Enter the Registered Number

Series A

IFG/MORF/503

2025

PAPER – III

(English Version)

A

Question Booklet Sl. No.

Time : **150** Minutes

Max. Marks : **150**

INSTRUCTIONS

1. The Question Paper contains **150** questions. Each question carries **1** mark. For each wrong answer 1/3rd mark will be deducted.

2. Please check the Question Paper and ensure that it contains all the questions. If you find any defect in the Question Paper or OMR Answer Sheet, please get it replaced immediately. The OMR Answer Sheet is in Duplicate. Do not separate the copies. The markings on the first page will automatically come on the second copy also. The first copy (Original) will be retained for evaluation. The second copy (Duplicate) can be taken home by the candidate.

3. Write your Registered Number on the top of the Question Paper. On the right hand corner of the first page, the Question Paper Series is printed as (A) or (B) or (C) or (D). On the OMR Answer Sheet, Side-1 at the right top corner at Part C, the Question Paper Series are printed as (A) (B) (C) (D). **Darken the appropriate circle, as per your Question Paper Series with Blue/Black Ball point pen. Gel Pens/Pencils are not allowed.**

Example to fill up the Question Paper Series on the OMR Answer Sheet

If your Question Paper Series is A, please fill as shown below :

● (B) (C) (D)

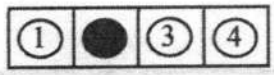
If you have not marked the Question Paper Series on the OMR Answer Sheet, Side-1 at Part C with Blue/Black Ball point pen, or marked in a way that it leads to discrepancy in determining the exact Question Paper Series, then your Answer Sheet will be invalidated without any further notice. No correspondence will be entertained in the matter.

4. Please get the signature of the Invigilator affixed in the space provided at the top of the OMR Answer Sheet. An OMR Answer Sheet without the signature of the Invigilator will be **invalidated**.

SEAL

5. Each question is followed by 4 answer choices. Of these, you have to carefully select one correct answer and mark it on the OMR Answer Sheet by darkening the appropriate circle for the question. If more than one circle is darkened, the answer will not be valued at all. Use Blue or Black Ball point pen to make thick mark to fill the circle completely. Make **no** other stains or marks. Using **Whitener/Blade/Eraser/Chalk Powder** anywhere on the OMR Answer Sheet or any kind of tampering to change the answers on OMR Answer Sheet will lead to **invalidation** of the entire OMR Answer Sheet.

   e.g. : If the answer for Question No. **1** is Answer choice **(2)**, it should be marked as follows :



6. Do **not** fold, tear, wrinkle, tie, staple, do any rough work or make any stray marks on the OMR Answer Sheet. Otherwise your OMR Answer Sheet will be **invalidated**.

7. Do **not** mark answer choices on the Question Paper. Violation of this will be viewed seriously.

8. Rough work may be done on the last page of the Question Paper only. It should not be done anywhere else.

9. Any type of Electronic Devices such as Calculators, Mathematical/Log Tables, Mobile Phones, Bluetooth instruments etc., should not be brought into the Examination Hall. If found in possession of such devices, it will be considered as cheating and strict action taken.

10. As per G.O. Ms. No. 385, GA (Ser.A) Dept., dt: 18/10/2016, if any candidate attempts to use any means to cheat/copy etc., he/she is liable for prosecution (Police Case) and debarment.

11. Candidates should stay in the Examination Hall till expiry of Full Time i.e. 2½ Hours. No candidate shall be allowed to leave the Hall in the middle of the examination under any circumstances.

12. Before leaving the examination hall, the candidate should hand over the OMR Answer Sheet top sheet (Original) to the Invigilator and carry the bottom sheet (Duplicate) for his/her record. Carrying away Original OMR Answer Sheet will be a criminal offence.

1. Which of the following plant groups belongs to Cryptogams ?

(1) Gymnosperms (2) Angiosperms

(3) Pteridophyta (4) Dicotyledons

2. What type of venation is found in Monocotyledons ?

(1) Reticulate venation (2) Parallel venation

(3) Spiral venation (4) No venation

3. Which of the following is an example of a Gymnosperm ?

(1) Mango (2) Neem (3) Pine (4) Sandalwood

4. Which group of plants has seeds enclosed within a fruit ?

(1) Angiosperms (2) Thallophyta

(3) Pteridophyta (4) Gymnosperms

5. Which of the following is an example of a dicot plant ?

(1) Bamboo (2) Mango (3) Grass (4) Wheat

6. What is the function of a pollen tube ?

(1) Photosynthesis (2) Water absorption

(3) Facilitates fertilization (4) None of the above

7. The study of plant classification is known as

(1) Morphology (2) Anatomy (3) Ecology (4) Taxonomy

8. How do Pteridophytes reproduce ?

(1) Spores (2) Seeds (3) Roots (4) Rhizome

9. The main function of xylem in plants is to transport

(1) Food (2) Water and Mineral

(3) Oxygen (4) Hormones

10. Which term refers to the natural home of a plant ?

(1) Habit (2) Ecosystem (3) Habitat (4) Phyllotaxy

11. Which part of the plant is positively geotropic ?

(1) Root (2) Leaves (3) Stem (4) Flower

12. Which type of root is modified for food storage and is thicker in the middle and tapered at both ends ?

(1) Napiform root (2) Tuberous root (3) Fusiform root (4) Conical root

13. Which root modification helps in respiration in mangrove plants ?

(1) Prop roots (2) Stilt roots (3) Nodular roots (4) Pneumatophores

14. Which of the following is a characteristic of prop roots ?

(1) Arise from lower nodes of stem for support

(2) Develop from horizontal branches and grow downwards

(3) Grow vertically upward for respiration

(4) Form nitrogen-fixing nodules

15. Which type of stem modification is found in onions ?

(1) Tuber (2) Rhizome (3) Bulb (4) Corm

16. What is the function of a Phylloclade stem modification ?

(1) Storing water and performing photosynthesis

(2) Supporting climbing plants

(3) Absorbing nutrients from the host

(4) Reproduction

17. What is Phyllotaxy ?

(1) The process of photosynthesis in leaves

(2) The study of leaf venation patterns

(3) The process of leaf abscission

(4) The mode of arrangement of leaves on a stem or branch

18. Which type of leaf has deep incisions reaching the midrib ?

(1) Sessile leaf (2) Pinnate leaf

(3) Compound leaf (4) Simple leaf

19. Which part of the leaf contains stomata ?

(1) Midrib (2) Lamina (3) Petiole (4) Stipules

20. What is the function of stipules in some plants ?

(1) Water absorption (2) Protection of young leaves

(3) Photosynthesis (4) Seed dispersal

21. What is the term for leaves that grow directly from the stem without a petiole ?

(1) Sessile (2) Stipulate (3) Petiolate (4) Whorled

22. What type of margin does a Hibiscus leaf have ?

(1) Lobbed (2) Dentate (3) Entire (4) Serrate

23. What is inflorescence ?

(1) The arrangement of flowers on a floral axis

(2) The process of pollination

(3) The arrangement of leaves on a stem

(4) The structure of the ovary

24. Which type of inflorescence is found in banana ?

(1) Corymb (2) Cyathium (3) Spadix (4) Catkin

25. Hypanthodium a special type of inflorescence is found in which of the following plants ?

(1) Neem (2) Peepal (3) Coriander (4) Sunflower

26. The outermost whorl of a flower is called

(1) Calyx (2) Androecium (3) Gynoecium (4) Corolla

27. Which of the following is the male reproductive part of a flower ?

(1) Stigma (2) Ovary (3) Pistil (4) Androecium

28. Plasmodesmata in plant cells are responsible for

(1) Transport of ions (2) Protein synthesis

(3) Communication between adjacent cells (4) Photosynthesis

29. Which organelle is responsible for modifying, sorting and packaging proteins ?

(1) Mitochondria (2) Golgi apparatus

(3) Endoplasmic reticulum (4) Ribosomes

30. Which of the following structures is involved in protein synthesis ?

(1) Ribosomes (2) Mitochondria (3) Lysosomes (4) Peroxisomes

31. Who first adopted the system of binomial nomenclature ?

(1) Darwin (2) Lamarck (3) Hooke (4) Linnaeus

32. Which plant leaves modified into pitchers to trap insects ?

(1) Opuntia (2) Nepenthes (3) Aloe (4) Pea

33. The central part of the tree trunk, which is often soft or decayed, is called

(1) Cambium (2) Pith (3) Xylem (4) Phloem

34. Which part of the tree trunk is responsible for the formation of new wood tissues ?

(1) Pith (2) Bark (3) Cambium (4) Xylem

35. Which of the following plant tissues does NOT have living cells at maturity ?

(1) Sclerenchyma (2) Collenchyma (3) Parenchyma (4) Phloem

36. Which type of meristematic tissue is responsible for secondary growth in plants ?

(1) Apical meristem (2) Intercalary meristem

(3) Lateral meristem (4) Epidermis

37. What is the role of the coleoptile in monocot seeds ?

(1) Absorbing water

(2) Storing food

(3) Protecting the root

(4) Protecting the plumule during germination

38. Which plant hormone is primarily responsible for fruit and seed development after fertilization ?

(1) Cytokinin (2) Gibberellin (3) Auxin (4) Ethylene

39. What is the term for the type of asexual reproduction where offspring develop from unfertilized eggs ?

(1) Parthenogenesis (2) Apomixis

(3) Polyembryony (4) Somatic embryogenesis

40. What is the purpose of using double haploid technology in plant breeding ?

(1) To induce mutations for trait development

(2) To rapidly achieve homozygosity in breeding lines

(3) To produce plants with increased ploidy levels

(4) To introduce foreign genes into plants

41. Which of the following is NOT a characteristic of asexual reproduction in plants ?

(1) Rapid population increase (2) Genetic variation in offspring

(3) Single parent involvement (4) Offspring are clones of the parent

42. Which modern plant breeding technique involves the fusion of protoplasts from two different plant species to create a hybrid ?

(1) Gene editing

(2) Polyploidization

(3) Somatic hybridization

(4) Marker-assisted selection

43. In plant tissue culture, what is the term for a mass of undifferentiated cells from which new plants can develop ?

(1) Callus (2) Embryoid (3) Protoplast (4) Explant

44. Which of the following factors does NOT directly affect the rate of transpiration in plants ?

(1) Wind speed (2) Soil pH (3) Temperature (4) Humidity

45. Which pigment is primarily responsible for capturing light energy during photosynthesis ?

(1) Carotene (2) Xanthophyll (3) Chlorophyll b (4) Chlorophyll a

46. Which enzyme is crucial for carbon fixation during photosynthesis ?

(1) Ribulose-1, 5- bisphosphate carboxylase/oxygenase (RuBisCO)

(2) Nitrate reductase

(3) Pyruvate kinase

(4) ATP synthase

47. Which plant hormone is known to induce seed dormancy and help plants withstand stress conditions ?

(1) Auxin (2) Gibberellin (3) Abscisic acid (4) Ethylene

48. Which plant growth regulator is commonly used to induce rooting in plant cuttings ?

(1) Gibberellin (2) Cytokinin (3) Abscisic acid (4) Auxin

49. In the context of plant genetics, what is the primary function of messenger RNA (mRNA) ?

(1) Catalyzes biochemical reactions

(2) Carries genetic information from DNA to ribosomes

(3) Transports amino acids to ribosomes

(4) Forms the structural components of ribosomes

50. Which nutrient deficiency causes young leaves to turn uniformly yellowish-green or chlorotic in plants ?

(1) Nitrogen (2) Sulfur (3) Iron (4) Magnesium

51. Which of the following is used as a biocontrol agent against caterpillars of butterflies ?

(1) Trichoderma

(2) Streptococcus

(3) Bacillus thuringiensis

(4) Saccharomyces cerevisiae

52. Which fungal pathogen caused the brown spot disease that led to the Bengal Famine ?

(1) Helminthosporium oryzae (Bipolaris oryzae)

(2) Alternaria solani

(3) Phytophthora infestans

(4) Puccinia graminis

53. What are regions called that are exceptionally rich in species diversity ?

(1) Biomes (2) Hotspots (3) Reserves (4) Biospheres

54. Which is the largest animal found in India ?

(1) Tiger (2) Leopard (3) Rhino (4) Elephant

55. The Lankamala Wildlife Sanctuary is home to which rare species ?

(1) Great Indian Bustard (2) Olive Ridley Turtle

(3) Jerdon's Courser (4) Indian Peafowl

56. Name of the Biosphere Reserve in Andhra Pradesh

(1) Marripakala Biosphere Reserve

(2) Seshachalam Biosphere Reserve

(3) Papikonda Biosphere Reserve

(4) Kambalakonda Biosphere Reserve

57. What is an example of ex-situ conservation ?

(1) National Parks (2) Wildlife Sanctuaries

(3) Zoological Parks (4) Biosphere Reserves

58. Which of the following is a Ramsar wetland site in Andhra Pradesh ?

(1) Kolleru Wildlife Sanctuary (2) Pulicat Wildlife Sanctuary

(3) Nelapattu Wildlife Sanctuary (4) None of the above

59. Which one is considered a 'keystone species' in Indian forests ?

(1) Neem Tree (2) Teak Tree (3) Mango Tree (4) Ficus Tree

60. Which National Park is home to the only Asiatic Lion population ?

(1) Jim Corbett National Park (2) Ranathambore National Park

(3) Khazaranga National Park (4) Gir National Park

61. Which Indian State has the highest species diversity ?

(1) Gujarat (2) Kerala (3) Arunachal Pradesh (4) Rajasthan

62. Which organization maintains the Red List of threatened species ?

(1) WWF (2) IUCN (3) UNEP (4) CITES

63. Who popularized the term "Biodiversity" ?

(1) Edward Wilson (2) Charles Darwin

(3) Robert May (4) Alfred Wallace

64. Which group has the highest species diversity among animals ?

(1) Fishes (2) Mammals (3) Birds (4) Insects

65. Which international agreement was signed to conserve biodiversity ?

(1) Kyoto Protocol (2) Paris Agreement

(3) Convention on Biological Diversity (4) Rio + 20 Summit

66. Which biome in India is characterized by high rainfall, dense vegetation and rich biodiversity ?

(1) Deciduous Forest (2) Tropical Rainforest

(3) Alpine Tundra (4) Thar Desert

67. Which Indian biome is best known for its salt-tolerant trees and aquatic biodiversity ?

(1) Deciduous Forests
(2) Grasslands
(3) Mangroves
(4) Alpine Meadows

68. Which of the following is NOT an abiotic factor influencing biomes ?

(1) Predator population
(2) Soil type
(3) Rainfall
(4) Temperature

69. Which of the following is the most significant cause of biodiversity loss ?

(1) Overgrazing
(2) Soil erosion
(3) Air pollution
(4) Habitat destruction and fragmentation

70. Which of the following is an example of co-extinction ?

(1) Introduction of an invasive species replacing a native species
(2) Extinction of a pollinator leading to the extinction of its plant species
(3) Over-harvesting of fish leading to their population decline
(4) Loss of tigers due to hunting

71. Which legislation in India recognizes the rights of forest-dwelling communities to land and other resources ?

(1) Wildlife Protection Act, 1972
(2) Forest Conservation Act, 1980
(3) Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006
(4) Environmental Protection Act, 1986

72. The Chipko Movement was initiated to

(1) Promote mining in forest areas
(2) Protest against large dam projects
(3) Prevent deforestation and conserve forests
(4) Support timber extraction industries

73. What is a common environmental problem associated with the construction of large dams ?

(1) Increased biodiversity

(2) Reduction in greenhouse gas emissions

(3) Submergence of forests and wildlife habitats

(4) Improved groundwater recharge

74. What percentage of India's surface water is utilized by the agricultural sector ?

(1) 0.75 (2) 0.89 (3) 0.65 (4) 0.5

75. Which plateau is known as the mineral heartland of India ?

(1) Deccan Plateau (2) Malwa Plateau

(3) Chota Nagpur Plateau (4) Shillong Plateau

76. Which of the following is a direct consequence of deforestation due to mining in India ?

(1) Increased groundwater recharge (2) Loss of habitat for wildlife

(3) Enhanced soil fertility (4) Expansion of agricultural lands

77. Which of the following strategies is essential for the sustainable management of mineral resources in India ?

(1) Rapid depletion of high-grade ores

(2) Recycling and reuse of metals

(3) Ignoring environmental regulations

(4) Increasing reliance on imported minerals

78. Carbon dioxide acceptor in C4 plants

(1) Ribulose-1-5 diposhphate (2) Phosphoenol pyravate

(3) Oxaloactate (4) None of the above

79. Which of the following is classified as a non-conventional source of energy ?

(1) Coal (2) Natural Gas

(3) Solar Energy (4) Petroleum

80. What is a significant challenge hindering India's transition to net-zero emissions ?

(1) Lack of renewable energy resources (2) Heavy reliance on coal

(3) Insufficient government policies (4) High cost of nuclear energy

81. As of 2024, which energy source accounts for the largest share of India's electricity generation ?

(1) Natural Gas (2) Coal (3) Solar Power (4) Nuclear Energy

82. Which form of land degradation is most prevalent in India ?

(1) Soil erosion (2) Soil subsidence

(3) Landslides (4) Desertification

83. Which State in India has the largest area affected by soil erosion ?

(1) Rajasthan (2) Madhya Pradesh (3) Maharashtra (4) Uttar Pradesh

84. Which type of soil in India is known for its self-ploughing characteristic due to high clay content ?

(1) Black soil (2) Red soil (3) Alluvial soil (4) Laterite soil

85. What is the term for land left uncultivated for one or less than one agricultural year ?

(1) Waste land (2) Fallow land (3) Barren land (4) Pasture land

86. Which organization publishes the 'Desertification and Land Degradation Atlas of India' ?

(1) Ministry of Environment, Forest and Climate Change

(2) Indian Space Research Organisation (ISRO)

(3) National Remote Sensing Centre

(4) Space Applications Centre

87. The art and science of cultivating forests crops

(1) Silviculture (2) Horticulture (3) Apiculture (4) Agriculture

88. What is the dominant forest type in Andhra Pradesh ?

(1) Tropical and Deciduous Forests (2) Mangrove Forests

(3) Littoral and Swamp (4) Semi-evergreen Forests

89. Which type of forest is found in the Coringa Wildlife Sanctuary ?

(1) Evergreen Forest
(2) Tropical Dry Deciduous Forest
(3) Mangrove Forest
(4) Semi-evergreen Forests

90. Which of the following is an example of edaphic factors ?

(1) Rainfall
(2) Soil composition
(3) Temperature
(4) Altitude

91. Which of the following best describes carbon sequestration ?

(1) Absorption and storage of carbon in forests
(2) Burning of fossil fuels
(3) Chemical pollution of forests
(4) Release of carbon into the atmosphere

92. What is the main advantage of natural regeneration ?

(1) High cost of maintenance
(2) Increased genetic diversity
(3) Requires continuous human intervention
(4) Reduced adaptability to local conditions

93. Which silvicultural system relies entirely on natural regeneration ?

(1) Clear-cutting system
(2) Shelter wood system
(3) Selective felling system
(4) Coppice system

94. What is the primary objective of tending operations in forestry ?

(1) To promote the growth of selected trees
(2) To remove diseased trees
(3) To plant new tree species
(4) To increase tree diversity

95. What is the primary goal of thinning in forestry ?

(1) To increase the number of trees per unit area

(2) To completely clear the forest for new plantations

(3) To allow trees to compete naturally without intervention

(4) To remove weaker trees and enhance the growth of superior ones

96. What is a distinctive feature of Red Sanders (Pterocarpus santalinus) ?

(1) It thrives in arid and rocky regions

(2) It requires waterlogged conditions

(3) It is mainly used for pulpwood production

(4) It is an evergreen tree

97. Sandalwood (Santalum album) is classified as which type of plant in relation to its host dependency ?

(1) Obligate parasite

(2) Partial root parasite

(3) Epiphyte

(4) Free-living tree

98. Which soil type is most suitable for Tectona grandis growth ?

(1) Saline and alkaline soils

(2) Sandy desert soils

(3) Lateritic and well-drained alluvial soils

(4) Waterlogged clayey soils

99. What is the flowering cycle of Dendrocalamus strictus ?

(1) Every 5-10 years

(2) Every 15-20 years

(3) Every 30-50 years

(4) Every 60-100 years

100. Casuarina equisetifolia improves soil fertility through

(1) Nitrogen fixation in symbiosis with Frankia bacteria

(2) Mycorrhizal association with fungi

(3) Accumulating organic matter from fallen leaves

(4) Absorbing minerals from deep soil layers

101. Casuarina equisetifolia is commonly used for which of the following purposes ?

(1) Fruit production

(2) Windbreaks and coastal protection

(3) Timber production

(4) Ornamental gardening

102. Which planting technique is most suitable for waterlogged soils in India ?

(1) Pit planting

(2) Mound planting

(3) Trench planting

(4) Dibbling

103. What is the ideal pH range for most forest nursery soils in India ?

(1) 0.5 to 5.5

(2) 5.5 to 6.5

(3) 6.5 to 7.5

(4) 7.5 to 8.5

104. What is the primary purpose of hardening off seedlings in a forest nursery ?

(1) To accelerate growth before transplantation

(2) To reduce water content in tissues

(3) To acclimate seedlings to external environmental conditions

(4) To increase leaf production

105. In the context of root trainers, what is the function of the open-ended design at the bottom of each cell ?

(1) To allow excess water drainage

(2) To enable air pruning of roots

(3) To facilitate nutrient leaching

(4) To provide aeration to the soil

106. In grafting practices, what is the significance of aligning the vascular cambium layers of the scion and rootstock ?

(1) To enhance photosynthesis

(2) To ensure successful graft union

(3) To promote flower development

(4) To increase fruit size

107. What is a key advantage of using sunken nursery beds in dry and windy areas ?

(1) They increase water evaporation

(2) They facilitate water retention and protect seedlings from wind

(3) They elevate seedlings above ground level

(4) They promote rapid water drainage

108. Which of the following soil types is considered ideal for nursery bed preparation ?

(1) Clayey soil

(2) Red soil mixed with clay

(3) Loam or sandy loam soil

(4) Rocky soil

109. What is the primary purpose of fumigating nursery beds before sowing seeds ?

(1) To increase soil fertility

(2) To eliminate soil-borne pathogens and pests

(3) To enhance seed germination rates

(4) To adjust soil pH levels

110. In the context of nursery tending, what does the term 'pricking out' refer to ?

(1) Removing weeds from nursery beds

(2) Transplanting seedlings from seedbeds to individual containers

(3) Pruning the roots of seedlings

(4) Applying fertilizers to young plants

111. What is the purpose of Shelterbelts in Extension Forestry ?

(1) To protect crops and soil from wind and erosion

(2) To provide shade for livestock

(3) To promote commercial timber production

(4) To increase groundwater levels

112. Which Agroforestry system involves combining agricultural crops with tree crops ?

(1) Silvopastoral System
(2) Agrosilvopastoral System
(3) Agrisilvicultural System
(4) Mixed Wood Lots

113. What is the main purpose of Apiculture with Trees in Agroforestry ?

(1) To grow trees that provide fruits for local communities
(2) To increase honey production by planting nectar-rich trees
(3) To plant trees that prevent soil erosion
(4) To grow trees that act as windbreaks

114. What is a major reason why mixed crops are preferred over pure crops ?

(1) They minimize pest attacks and soil deterioration
(2) They allow for quicker harvesting
(3) They are easier to plant
(4) They require less maintenance

115. Which government scheme promotes afforestation under Social Forestry ?

(1) PM-KISAN
(2) CAMPA
(3) Swachh Bharat Abhiyan
(4) MGNREGA

116. Which Indian program focuses on increasing forest cover through community participation ?

(1) National Mission for a Green India
(2) National Afforestation Programme
(3) Joint Forest Management
(4) Social Forestry Scheme

117. In which agro-ecological zone of India is the practice of Jhum cultivation (shifting cultivation) predominantly observed ?

(1) Indo-Gangetic Plains
(2) Western Ghats
(3) Eastern Himalayan Region
(4) Deccan Plateau

118. Which agroforestry system in the Himalayan region integrates tree cultivation with agricultural crops, allowing farmers to grow crops alongside young trees ?

(1) Silvopastoral System
(2) Taungya System
(3) Alley Cropping
(4) Windbreaks

119. Allelopathy refers to

(1) The symbiotic relationship between plants
(2) The absorption of nutrients by plant roots
(3) The process of pollination in flowering plants
(4) The effect of chemicals released by one plant on the growth of another

120. What is the principal aim of the National Forest Policy, 1988 ?

(1) Revenue generation from forests
(2) Ensuring environmental stability and ecological balance
(3) Expansion of agricultural lands
(4) Increasing timber production

121. What is the function of Cation Exchange Capacity (CEC) in soil ?

(1) It determines the soil's porosity
(2) It measures the soil's ability to retain and exchange nutrients
(3) It affects the soil's color and texture
(4) It influences soil erosion

122. Which of the following elements is a macronutrient required for plant growth ?

(1) Molybdenum (2) Zinc (3) Boron (4) Nitrogen

123. What is the primary source of organic carbon in soil ?

(1) Decomposed plant and animal matter
(2) Atmospheric carbon dioxide
(3) Weathering of parent rock
(4) Chemical fertilizers

124. Which soil property is most crucial for plant growth ?

(1) Soil color

(2) Soil density

(3) Soil texture

(4) Soil electrical conductivity

125. What is the primary function of phosphorus in plants ?

(1) Root development

(2) Cell division

(3) Chlorophyll formation

(4) Water retention

126. Which of the following is a primary soil-forming process ?

(1) Physical weathering

(2) Chemical weathering

(3) Biological weathering

(4) All of the above

127. What is the parent material of black soil (regur) ?

(1) Sandstone

(2) Shale

(3) Basaltic lava

(4) Limestone

128. What is the primary reason for the red color in red soil ?

(1) High iron oxide content

(2) High calcium carbonate

(3) High organic matter

(4) High clay content

129. Which of the following is a major component of Soil Organic Matter (SOM) ?

(1) Lignin (2) Sand (3) Clay (4) Iron

130. Which soil amendment is commonly used to reduce soil acidity ?

(1) Urea (2) Lime (3) Gypsum (4) Phosphoric acid

131. Quartizite is a

(1) Sedimentary rock

(2) Metamorphic rock

(3) Igneous rock

(4) Fossiliferous rock

132. Which geological formation in India is considered the oldest, containing rocks that date back to over 3.5 billion years ?

(1) Dharwar System
(2) Aravalli System
(3) Archean System
(4) Cuddapah System

133. The term 'Purana' rock system in Indian geology refers to which of the following ?

(1) Archean and Dharwar Systems
(2) Cuddapah and Vindhyan Systems
(3) Gondwana and Deccan Trap Systems
(4) Siwalik and Karewa Systems

134. Which is the finest quality of iron ore ?

(1) Hematite (2) Magnetite (3) Limonite (4) Siderite

135. Which Indian State is the leading producer of mica ?

(1) Jharkhand (2) Rajasthan (3) Andhra Pradesh (4) Odisha

136. Which of the following statements about the Earth's inner core is correct ?

(1) It is in a liquid state composed mainly of iron and nickel
(2) It is in a solid state composed mainly of iron and nickel
(3) It is in a semi-solid state composed mainly of silicate rocks
(4) It is in a gaseous state composed mainly of hydrogen and helium

137. Which layer of the Earth is characterized by plasticity, allowing tectonic plates to move ?

(1) Lithosphere (2) Asthenosphere (3) Mesosphere (4) Outer Core

138. Which layer of the Earth is responsible for the generation of its magnetic field ?

(1) Crust (2) Mantle (3) Outer Core (4) Inner Core

139. Which type of rock is formed due to the deposition and compression of sediments ?

(1) Metamorphic (2) Volcanic (3) Igneous (4) Sedimentary

140. What does a high Biochemical Oxygen Demand (BOD) indicate about a water sample ?

(1) Low level of microbial activity

(2) High level of organic pollution

(3) Presence of heavy metals

(4) High oxygen content

141. What role do forested catchments play in the context of rainwater harvesting and groundwater recharge ?

(1) They decrease infiltration rates due to dense vegetation

(2) They act as natural sponges, absorbing rainfall and facilitating groundwater recharge

(3) They primarily contribute to surface runoff, reducing groundwater recharge

(4) They have minimal impact on the hydrological cycle

142. Which term describes the measure of a soil's ability to transmit water when fully saturated ?

(1) Porosity

(2) Permeability

(3) Hydraulic conductivity

(4) Specific yield

143. Which of the following is a primary contributor to eutrophication in water bodies ?

(1) Heavy metals

(2) Nitrates and phosphates

(3) Pathogenic microorganisms

(4) Sediments

144. Which hydrological process is enhanced by afforestation activities in watershed areas ?

(1) Surface runoff

(2) Soil erosion

(3) Evapotranspiration

(4) Groundwater recharge

145. Which geological formation is least likely to serve as a good aquifer ?

(1) Sandstone

(2) Limestone

(3) Shale

(4) Gravel

146. In the context of water conservation, what is the primary purpose of a 'check dam' ?

(1) To divert river flow for navigation

(2) To store large volumes of water for urban use

(3) To recharge groundwater and prevent soil erosion

(4) To generate hydroelectric power

147. Which of the following is a primary objective of watershed management in forested regions of India ?

(1) Expansion of urban infrastructure

(2) Soil and water conservation to maintain ecological balance

(3) Promotion of industrial development

(4) Reduction of forest cover for agriculture

148. Which Indian forest type is most effective in cloud interception and moisture capture, contributing significantly to local hydrology ?

(1) Tropical dry deciduous forests

(2) Mangrove forests

(3) Montane cloud forests

(4) Thorn forests

149. Which of the following methods is used to estimate average precipitation over an area ?

(1) Arithmetic mean method

(2) Thiessen polygon method

(3) Isohyetal method

(4) All of the above

150. How does the presence of leaf litter in forested areas influence soil moisture dynamics ?

(1) It decreases soil moisture by absorbing rainfall

(2) It increases evaporation rates from the soil surface

(3) It enhances soil moisture retention by reducing evaporation and promoting infiltration

(4) It has no significant effect on soil moisture

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