(Answer ALL questions)

56. The branch of hydrology which deals with soil moisture is known as
    1. Pedohydrology
    2. Limnology
    3. Potamology
    4. Geohydrology

57. Evapo-transpiration is
    1. Water equivalent of moisture contained in air which is lost through evaporation
    2. Unaccounted loss of water by evaporation at a location
    3. Evaporation from plants in a catchment area
    4. The total evaporation and transpiration from the catchment area

58. The movement of water in a channel I influenced by
    1. Force of gravity
    2. Slope
    3. Friction of water with channel bed
    4. All of the above

59. Darcy's law is used for
    1. Open channel flow
    2. Diffusion
    3. Underground motion of water
    4. Evaporation of surface water

60. The infiltration capacity is
    1. Maximum rate of accumulation of water in an area
    2. Precipitation – Evaporation per unit time
    3. Maximum rate at which water enter the soil
    4. Rainfall water entering the subsoil

61. A Channel in which water flows with free surface constructed across a canal, drain or river may be below or above the ground level is called
    1. Conduit
    2. Pen stock
    3. Aqueduct
    4. Siphon

62. Most of the formula for flood discharge is of the form
    1. $Q = CA^n$
    2. $Q = Ce^n$
    3. $Q = C\log_e^{(n)}$
    4. $Q = C + A + n$

63. Evaporation from water surface increases with all of the following EXCEPT
    1. Temperature
    2. Salinity
    3. Aridity of the region
    4. Wind velocity

64. Identify the correct statement
    1. Frictional resistance in a pipe decreases with density of the fluid
    2. Frictional resistance in a pipe increases with the square of velocity
    3. Frictional resistance in a pipe is dependent on the fluid pressure
    4. Frictional resistance in a pipe is independent on surface roughness

65. A hot wire anemometer is used for the measurement of
    1. Pressure of gases
    2. Velocity of gases
    3. Viscosity of gases
    4. Viscosity of liquids

76. The seasonal water requirement of sugarcane is
1. 500-700 mm
2. 400-600 mm
3 700-1300 mm
4. 1500-2500 mm

77. The ratio of crop yield to the volume of water used to produce the crop is called
1. Crop water use efficiency
2. Distribution efficiency
3. Water use efficiency
4. Irrigation efficiency

78. Chemical clogging in drip system is mainly due to
1. Dissolved chemicals in the water
2. Calcium carbonate deposits
3. Calcium sulphate and sodium salts deposits
4. All the above

79. Field Capacity of a soil depends upon
1. Porosity of soil
2. Capillary tension of soil
3. Dissolved chemicals in water
4. Both (1) and (2) above

80. The best alignment for a canal is when it is aligned along
1. Straight line
2. Contour line
3. Ridge line
4. Zig zag line

81. When Δ is the depth of water in metres and B is the number of days of basin period, then the outlet discharge factor is
1. $8.64 \frac{\Delta}{B}$
2. $8.64 \frac{B}{\Delta}$
3. $8.64\ B(\Delta)$
4. $\frac{8.64}{B\Delta}$

82. The survey which are made to fix the property lines, the calculation of land area or the transfer of land property from one owner to another is known as
1. Cadestral survey
2. Geodetic survey
3. Property survey
4. Urban survey

83. The number of links provided in a revenue chain is
1. 100
2. 66
3. 50
4. 16

84. APEDA stands for
1. Agricultural and Processed Food Products Export Development Agency
2. Andhra Pradesh Energy Development Agency
3. Agricultural Products Export Development Agency
4. Andhra Pradesh Environmental Development Authority

85. The weight of air contained in a room 7 m × 10 m × 4 m high at atmospheric pressure and 20 °C temperature will be
1. 306 kg
2. 633 kg
3. 336 kg
4. 636 kg

86. The dose of ionizing radiation sufficient to enhance the keeping quality of foods by causing a substantial decrease in number of viable specific spoilage microorganisms is called
1. Radurization
2. Radappertization
3. Radicidation
4. Sterilisation

87. The gas produced by burning wood in an insufficient supply of oxygen is called
1. Producer gas
2. Natural Gas
3. Conditioned gas
4. Biogas

88. The HP required for a belt conveyor to convey 9 tons of wheat per hour for a distance of 30 m will be
1. 4
2. 1
3. 2
4. 5

89. The amount of moisture removed on drying 1300 kg of groundnut pods at a m.c. of 25% db to 10% m.c. db will be
1. 156 kg
2. 195 kg
3. 165 kg
4. 166 kg

90. CIPHET is located in
1. Thanjavur
2. Chennai
3. Ludhiana
4. Hyderabad

91. _____ is used for alcoholic fermentation.
1. *Acetobacter aceti*
2. *Saccharomyces cerevisiae*
3. *Staphylococcus aureus*
4. *Bacillus stearothermophillus*

92. Total solids present in milk is found by _____ formula.
1. Fischer
2. Richmond
3. Leighton
4. Salwin Slawson

93. If CLR is Corrected Lactometer Reading and OLR is Observed Lactometer Reading, the density of milk is
1. 1 – (CLR/100)
2. 1 + (CLR – OLR) /1000
3. 1 + (CLR/100)
4. 1 + (CLR – OLR)/100

94. The part of the plough to which all other parts are fastened is called
1. Landside
2. Frog
3. Share
4. Slip nose

95. A *lister* is used for
1. Bund forming
2. Opening deep furrows
3. Levelling
4. Uprooting of trees

96. Cetane number of a fuel is the percentage of cetane and
1. Beta methyl napthalene
2. Alpha buthyl napthalene
3. Alpha methyl napthalene
4. Tetra methyl butylene

97. Which of the following finds a place only in National Water Policy 2012?
1. Flood and drought management
2. Community participation
3. Database and information system
4. Conjunctive use of water

98. The time taken for burning after the spark is produced is called
1. Delay time
2. Reaction time
3. Knocking time
4. Ignition time

99. Roller vane rotary pump is used for spraying.
1. High volume
2. Low volume
3. Medium volume
4. All of them

100. Tensiometer can accurately measure soil moisture tension up to
1. 1.00 atm
2. 0.85 atm
3. 0.95 atm
4. 0.75 atm

101. The downward movement of surface soil water is known as
1. Infiltration
2. Percolation
3. Leaching
4. Washout

102. The first KVK was established in 1974 at
1. Nagpur
2. Nilokheri
3. Ludhiana
4. Pondicherry

103. The process of removal of excess water from the land surface is called
1. Sub surface drainage
2. Surface drainage
3. Slope drainage
4. None of the above

104. A ten human power equals to
1. 0.1 hp
2. 0.5 hp
3. 1.0 hp
4. 10.0 hp

105. White smoke indicates
1. Presence of water in fuel
2. Burning of lubricant in cylinder
3. Presence of water in lubricant
4. Rich air and fuel mixture

106. The specific gravity of fuel is measured by
1. Hygrometer
2. Thermometer
3. Hydrometer
4. All are correct

107. The governor is used on tractor engine is called
1. Constant speed governor
2. Variable speed governor
3. Hydraulic governor
4. Both (1) and (2) only

108. A tillage system in which is suitable for dry land agriculture is
1. Zero tillage system
2. Plough plant
3. Rotary tillage system
4. Till plant system

109. The offset disc harrow are mostly suitable for working in
1. Garden
2. Orchard
3. Field
4. Wetland

110. Puddling is done mainly for
1. Reducing seepage of water
2. Reducing deep percolation of water
3. Smoothing seed bed
4. Smoothing of furrow

111. Bucket type sprayer consist of
1. Single and double acting pump
2. Centrifugal pump
3. Plunger type pump
4. Piston type

112. The nozzle used for herbicide and fungicide application is
1. Hallow cone
2. Solid cone
3. Flat fan
4. Jet stream

113. Renewable source of energy is
1. Exhaustible
2. Inexhaustible
3. Nuclear based
4. Biogas

114. Soil erosion is more when
1. Panly impact of raindrop
2. Raindrop impact along with overland flow
3. Only overland flow
4. All are correct

115. Which soil is more resistant to erosion?
1. Sandy soil
2. Clay soil
3. Loamy soil
4. Both (1) and (3)

66. Capillary action is due to the
1. Viscosity of liquid
2. Cohesion of liquid particles
3. Surface tension
4. None of the above

67. Manning's formula is used to determine
1. Friction head loss in pipes running full
2. Friction head loss in pipes running partially full
3. Friction head loss in open channels
4. Friction head loss in irregular sections

68. The velocity in a 2 cm diameter pipe is 20 m/s. If the pipe enlarges to 5 cm diameter, the velocity, in m/s, will be
1. 8.0
2. 6.4
3. 5.2
4. 3.2

69. The sequence of geological cycle for the formation of soils is
1. Weathering, Transportation, deposition and uphevel
2. Transportation, Weathering, deposition and uphevel
3. Transportation, deposition, Weathering and uphevel
4. deposition, Weathering, uphevel and transportation

70. The Water Content of a soil
1. $\frac{\text{Weight of water}}{\text{Total weight of soil}}$
2. $\frac{\text{Weight of water}}{\text{Dry weight of solid particles}}$
3. $\frac{\text{Weight of water}}{\text{Dry weight of solid particles} + \text{Weight of water}}$
4. $\frac{\text{Weight of water}}{\text{Dry weight of solid particles} - \text{Weight of water}}$

71. The fundamental relationship between water content (w), bulk density (γ) and dry density (γ_d) is
1. $\gamma d = \frac{w}{\gamma + w}$
2. $w = \frac{\gamma d}{\gamma + w}$
3. $\gamma = \frac{\gamma d}{1 + w}$
4. $\gamma d = \frac{\gamma}{1 + w}$

72. A soil sample has a porosity of 40%. The specific gravity of solids is 2.70. The dry density would be
1. 0.667
2. 1.24
3. 1.37
4. 1.62

73. In India, soils are classified by
1. MIT Classification
2. Particle size classification
3. Unified soil classification system
4. International classification system

74. The surface irrigation in which water is flooded over the land segments surrounded by dikes is called
1. Corrugation irrigation
2. Check basin irrigation
3. Level basin irrigation
4. Wild flooding

75. The furrow irrigation in which furrows are constructed with a little slope on contour is called
1. Wild flooding
2. Flat planted basin
3. Contour furrow irrigation
4. Sloping furrow irrigation