - 5 to 7.5 m
 - 7 to 15 m
 - 2 to 10 m
139. The drainage water intercepting the canal can be disposed of by passing the canal below the drainage in
- Aqueduct and syphon aqueduct
 - Aqueduct and super passage
 - Super passage and canal syphon
 - Level crossing
140. The meander pattern of a river is developed by
- Average discharge
 - Dominant discharge
 - Maximum discharge
 - Critical discharge
141. A homogeneous type earth fill dam is made of
- Same kind of materials
 - Different kind of materials
 - Homogeneous materials
 - All of the above

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142. The choice on type of bund to be constructed in a field is based on
- Annual rainfall
 - Land slope only
 - Man power availability
 - All of the above
143. The flow which is independent of the d/s water level is known as
- Free flow
 - Submerged flow
 - Flood flow
 - All of the above
144. Cantilever type outlet is adopted when
- Discharge through the spillway is more than 3 m³/s
 - Drop more than 3 m
 - Soil strata below the structure is unstable
 - Both a & b
145. The DRH (m³/s) generated by flood hydrograph of 1400 m³/s with base flow of 100 m³/s is
- 1100
 - 1200
 - 1300
 - 1400
146. Vertical distance between crest of mechanical spillway and top of embankment is called
- Net free board
 - Gross free board
 - Free board
 - All of the above
147. Which of the following is least suitable for earthen dam?
- Chute spillway
 - Ogee spillway
 - Drop spillway
 - Drop inlet spillway
148. The minimum pumping time required for an accurate estimate of specific yield of an unconfined aquifer, depends on
- Aquifer transmissivity
 - Void ratio
 - Porosity
 - All of the above

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149. Constant water table lysimeter and non-weighing type lysimeter are suitable to measure the ET in the areas of
- Deep water table condition
 - High water table conditions
 - Perched water table conditions
 - All of the above
150. If contribution of interflow is non-significant, then value of recession constant for interflow is
- Unity
 - Less than 1
 - More than 1
 - Zero
151. Area of effective rainfall hydrograph represents
- Depth of effective rainfall
 - Rainfall depth
 - Volume of direct runoff
 - All of the above
152. The dimension of intrinsic permeability is
- $M^0L^2T^{-1}$
 - $M^0L^2T^0$
 - $M^0L^2T^{-2}$
 - None of the above
153. The soil moisture tension at field capacity and permanent wilting point is
- 1/10 to 1/3 and 15 atm
 - 1/3 to 1/10 and 15 atm
 - 1/10 to 1/3 and 60 atm
 - 1/3 to 1/10 and 60 atm
154. The head loss will be greater, when the pipe section is
- Diverged/converged
 - Expanded/contracted
 - Smooth
 - All of the above
155. For proportional outlet, the flexibility is
- Zero
 - Between zero and 1
 - 1
 - Greater than 1

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156. A high frequency irrigation requires
- a) Less leaching requirement
 - b) More leaching requirement
 - c) Zero leaching requirement
 - d) Moderate leaching requirement
157. Shelterbelt protects the distance of d/s side equal to
- a) Tree's height
 - b) Less than tree height
 - c) More than tree height
 - d) All of the above
158. In drip irrigation, water flows from the emission points through the soil by
- a) Infiltration
 - b) Percolation
 - c) Capillarity
 - d) Capillarity and gravity
159. There will not be the movement of soil water, when
- a) Unsaturated permeability is zero
 - b) Saturated permeability is zero
 - c) Unsaturated permeability is very high
 - d) None of the above
160. Reshaping of field surface to a planned grade is called as
- a) Land grading
 - b) Land smoothing
 - c) Land levelling
 - d) All of the above
161. Barchens type crescent sand dunes have
- a) Convex crescent toward windward side
 - b) Convex crescent toward leeward side
 - c) Concave crescent toward windward side
 - d) Concave crescent toward leeward side
162. A falling raindrop detaches the soil particles from ground surface by its
- a) Terminal velocity
 - b) Kinetic energy
 - c) Potential energy
 - d) Rainfall intensity

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163. A wooden U-leveller is used for
- a) Check basin preparation
 - b) Border preparation
 - c) Providing longitudinal slope in the field
 - d) All of the above
164. The value of curve number for water surface is
- a) 0
 - b) 10
 - c) 25
 - d) 100
165. Hydraulic jump takes place, when flow enters from
- a) Super critical to sub critical
 - b) Sub critical to super critical
 - c) Critical state to super critical
 - d) Critical state to sub critical
166. Width of contour strip crops depends on
- a) Degree and length of land slope
 - b) Size of farm equipment
 - c) Allowable soil loss, soil types and arrangement of crops grown in rotation
 - d) None of the above
167. Horizontal blanket system of drainage in earth dam is found more suitable for a dam of
- a) Low height
 - b) Moderate height
 - c) Greater height
 - d) All of the above
168. Orifice behaves like a weir, when it flows
- a) Full
 - b) Partially
 - c) Under submerged condition
 - d) None of the above
169. The most efficient indigenous water lifting device is
- a) Don
 - b) Swing basket
 - c) Archemedian screw
 - d) Hand pump

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170. Infiltration is the
- a) Movement of water through the soil
 - b) Absorption of water by soil surface
 - c) Both a & b
 - d) None of the above
171. In coarse textural soil, the coefficient internal friction at any moisture content
- a) Decreases with compaction
 - b) Increases with compaction
 - c) Remain constant
 - d) All of the above
172. The ratio of basin area to square of basin length is called
- a) Form factor
 - b) Circulatory ratio
 - c) Elongation ratio
 - d) None of the above
173. The marginal bunds are constructed
- a) Between two side contour bunds
 - b) Between two side bunds
 - c) At field boundary
 - d) At top of the area
174. The effect of contouring on soil loss is incorporated in
- a) Factor-p of USLE
 - b) Factor-c of USLE
 - c) Factor k of USLE
 - d) Factor-s of USLE
175. Gully development is accomplished under
- a) Two stages
 - b) Three stages
 - c) Four stages
 - d) Five stages
176. Wetting front refers to
- a) Capillary fringe
 - b) Aeration zone
 - c) Moisture content of foremost part is the same as the original soil
 - d) Both a & c

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177. Recession limb is independent of
- a) Storm characteristic
 - b) Watershed characteristic
 - c) Drainage network
 - d) Both a & b
178. In LUCC system, the sub-class indicates the problem of
- a) Soil type
 - b) Major land use
 - c) Slope
 - d) Slope length
179. During full reservoir condition, the failure of dam take place in the form of
- a) Sloughing
 - b) Deep slide only
 - c) Shallow slide only
 - d) Both b & c
180. The most efficient equipment for making ridges in the layout of fields for irrigation borders and large size check basins are
- a) Bund former
 - b) A-frame ridger
 - c) Disc ridger
 - d) Double mould board plough
181. For a soil with moderately low to moderately high infiltration rate, the best method of irrigation is
- a) Border method
 - b) Check basin method
 - c) Sprinkler method
 - d) All of the above
182. Along the direction of flow, the base of a parshall flume at the throat is
- a) Sloping upward
 - b) Sloping downward
 - c) Narrowed
 - d) Broadened
183. Infiltration index is the most commonly used method for determination of the
- a) Infiltration rate
 - b) Cumulative infiltration
 - c) Abstraction from precipitation
 - d) Consumptive use

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184. Continuity expression is principle of conservation of
- a) Energy
 - b) Mass
 - c) Momentum
 - d) None of the above
185. The flow is laminar when average flow velocity is
- a) Equal to critical velocity
 - b) Below critical velocity
 - c) Above critical velocity
 - d) None of the above
186. For constructing vegetative spurs, the material employed is
- a) Live branches of trees
 - b) Grasses
 - c) Wooden poles
 - d) All of the above
187. The percolation dams for water harvesting are constructed at
- a) Gully bed with depression
 - b) Gully head
 - c) Depressed point in the watershed
 - d) Any point in the watershed
188. Sediment yield will be higher from the watershed dominated by
- a) Splash erosion
 - b) Sheet erosion
 - c) Rill erosion
 - d) Both a & b
189. Chute spillways are constructed at
- a) Gully head
 - b) Along the gully bed
 - c) Low height
 - d) Both a & b
190. Soil water availability in deep soil volume is mostly available for
- a) Transpiration
 - b) Soil evaporation
 - c) Deep percolation
 - d) Seepage

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191. Slope steepness factor (s) in USLE reflects the influence on
- a) Soil detachment
 - b) Soil deposition
 - c) Soil transportation
 - d) All of the above
192. Line of canal is required when
- a) The water table is above FSL of canal
 - b) The water table is below the bed of canal
 - c) There is a natural impervious stratum below the bed
 - d) None of the above
193. In case of hilly terrain, the laterals should be laid
- a) Along the slope
 - b) Along the contour
 - c) Across the contour
 - d) Along the grade
194. Soil amendment like gypsum is necessary for reclaiming which type of soil
- a) Saline
 - b) Sodic
 - c) Vertisols
 - d) All of the above
195. Under velocity area method of flow measurement, the velocity of flow is measured by
- a) Current meter
 - b) Float
 - c) Sounding rod
 - d) All of the above
196. On hill face, the rills are formed
- a) Adjacent to peak of hill
 - b) At some distance down from the hill peak
 - c) At foot hill portion
 - d) Both a & b
197. In case of earthen embankment, the allowance as freeboard is usually given from
- a) 20 – 30 cm
 - b) 30 – 50 cm
 - c) 60 – 70 cm
 - d) 100 – 120 cm

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198. Which channel has the highest hydraulic radius
- a) Triangular
 - b) Parabolic
 - c) Trapezoidal
 - d) Flatter
199. Temporary land limitations are
- a) Soil nutrient and drainage impedance
 - b) Soil colour and salt content
 - c) Soil depth and cropping system
 - d) All of the above
200. The loss or decline of soil fertility due to crop removal or removal of nutrients by eluviation on water passing through the soil is called
- a) Soil degradation
 - b) Soil depletion
 - c) Soil loss
 - d) All of the above

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Answer keys

1	b	2	d	3	a	4	c	5	d
6	b	7	d	8	b	9	a	10	b
11	a	12	b	13	b	14	d	15	a
16	c	17	a	18	d	19	c	20	c
21	d	22	a	23	a	24	a	25	c
26	c	27	b	28	a	29	c	30	d
31	a	32	b	33	b	34	b	35	c
36	a	37	b	38	b	39	a	40	c
41	b	42	a	43	a	44	b	45	b
46	b	47	b	48	d	49	a	50	a
51	c	52	a	53	b	54	a	55	b
56	c	57	b	58	b	59	b	60	a
61	a	62	b	63	c	64	c	65	b
66	b	67	d	68	a	69	c	70	a
71	a	72	c	73	d	74	b	75	b
76	a	77	c	78	a	79	c	80	d
81	c	82	a	83	a	84	a	85	b
86	a	87	b	88	c	89	d	90	b
91	d	92	b	93	b	94	b	95	a
96	a	97	d	98	c	99	a	100	b
101	b	102	b	103	a	104	b	105	b
106	a	107	c	108	c	109	a	110	d
111	a	112	b	113	a	114	c	115	a
116	a	117	a	118	b	119	a	120	d
121	b	122	b	123	d	124	a	125	c
126	a	127	a	128	b	129	b	130	b
131	d	132	c	133	a	134	d	135	b
136	c	137	d	138	a	139	c	140	b
141	a	142	a	143	a	144	c	145	c
146	b	147	b	148	a	149	b	150	a
151	a	152	b	153	a	154	b	155	c
156	a	157	c	158	d	159	a	160	a
161	a	162	b	163	a	164	a	165	a
166	d	167	b	168	a	169	c	170	a
171	b	172	a	173	c	174	a	175	c
176	a	177	a	178	b	179	d	180	c
181	a	182	a	183	c	184	b	185	b
186	a	187	b	188	c	189	a	190	a
191	c	192	d	193	b	194	b	195	a
196	b	197	c	198	a	199	a	200	b