024/2024

1. The transition zone from one community to another is :
   - (A) Ecocline
   - (B) Ecotone
   - (C) sub-climax
   - (D) post climax

2. Which one of the following statements is _false_?
   - (A) Chemolithotrophs recover mineral nutrients and rescue energy unavailable to consumers
   - (B) Ecosystems where physical conditions limit decomposition tend to evolve into fire-type ecosystems
   - (C) Pn/Pg ratio is more in the temperate zone than in tropics
   - (D) Time-course of detritus decomposition is negative exponential

3. Cane brakes in the northern tropical wet evergreen forests is an example of :
   - (A) climatic climax
   - (B) pre-climax
   - (C) edaphic climax
   - (D) post-climax

4. Adiabatic cooling is due to :
   - (A) decrease in atmospheric pressure with elevation
   - (B) air molecules become more tightly packed as air ascends
   - (C) descent of moisture laden air masses
   - (D) an increase in sensible heat

5. Which of the following is an example of edaphic type of forest?
   - (A) Type 2B/2S1
   - (B) Type 1B/E1
   - (C) Type 1A/C1
   - (D) Type 3C/C1

6. Biodiversity hotspots concept was initiated by :
   - (A) Charles Darwin
   - (B) J.B. Raintree
   - (C) R.A. Fisher
   - (D) Norman Myers

A

3

7. The headquarters of the National Biodiversity Agency is located in :

(A) Chennai

(B) Mumbai

(C) Delhi

(D) Hyderabad

8. A thinning aimed at removing the inferior trees from among the dominant class is called :

(A) Crown thinning

(B) High Thinning

(C) Free thing

(D) Mechanical thinning

9. Size class distribution of individuals in an uneven-aged forest will follow ———— distribution pattern.

(A) Bell shaped distribution

(B) Inverse 'J' shaped distribution

(C) 'J' shaped distribution

(D) Sigmoid distribution

10. The number of seedlings required for quincunx planting in one ha area at a plant and row spacing of 6 × 6 m is approximately :

(A) 250

(B) 900

(C) 500

(D) 660

11. A felling made to assist regeneration under the shelterwood system is :

(A) final felling

(B) secondary felling

(C) clear felling

(D) seeding felling

12. A forest that is regenerated from seed is called a :

(A) Normal forest

(B) Regular Forest

(C) Natural forest

(D) High Forest

13. Number of seeds that germinate in a sample, upto to a time when the germination is at its peak, is called :

(A) Germinative energy

(B) Germination percentage

(C) Germinative power

(D) Germinative capacity

14. Which of the following is _true_ about an orthodox seed :

    (A) can be stored at high moisture content

    (B) can be dried to low moisture content

    (C) can be stored for long periods

    (D) can be stored at sub-freezing temperature

15. Protein banks are :

    (A) Multistrata systems involving annual crops with several species of trees

    (B) A plant community that resembles a natural forest (generally multistrata)

    (C) Parkland systems include combinations of trees and crops

    (D) Cut and carry fodder production systems involving lopping trees and grazing understorey grasses

16. The green manure crop dhaincha is botanically :

    (A) _Crotalaria juncea_   (B) _Tephrosia prupruea_

    (C) _Indigofera tinctoria_   (D) _Sesbania bispinosa_

17. Improved fallows are associated with ————— systems.

    (A) taungya

    (B) shifting cultivation

    (C) agrosilvopastoral system

    (D) mixed sparse system

18. The interaction between components in an agroforestry system is commensalism if :

    (A) Both are benefited

    (B) One is benefited, while the other is harmed

    (C) One is benefited, while the other is not affected

    (D) Both are not benefited

19. A block of live trees and shrubs established and maintained for the protection of farmlands over a larger area than a farm is called :

    (A) Shelter belt   (B) Wind break

    (C) Wind belt   (D) Strip belt

20. The most suitable grass species for soil conservation in the Western Ghats region among the following is :

(A) *Eulaliopsis binata*

(B) *Chloris gayana*

(C) *Vetiveria zizanoides*

(D) *Brachiaria ruziziensis*

21. The proportionality constant in Darcy's flow law for unsaturated flow is :

(A) hydraulic head

(B) hydraulic conductivity

(C) intrinsic permeability

(D) coefficient of permeability

22. Which one of the following is not true about water balance equation?

(i) Equation is $RF + CWI + IRR = RO + ET + GWR + \Delta S$

(ii) Base flow of water will not be considered in the equation

(iii) Snow fall will be counted in the equation

(A) (i) and (ii)

(B) (i) and (iii)

(C) (ii) only

(D) (iii) only

23. Which among the following statements is not true?

(i) The energy balance of a hydrologic system is an accounting of all inputs and outputs of energy to and from a system

(ii) The resistance time is the average duration for a water molecule to pass through a subsystem of the hydrologic cycle.

(iii) The residence time is calculated by the formula, $Tr = Q/S$, where S is volume of storage water and Q is flow rate.

(A) (i) only

(B) (ii) only

(C) (iii) only

(D) (ii) and (iii)

24. The percent of world's fresh water availability is in the order (higher to lower) :

(A) Groundwater > Lakes and rivers > Polar ice

(B) Polar ice > Ground water > Lakes and rivers

(C) Polar ice > Lakes and rivers > Ground water

(D) Oceans > Ground water > Lakes and rivers

25. Which among the following theorems is used to develop the continuity, momentum and energy equations for various hydrologic process?

    (A)   Betz' transport theorem
    (B)   De Franchis theorem

    (C)   Reynolds transport theorem
    (D)   Noether's theorem

26. Which among the following is not true regarding hydrograph?

    (i)   A hydrograph is a way of displaying water level information over time.

    (ii)   Hydrograph consists of rising limb, crest segment and falling limb

    (iii)   The shape of the hygrograph will be influenced by the intensity of rainfall, not its duration.

    (A)   (i) and (ii)

    (B)   (ii) and (iii)

    (C)   (ii) only

    (D)   (iii) only

27. Which among the following statements is wrong?

    (i)   The fraction of radiation reflected from a surface is called as albedo

    (ii)   Radiation emission from a surface is governed by the Stefan-Boltzman law

    (iii)   The wavelength of emitted radiation is directly proportional to the surface temperature.

    (A)   (i) only

    (B)   (ii) only

    (C)   (iii) only

    (D)   (i) and (iii)

28. The ratio between watershed area and the square of the axial length of the basin (A/L^2) used to define the watershed shape is called as :

    (A)   Form factor
    (B)   Shape factor

    (C)   Circularity Ratio
    (D)   Elongation Ratio

29. Which among the following statements is correct?

(i) As per Harrington's rule of thumb, seed longevity decreases by one-half for every 1% increase in moisture content or every 10°F (6°C) increase in temperature

(ii) The relationship between seed MC and ambient RH at a given temperature is called a moisture isotherm

(iii) The life span of orthodox seeds can be prolonged with low moisture content and freezing temperatures.

 (A) (i) only

 (B) (ii) only

 (C) (iii) only

 (D) (i), (ii) and (iii)

30. Choose the correct stages of seed certification :

 (A) Nuclear seed – Breeder seed – Foundation seed – Certified seed

 (B) Breeder seed – Nuclear seed – Foundation seed – Certified seed

 (C) Foundation seed – Breeder seed – Nuclear seed – Certified seed

 (D) Foundation seed – Nuclear seed – Breeder seed – Certified seed

31. Choose the wrong one regarding colour of the different types of seed tags :

 (A) Breeder seed tag-Golden Yellow (B) Foundation seed tag-White

 (C) Certified seed tag-Azar blue (D) Nuclear seed tag-Purple

32. Choose the wrong statement/s :

(i) Section 11 of the Seed Act-1966 deals with the power to notify the kind/varieties

(ii) There is a provision in Seed Act-1966 to encourage export and import of seeds of notified kinds or varieties

(iii) Seed Act-1966 says about seed certification to ensure genetic identity and genetic purity

 (A) (i) and (ii)

 (B) (ii) and (iii)

 (C) (iii) only

 (D) (i), (ii) and (iii)

33. Find the wrong statement regarding seed viability test :

(i) 2, 3, 5 triphenyl tetrazolium chloride is used as indicator for viability test

(ii) Purple coloured stable and non- diffusible substance called triphenyl chloride will be formed in viable seed during tetrazolium test

(iii) Seed germination test is used to test viability of seed

(A) (i) only

(B) (ii) only

(C) (iii) only

(D) (i) and (ii) only

34. Choose the wrong combination :

(A) *Holoptelia integrifolia*-Samara

(B) *Eucalyptus grandis*-Capsule

(C) *Tectona grandis*-Drupe

(D) *Ficus religiosa*-Berry

35. Choose the wrong statement :

(A) Circumference or girth of a tree at breast height is called GBH

(B) Bark thickness may be determined with an instrument known called bark gauge

(C) Hypsometer is used for measuring tree height

(D) The base of the tree tends to be conoid while the tip tends to be neiloid

36. Which among the following statement is not correct?

(A) Breast-height should he marked at 1.37 m above the ground level

(B) On sloping ground DBH should be measured on the uphill side

(C) For a leaning tree DBH is measured vertically and not along the tree stem

(D) When tree is forked above the BH, then the tree is counted as one tree

37. Choose the instrument used for point sampling :

(A) Wedge Prism

(B) Christen's Hypsometer

(C) Abney's level

(D) Haga Altimeter

38. Choose the wrong statement regarding volume table :

    (A)   In local volume table, volume is based on only one parameter, i.e. D.B.H. only

    (B)   Commercial volume tables give separately the estimated out turn in the form of standard timber

    (C)   Alignment Chart method is used for the preparation of volume table

    (D)   General volume tables are based on the average volume of trees growing over a large geographical area

39. Choose the wrong formulae :

    (A)   Pressler's formula, $P = (200/n)[(V+v)/(V-v)]$

    (B)   Schneider's formula, $P = 400/(nD)$

    (C)   Quarter girth formula, $V = (g/4)^2 * \text{length}$

    (D)   Smalian's formula, $V = (S_1 + S_2) * \text{length}/2$

40. What parameter is calculated using these methods; Huber's method, Harting's method and Block's method :

    (A)   Height   (B)   Basal Area

    (C)   Volume   (D)   Increment

41. Choose the wrong statement/definition :

    (A)   The time that elapses between successive main fellings on the same area is called rotation

    (B)   The unit of forest management is a working plan, usually covering an area of a forest division

    (C)   The material that a forest can yield annually or periodically in perpetuity is called sustained yield

    (D)   The sum of all the trees growing in the forest or specified part of it is called growing stock

42. The rotation under which a species yields the maximum material of a specified size or suitability for economic conversion or for specified use is called :

    (A)   Financial rotation   (B)   Physical rotation

    (C)   Silvicultural rotation   (D)   Technical rotation

43. Which among the following characteristics is not true regarding "Normal Forest"?

    (A) NF ensures a normal increment

    (B) NF ensures a normal age-class distribution

    (C) NF ensures a normal growing stock

    (D) NF ensures a normal site quality

44. Which section of Forest (Conservation) Act, 1980 says "The Central Government may, by notification in the Official Gazette, make rules for carrying out the provisions of this Act." :

    (A) Section 3   (B) Section 4

    (C) Section 5   (D) Section 6

45. Which of the following statements is incorrect regarding CITES?

    (i) CITES stand for "Convention on International Trade in Endangered Species of Wild Flora and Fauna".

    (ii) CITES has three Appendix levels regulating the international trade of species.

    (iii) Although CITES is legally binding on the Parties, it does not take the place of national laws.

    (A) (i) only   (B) (ii) only

    (C) (iii) only   (D) (i) and (iii)

46. Choose the wrong statement regarding Forest Working Plan?

    (A) National Working Plan code is published by MoEF in 2014

    (B) Forest working plan typically revised for every five years

    (C) Normally, forest working plan is divided into two parts

    (D) The working plan is a written scheme of management to achieve the objects of management

47. Which of the following statement (s) is/are correct related to forest fire?

    (i) In coniferous forest, forest fire may start as surface fire and in presence of lichens and dry climbers and it may develop to a crown fire or combination of both.

    (ii) Most of the forest fires are happened by natural causes.

    (iii) Any deliberate use of fire where burning is limited to predetermined area and intensity is known as early burning.

    (A) (i) only   (B) (i) and (ii) only

    (C) (i) and (iii) only   (D) (ii) and (iii) only

48. Susceptibility of the material to ignition in the context of forest fire is known as :

    (A) Flammability   (B) Risk

    (C) Danger   (D) Hazard

49. Forest fire prevention does not include :

    (A) Fire-cause investigation

    (B) Education and sensitising of the public

    (C) Forest access regulations

    (D) Counter firing

50. Which one is not a woody climber?

    (A) Mikania   (B) Dioscorea

    (C) Parthenium   (D) Smilax

51. In encroachment, if the offender alters, moves, destroys or defaces any boundary-mark of any forest, the offence will be booked under which section of Indian Forest Act?

    (A) Section 18   (B) Section 30

    (C) Section 33   (D) Section 63

52. Hoplocerambyx spinicornis, is the most serious pest of :

    (A) Teak   (B) Sal

    (C) Eucalyptus   (D) Ailanthus

53. Chloropicrin is used as a :

    (A) Fumigant   (B) Nematicide

    (C) Insecticide   (D) All of the above

54. Scale insects are most common pests in :

    (A) Semal   (B) Teak

    (C) Sandal   (D) Sal

55. Which is a serious shisham (*D. sisso*) defoliator?

    (A) *Hyblaea puera*   (B) *Holotrichia spp*

    (C) *Plecoptera reflexa* (D) *Dihammus cervinus*

56. *Hypsipyla robusta,* a fruit and shoot borer is seriously affecting :

    (A) Ailanthus   (B) Mahagony

    (C) Teak   (D) Jack7y

57. Myco-remediation is a type of biological method for pesticide waste management using ——————— which use such pollutants as a carbon source and convert them into less toxic compounds and cleaning them from the water.

    (A) Bacteria   (B) Fungi

    (C) Algae   (D) Actinomycetes

58. Pheromone trap attracts :

    (A) Male moths   (B) Female moths

    (C) Female bugs   (D) Caterpillars

59. The control measure for leaf blight in nursery is application of :

    (A) Blitox   (B) Bavistin

    (C) Carbendazim   (D) Dithane M45

60. *Corticium salmonicolor* is a causal organism of :

    (A) Dieback   (B) Pink disease

    (C) Powdery mildew   (D) Root rot

61. Bacteria are devoid of :

    (A) Cell wall   (B) Nuclear membrane

    (C) Chlorophyll   (D) Both (A) and (B)

62. The microscopic character that helps to identify presence of decay in wood cells :

    (A) Presence of Cambium   (B) Presence of Hyphae

    (C) Decolourisation in wood   (D) Development of Stains

63. Example(s) of beneficial fungi/fungal associations :

    (A) Micorrhizae   (B) Mushrooms

    (C) Lichens   (D) All the above

64. Which of the following is/are edible mushroom(s)?

    (A) *Agaricus bisporus*   (B) *Amanita phalloides*

    (C) *Lentinula edodes*   (D) Both (A) and (C)

65. The Process of conversion of data from analog to digital format is :

    (A) Transformation   (B) Geocoding

    (C) Digitizing   (D) Enhancement

66. DEM is :

    (A) Digital Exterior Model   (B) Digital Elevation Model

    (C) Digitised Elevation Model   (D) Diagnostic Elevation Model

67. Sun is a source of radiation for :

    (A) Active remote sensing   (B) Passive remote sensing

    (C) RADAR   (D) LIDAR

68. The raster data is represented as :

    (A) Points   (B) Line

    (C) Polygon   (D) Pixel

69. The format of vector data is :

    (A) png   (B) jpeg

    (C) tiff   (D) shp

70. NDVI stands for :

    (A) Normalized Differential Vegetation Index

    (B) Normalized Difference Vegetation Index

    (C) National Demographic Vegetation Index

    (D) Natural Difference Vegetation Index

71. The first organised Coconut breeding station was started in India at :

    (A) Patencheru   (B) Dispur

    (C) Kanyakumari   (D) Neeleswaram

72. Natural hybrid between Forastero and Criollo Cocoa is :

    (A) Vazhukka   (B) Trinitario

    (C) Ontario   (D) Chinensis

73. Scientific name of Oil Palm is :

    (A) *Eliaeis guanensis*   (B) *Arachis hypogaea*

    (C) *Brassica nigra*   (D) *Sesamum indicum*

74. A tree which is grown out of its geographical area is termed as :

    (A) Endemic   (B) Land Race

    (C) Rare   (D) Exotic

75. Which of the following bacterium has extensive use in genetic engineering?

    (A) *Agrobacterium tumefaciens*   (B) *Escherichia coli*

    (C) *Streptococcus intermedius*   (D) *Cyano bacteria*

76. Hybrid vigour is also known as :

    (A) Mitosis   (B) Transformation

    (C) Meiosis   (D) Heterosis

77. The extent to which the teeth are bent to either side of the saw blade is called :

    (A) Set   (B) Kerf

    (C) Set and Kerf   (D) Wedge

78. Flumes are also called :

    (A) Wet slides   (B) Booms

    (C) Guage   (D) Dry Slides

79. The angle between the face of a tooth and the line passing through the points of the teeth is :

    (A) Gullet   (B) Space

    (C) Pitch   (D) None of the above

80. For a saw blade of 80 mm breadth and 165 cm length, a thickness suitable is :

   (A) 0.182 mm   (B) 1.82 mm

   (C) 18.2 mm   (D) 2 mm

81. The distance from tooth to tooth measured at points of two adjacent teeth is called :

   (A) Kerf   (B) Gullet

   (C) Pitch   (D) Space

82. Sawn timber which is square and rectangle generally under 15 cm in section is called :

   (A) Pole   (B) Lumber

   (C) Board   (D) Scantling

83. Which one of the following is a community reserve in Kerala?

   (A) Kadalundi-Vallikkunnu   (B) Choolannur

   (C) Chinnar   (D) Mangalavanam

84. Which of the following statements are true for a keystone species?

   (i)   A species that has a disproportionately large effect on its natural environment relative to its abundance

   (ii) They play a critical role in maintaining the structure of an ecological community, affecting many other organisms in an ecosystem and helping to determine the types and numbers of various other species in the community

   (A) Only (i)   (B) Only (ii)

   (C) Both (i) and (ii)   (D) None of these

85. Which one of the following is the first planned eco-tourism site in India?

   (A) Thekkady   (B) Nelliampathy

   (C) Thenmala   (D) Mangalavanam

86. Make cities inclusive, safe, resilient, and sustainable is the motto of :

   (A) SDG 11   (B) SDG 13

   (C) SDG 15   (D) SDG 17

87. The art of pruning and clipping small trees and shrubs to provide attractive ornamental shape is called :

  (A) Bonsai   (B) Trophy

  (C) Topiary   (D) Ikebana

88. Which of the following is not a key feature of the English garden?

  (A) Carpet bed   (B) Rockery

  (C) Herbaceous border   (D) Lawn

89. The wood density of teak is 650 Kg/m³ at 12% moisture content. Its specific gravity will be :

  (A) 0.065   (B) 0.65

  (C) 0.0065   (D) 6.5

90. Shrinkage of wood is maximum in the _____ direction.

  (A) Radial   (B) Tangential

  (C) Longitudinal   (D) None of the above

91. The speed of sound in wood along the longitudinal direction in m/s is :

  (A) 3.3-5.0   (B) 33-50

  (C) 330-500   (D) 3300-5000

92. Unit of coefficient of sound absorption is :

  (A) Sabin   (B) Flexure

  (C) Decibel   (D) No unit

93. A block of green wood has a total weight of 970 g. After oven drying, the weight is 390 g. What was the moisture content when the weight was 970 g?

  (A) 97%   (B) 58%

  (C) 39%   (D) 149%

94. A strip of particle board, 12.5 mm thick and 76 mm wide is loaded at mid-span between supports that are 305 mm apart. When the load reaches 89 N, the deflection is measured as 0.0015 m. The MOE of the particle board is therefore :

    (A) 14,600 MPa   (B) 11,450 MPa

    (C) 2,840 MPa   (D) None of the above

95. Smallest National Park in Kerala :

    (A) Anamudi Shola   (B) Mathikettan Shola

    (C) Pampadum Shola   (D) Eravikulam

96. Rewa National Park in Madhya Pradesh is famous for :

    (A) Cheetah   (B) White tiger

    (C) Barasingha   (D) Nilgai

97. The status and position of distribution of the individuals of a species in the particular habitat is :

    (A) Immigration   (B) Migration

    (C) Emigration   (D) Dispersion

98. In which year Silent Valley was declared a National Park :

    (A) 1967   (B) 1984

    (C) 1975   (D) 1956

99. The morphological character and its change with age are correlated for age determination in animals using :

    (A) Teeth   (B) Horn's ring

    (C) Bone annuli   (D) All of these

100. Which one of the following is not a census method for birds?

    (A) Sieve netting   (B) Mist netting

    (C) Playback response   (D) Dropping counts

———————

SPACE FOR ROUGH WORK

SPACE FOR ROUGH WORK