Interview Questions

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IRRIGATION WATER RESOURCES Engineering and Hydrology Questions :-

1. Which of the following methods of applying water may be used on rolling land ?

a) boarder flooding
b) check flooding
c) furrow flooding
d) free flooding
Ans: a

2. The value of Sodium Absorption Ratio for high sodium water lies between

a) 0 to 10
b) 10 to 18

c) 18 to 26

d) 26 to 34

Ans: c

3. Optimum depth of kor watering for rice is

a) 135 mm

b) 165 mm

c) 190 mm

d) 215 mm

Ans: c

4. Irrigation water having the concentration of Na++ , Ca++ and Mg++ as 20, 3 and 1 Milli equivalent per litre respectively will be classified as
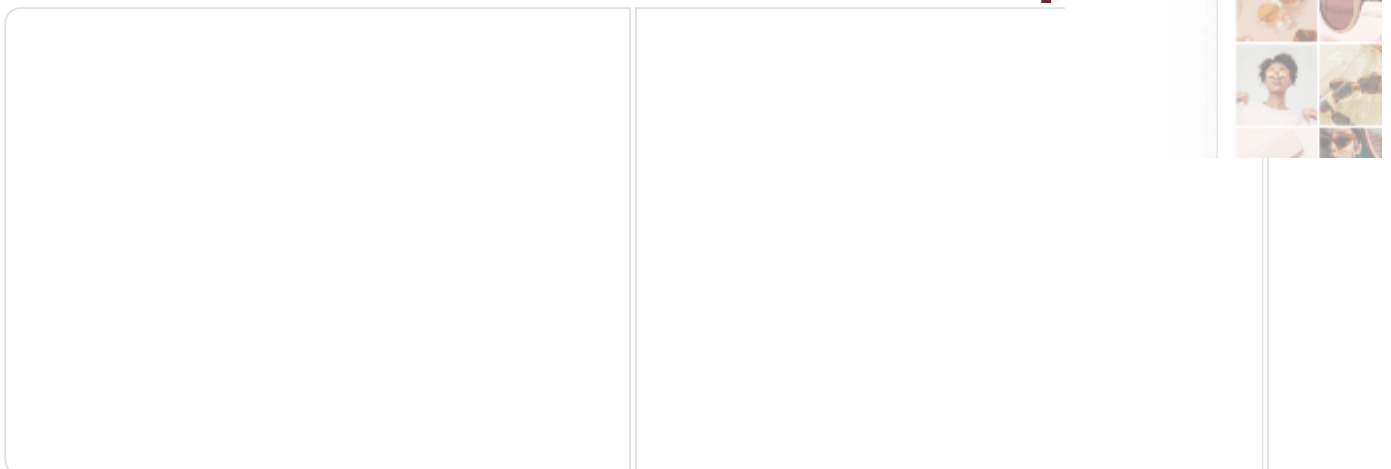
a) low sodium water

b) medium sodium water

c) high sodium water

d) very high sodium water

Ans: b

Cases, Protectors & More
Mobile Mate

5. The duty is largest

a) at the head of water course

b) on the field

c) at the head of a main canal

d) same at all places

Ans: b

6. The "outlet discharge factor" is the duty at the head of

a) main canal

b) branch canal

c) watercourse

d) distributory

Ans: c

7. The kor depth for rice is 190 mm and kor period is 14 days. The outlet factor for this will be

a) 637 hectares/m3/sec

b) 837 hectares/m3/sec

c) 972 hectares/m3/sec

d) 1172 hectares/m3/sec

Ans: a

8. For supplying water to rabi crop, kharif crop and sugarcane, the channel is designed for a capacity equal to the greater of the water requirement of

a) rabi or kharif

b) rabi and kharif or sugarcane

c) rabi and sugarcane or kharif and sugarcane

d) rabi or kharif or sugarcane

Ans: c

9. The ratio of the quantity of water stored in the root zone of the crops to the quantity of water actually delivered in the field is known as

a) water conveyance efficiency

b) water application efficiency

c) water use efficiency

d) none of the above

Ans: b

10. The water utilizable by plants is available in soils mainly in the form of

a) gravity water

b) capillary water

c) hydroscopic water

d) chemical water

Ans: b

11. The amount of irrigation water required to meet the evapotranspiration needs of the crop during its full growth is called

a) effective rainfall

b) consumptive use

c) consumptive irrigation requirement

d) net irrigation requirement

Ans: c

12. With the increase in the quantity of water supplied, the yield of most crops

a) increases continuously

b) decreases continuously

c) increases upto a certain limit and then becomes constant

d) increases upto a certain limit and then decreases

Ans: d

13. Hydrograph is the graphical representation of

a) runoff and time

b) surface runoff and time

c) ground waterflow and time

d) rainfall and time

Ans: a

14. Infiltration rate is always

a) more than the infiltration capacity

b) less than the infiltration capacity

c) equal to or less than the infiltration capacity

d) equal to or more than the infiltration capacity

Ans: c

15. 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

Ans: c

16. Infiltration capacity

a) is a constant factor

b) changes with time

c) changes with location

d) changes with both time and location

Ans: d

17. Infiltration is the

a) movement of water through the soil

b) absorption of water by soil surface

c) both (a) and (b)

d) none of the above

Ans: a

18. If the intensity of rainfall is more than the infiltration capacity of soil, then the infiltration rate will be

a) equal to rate of rainfall

b) equal to infiltration capacity

c) more than rate of rainfall

d) more than infiltration capacity

Ans: b

19. Cyclonic precipitation is caused by lifting of an air mass due to

a) pressure difference

b) temperature difference

c) natural topographical barriers

d) all of the above

Ans: a

20. Which of the following is a non-recording raingauge ?

a) tipping bucket type raingauge

b) Simon's raingauge

c) Steven's weighing type raingauge

d) floating type raingauge

Ans: b

21. A raingauge should preferably be fixed

a) near the building

b) under the tree

c) in an open space

d) in a closed space

Ans: c

22. Which of the following types of rain gauges is used for measuring rain in remote hilly inaccessible areas ?

a) tipping bucket type

b) weighing type

c) floating type

d) Simon's raingauge

Ans: a

23. Rate of evaporation from a water surface increases if

i) difference of vapour pressure between water and air is increased

ii) velocity of wind is decreased

iii) concentration of soluble solids in water is decreased The correct answer is

a) (i) and (ii)

b) (i) and (iii)

c) (ii) and (iii)

d) (i). (ii) and (iii)

Ans: b

24. A 70% index of wetness means

a) rain excess of 30%

b) rain deficiency of 30%

c) rain deficiency of 70%

d) none of the above

Ans: b

25. Under the same conditions, which of the following shapes of water surface will give the highest rate of evaporation ?

a) flat water surface

b) convex water surface

c) concave water surface

d) independent of shape of water surface

Ans: b

26. Assertion A : To estimate the rainfall over a catchment, the number of raingauges required per unit area is large for hilly areas.

Reason R : Rainfall gradient is steep. Select your correct answer according to the coding system given below :

a) Both A and R are true and R is the correct explanation of A

b) Both A and R are true but R is not the correct explanation of A

c) A is true but R is false

d) A is false but R is true

Ans: a

27. When surface of transpiration is submerged under water, then potential evapotranspiration is

a) much more than evapotranspiration

b) much less than evapotranspiration

c) equal to evapotranspiration

d) equal to or less than evapotranspi-ration

Ans: a

28. Unit of runoff in M.K.S. system is

a) cubic metre/sec

b) metre/sec

c) cubic metre

d) square metre

Ans: a

29. The runoff increases with

a) increase in intensity of rain

b) increase in infiltration capacity

c) increase in permeability of soil

d) all of the above

Ans: a

30. The area between the isohyets 45 cm and 55 cm is 100 square km and between 55 cm and 65 cm is 150 square km. The average depth of annua! precipitation over the above basin of 250 square km will be

a) 50 cm

b) 55 cm

c) 56 cm

d) 60 cm

Ans: c

31. A current meter is used to measure the

a) velocity of flow of water

b) depth of flow of water

c) discharge

d) none of the above

Ans: a

32. If it rains between 2 P.M. and 3 P.M. and the entire basin area just starts contributing water at 3 P.M. to the outlet, then time of concentration will be

a) 15 minutes

b) 20 minutes

c) 30 minutes

d) 60 minutes

Ans: d

33. The rainfall on five successive days were measured as 100 mm, 80 mm, 60 mm, 40 mm and 20 mm respectively. If the infiltration index or the storm loss rate for the catchment area is earlier estimated as 50 mm/day, the total surface run off will be

a) 50 mm

b) 60 mm

c) 90 mm

d) 140 mm

Ans: c

34. The normal annual precipitation at stations X, A, B and C are 700 mm, 1000 mm, 900 mm and 800 mm respectively. If the storm precipitation at three station A, B and C were 100 mm, 90 mm and 80 mm respectively, then the storm precipitation for station X will be

a) 70mm

b) 80mm

c) 90 mm

d) 105 mm

Ans: a

35. The best unit duration of storm for a unit hydrograph is

a) 1 hour

b) one-fourth of basin lag

c) one-half of basin lag

d) equal to basin lag

Ans: b

36. The unit hydrograph due to a storm may be obtained by dividing the ordinates of the direct runoff hydrograph by

a) direct runoff volume

b) period of storm

c) total rainfall

d) none of the above

Ans: a

37. The unit hydrograph of a specified duration can be used to evaluate the hydrograph of storms of

a) same duration only

b) same and shorter duration

c) same and longer duration

d) any duration

Ans: d

38. S-hydrograph is used to obtain unit hydrograph of

a) shorter duration from longer duration

b) longer duration from shorter duration

c) both (a) and (b)

d) none of the above

Ans: c

39. The relation between probability (P) and recurrence interval (T)
is given by

a) PT = 1

b) PT2 = 1

c) P/T = 1

d) P/T2 = 1

Ans: a

40. Dimensions of coefficient of transmissibility are

a) M°L°T°

b) rvfL'T"1

c) M° L2 T1

d) M'LV

Ans: c

41. If d is the depth of the aquifer through which water is flowing,
then the relationship between permeability k and transmissible T is
given by

a) T = kd

b) T = k/d

c) T= Vkd

d) k= VTd

Ans: a

42. An artesian aquifer is the one where

a) water surface under the ground is at atmospheric pressure

b) water is under pressure between two impervious strata

c) water table serves as upper surface of zone of saturation

d) none of the above

Ans: b

43. A deep well

a) is always deeper than a shallow well

b) has more discharge than a shallow well

c) is weaker structurally than a shallow well

d) both (a) and (b)

Ans: b

44. A multipurpose reservoir is the one which is
a) designed for one purpose but serves more than one purpose
b) planned and constructed to serve various purposes
c) both (a) and (b)
d) none of the above
Ans: b

45. The useful storage is the volume of water stored in the reservoir between
a) minimum pool level and maximum pool level
b) minimum pool level and normal pool level
c) normal pool level and maximum pool level
d) river bed and minimum pool level
Ans: b

46. The water stored in the reservoir below the minimum pool level is called
a) useful storage
b) dead storage
c) valley storage
d) surcharge storage
Ans: b

47. For a flood control reservoir, the effective storage is equal to
a) useful storage – valley storage
b) useful storage + surcharge storage
c) useful storage + surcharge storage + valley storage
d) useful storage + surcharge storage -valley storage
Ans: d

48. Trap efficiency of a reservoir is a function of
a) capacity/inflow ratio
b) capacity/outflow ratio
c) outflow/inflow ratio
d) none of the above
Ans: a

49. The total capacity of a reservoir is 25 million cubic metres and dead storage is 5 million cubic metres. If the average volume of sediment deposition is 0.10 million cubic metre per year, then the usefulness of the reservoir will start reducing after

a) 50 years
b) 150 years
c) 200 years
d) 250 years
Ans: a

50. The forces, which are considered for the analysis of an elementary profile of a gravity dam under empty reservoir condition, are
i) Water pressure
ii) Self weight
iii) Uplift
iv) Pressure due to earthquake
The correct answer is
a) Only (ii)
b) (i), (ii) and (iii)
c) (i), (ii) and (iv)
d) (i), (ii), (iii) and (iv)
Ans: a

51. When the upstream face of a gravity dam is vertical, then the intensity of water pressure at the water surface and at the base respectively will be
a) 0 and wH212
b) wH2/2and wH2/3
c) wH and 0
d) OandwII
where w is unit weight of water and H is the depth of water.
Ans: d

52. The uplift pressure on a dam can be controlled by
i) constructing cutoff under upstream face
ii) constructing drainage channels bet-ween the dam and its foundation
iii) by pressure grouting in foundation
The corret answer is
a) only (i)
b) both (i) and (ii)
c) both (i) and (iii)
d) (i), (ii) and (iii)
Ans: d

53. The uplift pressure on the face of a drainage gallery in a dam is taken as
a) hydrostatic pressure at toe
b) average of hydrostatic pressure at toe and heel
c) two-third of hydrostatic pressure at toe plus one-third of hydrostatic pressure at heel
d) none of the above
Ans: c

54. Horizontal acceleration due to earthquake results in
a) hydrodynamic pressure
b) inertia force into the body of the dam
c) both (a) and (b)
d) none of the above
Ans: c

55. Hydrodynamic pressure due to earthquake acts at a height of
a) 3H/47I above the base
b) 3H747t below the water surface
c) 4H/371 above the base
d) 4H737t below the water surface where H is the depth of water.
Ans: c

56. The major resisting force in a gravity dam is
a) water pressure
b) wave pressure
c) self-weight of dam
d) uplift pressure
Ans: c

57. When the reservoir is full, the maximum compressive force in a gravity dam is produced
a) at the toe
b) at the heel
c) within the middle third of base
d) at centre of base
Ans: a

58. The maximum permissible eccentricity for no tension at the base of a gravity dam is
a) B/2

b) B/3

c) B/4

d) B/6

Ans: d

59. Presence of tail water in a gravity dam

i) increases the principal stress

ii) decreases the principal stress

iii) increases the shear stress

iv) decreases the shear stress

The correct answer is

a) (i) and (iii)

b) (i)and(iv)

c) (ii) and (iii)

d) (ii) and (iv)

Ans: d

60. For wave action in dams, the maximum height of freeboard is generally taken to be equal to

a) 0.5 hw

b) 0.75 hw

c) 1.25 hw

d) 1.50 hw

where hw is height of wave.

Ans: d

61. As compared to gravity dams, earthen dams

a) are costlier

b) are less susceptible to failure

c) require sound rock foundations

d) require less skilled labour

Ans: d

62. The most suitable material for the central impervious core of a zoned embankment type dam is

a) clay

b) coarse sand

c) silty clay

d) clay mixed with fine sand

Ans: d

63. Seepage through embankments in an earthen dam is controlled by
a) drainage filters
b) relief wells
c) drain trenches
d) provision of downstream berms
Ans: c

64. Seepage through foundation in an earthen dam is controlled by providing
a) rock toe
b) horizontal blanket
c) impervious cut off
d) chimney drain
Ans: c

65. The flow of water after spilling over the weir crest in chute spillway and side channel spillway respectively are
a) at right angle and parallel to weir crest
b) parallel and at right angle to weir crest
c) parallel to weir crest in both
d) at right angle to weir crest in both
Ans: a

66. The discharge passing over an ogee spillway is given by
a) CLH3/2
b) CHL3/2
c) CLH5/2
d) CLH1/2
where, L is effective length of spillway crest and H is the total head over the spillway crest including velocity head.
Ans: a

67. Coefficient of discharge of an ogee spillway
a) depends on depth of approach and upstream slope
b) depends on downstream apron interference and downstream submergence
c) remains constant
d) both (a) and (b)
Ans: d

68. Which of the following spillways is least suitable for an earthen dam ?
a) ogee spillway
b) chute spillway
c) side channel spillway
d) shaft spillway
Ans: a

69. In case of non-availability of space due to topography, the most suitable spillway is
a) straight drop spillway
b) shaft spillway
c) chute spillway
d) ogee spillway
Ans: b

70. In a chute spillway, the flow is usually
a) uniform
b) subcritical
c) critical
d) super critical
Ans: d

71. For the upstream face of an earthen dam, the most adverse condition for stability of slope is
a) sudden drawdown
b) steady seepage
c) during construction
d) sloughing of slope
Ans: a

72. If there are two canals taking off from each flank of a river, then there will be
a) one divide wall and one undersluice
b) one divide wall and two undersluices
c) two divide walls and one undersluice
d) two divide walls and two undersluices
Ans: d

73. Generally the weir is aligned at right angles to the direction of the main river current because

a) it ensures less length of the weir

b) it gives better discharging capacity

c) it is economical

d) all of the above

Ans: d

74. The main function of a divide wall is to

a) control the silt entry in the canal

b) prevent river floods from entering the canal

c) separate the undersluices from weir proper

d) provide smooth flow at sufficiently low velocity

Ans: c

75. A divide wall is provided

a) at right angle to the axis of weir

b) parallel to the axis of weir and up-stream of it

c) parallel to the axis of weir and down-stream of it

d) at an inclination to the axis of weir

Ans: a

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76. As compared to crest of the normal portion of the weir, the crest of the under sluice portion of weir is kept at

a) lower level

b) higher level

c) same level

d) any of the above depending on the design

Ans: a

77. Silt excluders are constructed on the

a) river bed upstream of head regulator

b) river bed downstream of head regulator

c) canal bed upstream of head regulator

d) canal bed downstream of head regulator

Ans: a

78. According to Khosla's theory, the exit gradient in the absence of a downstream cutoff is

a) 0

b) unity

c) infinity

d) very large

Ans: c

79. The minimum size of stone that will remain at rest in a channel of longitudinal slope S and hydraulic mean depth R is given by

a) 4RS

b) 11 RS

c) 7RS

d) 15 RS

Ans: b

80. The ratio of average values of shear stresses produced on the bed and the banks of a channel due to flowing water is

a) less than 1

b) equal to 1

c) greater than 1

d) equal to zero

Ans: c

81. If the critical shear stress of a channel is xc, then the average value of shear stress required to move the grain on the bank is

a) 0.5 xc

b) 0.75 TC

c) xc

d) 1.33 TC

Ans: b

82. As per Lacey's theory, the silt factor is

a) directly proportional to average par¬ticle size

b) inversely proportional to average par¬ticle size

c) directly proportional to square root of average particle size

d) not related to average particle size

Ans: c

83. Wetted perimeter of a regime channel for a discharge of 64 cumecs as per Lacey's theory will be

a) 19 m

b) 38m

c) 57m

d) 76m

Ans: b

84. Which of the following canal structures is used to remove surplus water from an irrigation channel into a natural drain ?

a) canal fall

b) canal outlet

c) canal escape

d) canal regulator

Ans: c

85. For a proportional outlet, the flexibility is

a) zero

b) between zero and 1

c) 1

d) greater than 1

Ans: c

86. The sensitivity of a rigid module is

a) zero

b) between zero and one

c) 1

d) infinity

Ans: a

87. Which of the following is a flexible outlet ?

a) submerged pipe outlet

b) Kennedy's gauge outlet

c) Gibb's outlet

d) none of the above

Ans: b

88. A straight glacis type fall with a baffle platform and a baffle wall is called

a) vertical dropfall

b) glacis fall

c) Montague type fall

d) inglis fall

Ans: d

89. Which of the following types of falls use parabolic glacis for energy dissipation ?
a) vertical drop fall
b) glacis fall
c) Montague type fall
d) inglis fall
Ans: c

90. In a Sarda type fall, rectangular crest is used for discharge upto
a) 6 cumecs
b) 10 cumecs
c) 14 cumecs
d) 20 cumecs
Ans: c

91. Which of the following can be used as a meter fall ?
a) vertical drop fall
b) flumed glacis fall
c) unflumed glacis fall
d) all of the above
Ans: a

92. Vertical drop fall is satisfactory for a height upto
a) 0.5 m
b) 1.5 m
c) 3.5 m
d) 5.0 m
Ans: b

93. Which of the following canal outlets maintains a constant discharge ?
a) non-modular outlet
b) flexible outlet
c) rigid module
d) none of the above
Ans: c

94. The ratio of rate of change of the discharge of an outlet to the rate of change of the discharge of distributing channel is called
a) proportionality
b) flexibility

c) setting

d) sensitivity

Ans: b

95. The drainage water intercepting the canal can be disposed of by passing the canal below the drainage in

a) aqueduct and syphon aqueduct

b) aqueduct and super passage

c) super passage and canal syphon

d) level crossing

Ans: c

96. If the R.L's of canal bed level and high flood level of drainage are 212.0 m and 210.0 m respectively, then cross drainage work will be

a) aqueduct

b) superpassage

c) syphon

d) syphon aqueduct

Ans: c

97. The aqueduct or superpassage type of works are generally used when

a) high flood drainage discharge is small

b) high flood drainage discharge is large and short lived

c) high flood drainage discharge is large and continues for a long time

d) none of the above

Ans: a

98. An aggrading river is a

a) silting river

b) scouring river

c) both silting and scouring river

d) neither silting nor scouring river

Ans: a

99. Tortuosity of a meandering river is the ratio of

a) meander belt to meander length

b) meander length to meander belt

c) curved length along the channel to the direct axial length of the

river reach

d) direct axial length of the river reach to curved length along the channel

Ans: c

100. The meander pattern of a river is developed by

a) average discharge

b) dominant discharge

c) maximum discharge

d) critical discharge

Ans: b

101. The main cause of meandering is

a) presence of an excessive bed slope in the river

b) degradation

c) the extra turbulence generated by the excess of river sediment during floods

d) none of the above

Ans: c

102. Tortuosity of a meandering river is always

a) equal to 1

b) less than 1

c) greater than 1

d) less than or equal to 1

Ans: c

103. Select the correct statement.

a) A meander increases the river length but a cut off reduces the river length.

b) A cutoff increases the river length but a meander reduces the river length.

c) Both meander and cutoff increase the river length.

d) Both meander and cutoff decrease the river length.

Ans: a

104. River training for depth is achieved by

a) groynes

b) construction of dykes or leavees

c) both (a) and (b)

d) groynes and bandalling

Ans: d

105. Main purpose of mean water training for rivers is

a) flood control

b) to provide sufficient depth of water in navigable channels, during low water periods

c) to preserve the channel in good shape by efficient disposal of suspended and bed load

d) all of the above

Ans: c

106. If D is the depth of scour below original bed, then the width of launching apron is generally taken as

a) 1.2 D

b) 1.5 D

c) 2.0 D

d) 2.5 D

Ans: b

107. Study the following statements.
i) Levees are constructed parallel to river flow,
ii) Spurs are constructed parallel to river flow,
iii) Levees are constructed transverse to river flow,
iv) Spurs are constructed transverse to river flow.
The correct answer is

a) (i) and (ii)

b) (i) and (iv)

c) (ii) and (iii)

d) (iii) and (iv)

Ans: b

108. A repelling groyne is aligned

a) pointing upstream

b) pointing downstream

c) perpendicular to bank

d) parallel to bank

Ans: a

109. A river training work is generally required when the river is

a) aggrading type

b) degrading type

c) meandering type

d) both (a) and (b)

Ans: c

110. A river bend characterized by silting

a) scouring on concave side

b) silting on convex side

c) scouring on convex side and on concave side

d) scouring on concave side and silting on convex side

Ans: d

111. Select the incorrect statement.

a) Intensive irrigation should be avoided in areas susceptible to water logging.

b) Extensive irrigation should be adopted in areas susceptible to water logging.

c) Lift irrigation increases water logging.

d) all of the above

Ans: c

112. A land is known as waterlogged

a) when the permanent wilting point is reached

b) when gravity drainage has ceased

c) capillary fringe reaches the root zone of plants

d) none of the above

Ans: c

113. Lining of irrigation channels

a) increases the waterlogging area

b) decreases the waterlogging area

c) does not change the water logging area

d) none of the above

Ans: b

114. A runoff river plant is

a) a low head scheme

b) a medium head scheme

c) a high head scheme

d) none of the above
Ans: a

115. The net speed under which the turbine reaches its peak efficiency is called

a) design speed

b) rated speed

c) gross speed

d) operating speed

Ans: a

116. A runoff river plant

a) is a medium head scheme

b) generates power during peak hours only

c) is suitable only on a perennial river

d) has no pondage at all

Ans: c

117. The net head under which the turbine reaches its peak efficiency at synchronous speed is called

a) design head

b) rated head

c) gross head

d) operating head

Ans: a

118. The ratio of the average load to the installed capacity of the plant whose reserve capacity is zero will be equal to

a) load factor

b) plant factor

c) utilisation factor

d) both (a) and (b)

Ans: d

119. A hydroelectric scheme operating under a head of 80 m will be classified as

a) low head scheme

b) medium head scheme

c) high head scheme

d) none of the above

Ans: c

120. A hyetograph is a graphical representation of

a) rainfall intensity and time

b) rainfall depth and time

c) discharge and time

d) cumulative rainfall and time

Ans: a

121. Variability of rainfall is

i) largest in regions of high rainfall

ii) largest in coastal areas

iii) largest in regions of scanty rainfall

The correct answer is

a) only (i)

b) (i) and (ii)

c) only (iii)

d) (ii) and (iii)

Ans: c

122. In India, which of the following is adopted as standard recording raingauge ?

a) Symon's raingauge

b) tipping bucket type

c) natural syphon type

d) weighing bucket type

Ans: c

123. The maximum average depth due to one day storm over an area of 100 km2 is 100 mm. Depth-Area-Duration (DAD) curves indicate that for the same area of 100 km2 the maximum average depth for a 3 hour storm will be

a) 100 mm

b) more than 100 mm

c) less than 100 mm

d) none of the above

Ans: b

124. The maximum rainfall depth of 300 mm in 24 hours has a return period of 100 years. The probability of 24 hours rainfall equal to or greater than 300 mm occurring at least once in 10 years is given by

a) (0.99)10

b) 1 – (0.99)10
c) (0.9)'00
d) l-(0.9)100
Ans: b

125. The most suitable chemical which can be applied to the water surface for reducing evaporation is

a) methyl alcohol
b) ethyl alcohol
c) cetyl alcohol
d) butyl alcohol
Ans: c

126. Interception losses are due to
i) evaporation
ii) transpiration
iii) stream flow
The correct answer is

a) only (i)
b) (i)and(ii)
c) (ii) and (iii)
d) (i), (ii) and (iii)
Ans: a

127. A 6 hours storm had 4 cm of rainfall and the resulting runoff was 2 cm. If <j) index remains at the same value, the runoff due to 10 cm of rainfall in 12 hours in the catchment is

a) 4.5 cm
b) 6.0 cm
c) 7.5 cm
d) 9.0 cm
Ans: b

128. Which of the following methods is used to estimate flood discharge based on high water marks left over in the past ?

a) slope-area method
b) area-velocity method
c) moving boat method

d) ultra-sonic method

Ans: a

129. To determine the discharge at a section in a stream from its rating curve, the required data are
i) slope of water surface at the section
ii) stage at the section iii) current meter readings at the section The correct answer is

a) (i) and (ii)

b) (ii) and (iii)

c) only (ii)

d) only (iii)

Ans: c

130. The stage of river carrying a discharge of Q m7sec at a point is 10 m and slope of water surface is (1/4000). The discharge of a flood at the same point and same stage of 10 m with a water surface slope of(l/1000)willbe

a) V2 Q m3/sec

b) 0.5 Q mVsec

c) 2 Q m3/sec

d) 4 Q m3/sec

Ans: c

131. The stream which does not have any base flow contribution is called

a) perennial stream

b) intermittent stream

c) ephemeral stream

d) none of the above

Ans: c

132. The flow-mass curve is graphical representation of

a) cumulative discharge and time

b) discharge and percentage probability of flow being equaled or exceeded

c) cumulative discharge, volume and time in chronological order

d) discharge and time in chronological order

Ans: c

133. If the demand line drawn from a ridge in a flow mass curve does not intersect the curve again, it indicates that

a) demand cannot be met by inflow

b) reservoir was not full at the beginning

c) both (a) and (b)

d) none of the above

Ans: a

134. The shape of recession limb of a hydrograph depends upon

a) basin characteristics only

b) storm characteristics only

c) both (a) and (b)

d) none of the above

Ans: a

135. Instantaneous unit hydrograph is a hydrograph of
i) unit duration
ii) unit rainfall excess
iii) infinitely small duration
iv) infinitely small rainfall excess
The correct answer is

a) (i) and (ii)

b) (i)and(iv)

c) (ii) and (iii)

d) (iii) and (iv)

Ans: c

136. For a catchment area of 120 km2, the equilibrium discharge in m3/hour of an S-curve obtained by the summation of 6 hour unit hydro graph is

a) 0.2 x 106

b) 0.6 x 106

c) 2.4 xlO6

d) 7.2 xlO6

Ans: a

137. A unit hydro graph has one unit of

a) rainfall duration

b) rainfall excess

c) time base of direct runoff

d) discharge

Ans: b

138. The peak of a 4 hour flood hydrograph is 240 m3/sec . If the rainfall excess is 80 mm and base flow which is constant is 40 m3/sec, then the peak of 4-hours unit hydrograph will be

a) 20 3/sec

b) 25 m3/sec

c) 30 m3/sec

d) 35 m3/sec

Ans: b

139. To estimate the magnitude of a flood with a return period of T years, Gumbel's distribution method requires the following data pertaining to annual flood series

i) mean value

ii) standard deviation

iii) length of record

iv) coefficient of skew

The correct answer is

a) (i) and (ii)

b) (i),(iD and (iii)

c) (i), (ii) and (iv)

d) (i), (ii), (iii) and (iv)

Ans: b

140. For an annual flood series arranged in descending order of magnitude, the return for a magnitude listed at position period m in a total data N is

a) N/(m+l)

b) m/(N+l)

c) m/N

d) (N+l)/m

Ans: d

141. If the risk of a flood occurring in the next 10 years is accepted to 10%, then the return period for design should be

a) 1 + (0.9)010

b) 1 – (0.9)°lo

c) $1/(1-0.9°10)$

d) $1/(1+ 0.9010)$

Ans: c

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