Q1. Pteridophytes differ from mosses / bryophytes in possessing: **1 Mark**

A Independent gametophyte.
B Well developed vascular system.
C Archegonia.
D Flagellate spermatozoids.

Q2. Gel electrophoresis is used for: **1 Mark**

A Cutting of DNA into fragments.
B Separation of DNA fragments according to their size.
C Construction of recombinant DNA by joining with cloning vectors.
D Isolation of DNA molecule.

Q3. In living beings, ammonia is converted into urea through. **1 Mark**

A Ornithine cycle.
B Citrulline cycle.
C Fumarine cycle.
D Arginine cycle.

Q4. Loop of Henle is concerned with: **1 Mark**

A Excretory system
B Reproductive system
C Nervous system
D Muscular system

Q5. **Directions:** In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as: **1 Mark**

Assertion: Some bacteria have the capacity to retain Gram stain after treatment with acid alcohol
Reason: They are known as gram positive as they are attracted towards positive pole under influence of electric current

A If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
B If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
C If Assertion is true but Reason is false.
D If both Assertion and Reason are false.

Q6. The pyrenoids are made up of: **1 Mark**

A Proteinaceous centre and starchy sheath.
B Core of protein surrounded by fatty sheath.
C Core of starch surrounded by sheath of protein.
D Core of nucleic acid surrounded by protein sheath.

Q7. **Directions:** In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as: **1 Mark**

Assertion: Chemotaxonomy is classifying organisms at molecular level.
Reason: Cytotaxonomy is classifying organisms at cellular level.

A If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
B If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
C If Assertion is true but Reason is false.
D If both Assertion and Reason are false.

Q8. Lactic dehydrogenase (LDH) which catalyzes pyruvate to lactate is an example of: **1 Mark**

A Apoenzyme
B Antienzyme
C Isoenzyme
D Coenzyme

Q9. Bryophytes are amphibians because: **1 Mark**

A They require a layer of water for carrying out sexual reproduction.
B They occur in damp places.
C They are mostly aquatic.
D All of the above.

Q10. **Directions:** In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as: **1 Mark**

Assertion: Erythrocytic merozoites form gametocytes.

Reason: Gametocytes are of two types - male and female.

A If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
B If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
C If Assertion is true but Reason is false.
D If both Assertion and Reason are false.

Q11. Reabsorption of water in distal parts of kidney tubules/urine formation is controlled by: **1 Mark**

A Calcitonin **B** Relaxin **C** Vasopressin **D** Oxytocin

Q12. The portion of nephron which is relatively impermeable to water is: **1 Mark**

A Collecting tubule
B Ascending limb of loop of henle
C Distal tubule
D Loop of Henle

Q13. Which of the following is used to grow microbes? **1 Mark**

A Laminaria. **B** Gelidium. **C** Chlorella. **D** Sargassum.

Q14. Cyanobacteria are classified under: **1 Mark**

A Protista. **B** Plantae. **C** Monera. **D** Algae.

Q15. The seedless vascular plants whose sporophytes are larger than their small and independent gametophytes are: **1 Mark**

A Pteridophytes. **B** Angiosperms. **C** Gymnosperms. **D** None of these.

Q16. A well developed archegonium with neck consisting of 4-6 rows of neck canal cells, characterises: **1 Mark**

A Gymnosperms only.
B Bryophytes and pteridophytes.
C Pteridophytes and gymnosperms.
D Gymnosperms and flowering plants.

Q17. Phenetic classification of organisms is based on: **1 Mark**

A Dendrogram based on DNA characteristics.
B Sexual characteristics.
C Observable characteristics of existing organisms.
D The ancestral lineage of existing organisms.

Q18. **Directions:** In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as: **1 Mark**
Assertion: Euglena is studied as an animal as well as a plant.
Reason: Euglena is more an animal than a plant.

A If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
B If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
C If Assertion is true but Reason is false.
D If both Assertion and Reason are false.

Q19. Which of the following is not a taxon but category? **1 Mark**

A Division **B** Dicotylendons **C** Angiosperms **D** Polypetalae

Q20. **Directions:** In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as: **1 Mark**
Assertion: Plasmodium causes disease in female Anopheles mosquitoes.
Reason: Female Anopheles mosquitoes feed on plasmodial blood.

A If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
B If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
C If Assertion is true but Reason is false.
D If both Assertion and Reason are false.

Q21. Which of the following statements is not true for plasma membrane? **1 Mark**

A It is present in both plant and animal cell.
B Lipid is present as a bilayer in it.
C Proteins are present integrated as well as loosely associated with the lipid bilayer.
D Carbohydrate is never found in it.

Q22. Which among the following do you consider as the best evidence to show that two species of algae are closely related? **1 Mark**

A They both respire and release CO2.
B They both are found in the same habitat.
C They both reproduce asexually.
D They both have same type of pigments.

Q23. **Directions:** In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as: **1 Mark**

Assertion: Cyanobacteria are unicellular and colonial

Reason: Blue green algae are chemosynthetic.

A If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
B If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
C If Assertion is true but Reason is false.
D If both Assertion and Reason are false.

Q24. Companion cells in angiosperms are associated with: **1 Mark**

A Xylem vessels. **B** Guard cells. **C** Xylem tracheids. **D** Sieve tubes.

Q25. Some vascular bundles are described as open because these: **1 Mark**

A Are not surrounded by pericycle.
B Are surrounded by pericycle but no endodermis.
C Are capable of producing secondary xylem and phloem.
D Possess conjunctive tissue between xylem and phloem.

Q26. Reabsorption of sodium and chloride ions occurs in: **1 Mark**

A Ascending limb of Henle's loopt.
B Descending limb of Henle's loop.
C Proximal convoluted tubule.
D Distal convoluted tubule.

Q27. A patient suffering from cholera is given saline drip because: **1 Mark**

A Cl^- ions are important component of blood plasma.
B Na^+ ions help to retain water in the body.
C Na^+ ions are important in transport of substances across membrane.
D Cl^- ions help in the formation of HCl in stomach for digestion.

Q28. **Directions:** In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as: **1 Mark**

Assertion: Euglena is called as plant animal.

Reason: Pellicle of Euglena is made up of cellulose and not protein

A If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
B If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
C If Assertion is true but Reason is false.
D If both Assertion and Reason are false.

Q29. **Directions:** In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as: **1 Mark**

Assertion: Bacteria do not always move with the help of flagella.

Reason: Rotary motion of flagellum is employed by flagellated bacteria for movement.

A If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
B If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
C If Assertion is true but Reason is false.
D If both Assertion and Reason are false.

Q30. **Directions:** In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as: **1 Mark**

Assertion: Botany deals with the study of plants and zoology deals with the study of animals.

Reason: Biology is the study of living beings.

A If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
B If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
C If Assertion is true but Reason is false.
D If both Assertion and Reason are false.

Q31. One function of parasympathetic nervous system is: **1 Mark**

A Contraction of hair muscles.
B Stimulation of sweat glands.
C Acceleration of heart beat.
D Constriction of pupil.

Q32. The optic lobes in humans are represented by the corpora: **1 Mark**

A Bigemina **B** Arenacea **C** Striata **D** Quadrigemina

Q33. The chief water conducting elements of xylem in gymnosperms are: **1 Mark**

A Tracheids. B Fibres. C Transfusion tissue. D None of these.

Q34. Enzymes, vitamins and hormones are common in: **1 Mark**

A Enhancing oxidative metabolism.
B Being synthesised in the body of organisms.
C Being proteinaceous.
D Regulating metabolism.

Q35. Carrier ions like Na facilitate the absorption of substances like: **1 Mark**

A Amino acids and glucose.
B Glucose and fatty acids.
C Fatty acids and glycerol.
D Fructose and some amino acid.

Q36. In Passiflora, the tendrils are modification of: **1 Mark**

A Axillary buds B Upper leaflets C Whole leaves D Stipules

Q37. Plastids differ from mitochondria on the basis of which of the following features? **1 Mark**

A Presence of two layers of membrane.
B Presence of ribosome.
C Presence of thyla koids.
D Presence of DNA.

Q38. A protein having both structural and enzymatic traits is: **1 Mark**

A Collagen B Trypsin C Myosin D Actin

Q39. A Prothallus is: **1 Mark**

A A structure in pteridophytes formed before the thallus develops.
B A sporophytic free living structure formed in pteridophytes.
C A gametophyte free living structure formed in pteridophytes.
D A primitive structure formed after fertilization in pteridophytes.

Q40. Which one of the following statements is correct? **1 Mark**

A Neurons regulate endocrine activity, but not vice versa.
B Endocrine glands regulate neural activity and nervous system regulates endocrine glands.
C Neither hormones control neural activity nor the neurons control endocrine activity.
D Endocrine glands regulate neural activity, but not vice versa.

Q41. Mannitol (sugar alcohol) is the stored food in: **1 Mark**

A Chara B Porphyra C Fucus D Gracilaria

Q42. The common mode of sexual reproduction in Chlamydomonas is: **1 Mark**

A Isogamous. B Anisogamous. C Oogamous. D Hologamous.

Q43. If kidneys fail to reabsorb water, the effect on tissue would. **1 Mark**

A Remain unaffected.
B Shrink and shrivel.
C Absorb water from blood plasma.
D Take more O_2 from blood.

Q44. The absence of chlorophyll, in the lowermost cell of Ulothrix, shows: **1 Mark**

A Functional fission.
B Tissue formation.
C Cell characteristic.
D Beginning of labour division.

Q45. Which of the following characteristic of living beings, can also be observed in some non-livings? **1 Mark**

A Respiration. B Reproduction. C Growth. D Stimulation.

Q46. **Directions:** In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as: **1 Mark**

Assertion: Bacteria are classified among plants.

Reason: They have cell walls.

A If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
B If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
C If Assertion is true but Reason is false.
D If both Assertion and Reason are false.

Q47. In Chlorophyceae, sexual reproduction occurs by: **1 Mark**

A Isogamy and anisogamy.
B Isogamy, anisogamy and oogamy.
C Oogamy only.
D Anisogamy and oogamy.

Q48. The common bottle cork is a product of: **1 Mark**

A Phellogen. **B** Vascular cambium. **C** Dermatogen. **D** Xylem.

Q49. It is said that elemental composition of living organisms and that of inanimate objects (like earth's crust) are similar in the sense that all the major elements are present in both. Then what would be the difference between these two groups? **1 Mark**
Choose a correct answer from among the following:

A Living organisms have more gold in them than inanimate objects.
B Living organisms have more water in their body than inanimate objects.
C Living organisms have more carbon, oxygen and hydrogen per unit mass than inanimate objects.
D Living organisms have more calcium in them than inanimate objects.

Q50. Golgi bodies are involved in: **1 Mark**

A Modification of proteins.
B Synthesis of glycolipids.
C Recycling of broken plasma membrane during endocytosis.
D All of the above.

Q51. Pyrenoids are the centres for formation of: **1 Mark**

A Porphyra. **B** Enzymes. **C** Fat. **D** Starch.

Q52. Systematics deals with: **1 Mark**

A Nomenclature of new organisms.
B Evolutionary relationship between organisms.
C Identification of newly discovered organisms.
D All of these.

Q53. **Directions:** In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as: **1 Mark**
Assertion: Cell wall of chrysophytes are indestructible.
Reason: Cell walls of chrysophytes have layer of magnesium pectate embedded in it.

A If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
B If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
C If Assertion is true but Reason is false.
D If both Assertion and Reason are false.

Q54. Interfascicular cambium and cork cambium are formed due to: **1 Mark**

A Cell division. **B** Cell differentiation. **C** Cell dedifferentiation. **D** Redifferentiation.

Q55. In which of the following taxonomy, equal weightage is given to each of thousands of characters that a taxon exhibits? **1 Mark**

A Classical **B** Chemotaxonomy **C** Numerical taxonomy **D** Alpha taxonomy

Q56. In angiosperm, characters of flowers are used in classification because: **1 Mark**

A Flowers are attractive.
B Flowers are large.
C Characters of flowers are conservative.
D None of the above.

Q57. If the diploid number of a flowering plant is 36. What would be the chromosome number in its endosperm: **1 Mark**

A 36 **B** 18 **C** 54 **D** 72

Q58. All plastids have similar structure because they can: **1 Mark**

A Store starch, lipids and proteins.
B Get transformed from one type to another.
C Perform same function.
D Be present together.

Q59. Sodium depletion occurs in excessive sweating, and cannot be corrected by drinking water alone. When uncorrected, it may lead to: **1 Mark**

A Swelling of ankles and feet
B Increase of urea in blood

C Muscle cramps, loss of energy, fatigue and faintness

D Renal failure

Q60. Which of the following statements is true about bryophytes? **1 Mark**

A The sporophyte is dependent on gametophyte for support, shelter and nutrition.

B The sporophyte is haploid.

C The gametophyte is diploid.

D The gametophyte is dependent on sporophyte for support, shelte and nutrition.

Q61. What is the function of endosperm in seeds? **1 Mark**

A Providing nutrition during dormant phase.

B Providing nutrition during germination.

C Providing nutrition to new leaves.

D All of the above.

Q62. Which cutaneous gland of pigeon produces 'pigeon milk'? **1 Mark**

A Uropygeal

B Preen

C It is not produced by cutaneous but the crop gland

D None of the above

Q63. Which of the following shows no segregation of plant parts? **1 Mark**

A Algae. **B** Bryophlta. **C** Pteridophyta. **D** Gymnosperm.

Q64. **Directions:** In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as: **1 Mark**

Assertion: The protoplasm of plasmodial slime mould is considered purest in the world.

Reason: Protoplasm of plasmodium is differentiated into an outer enucleated and central nucleated portions.

A If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

B If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.

C If Assertion is true but Reason is false.

D If both Assertion and Reason are false.

Q65. Megasporophyll of gymnosperms is homologous to ______ of angiosperms. **1 Mark**

A Stamen **B** Carpel **C** Sepal **D** Petal

Q66. Vessels are found in: **1 Mark**

A All angiosperms and some gymnosperms.

B Most of angiosperms and few gymnosperms.

C All angiosperms and few gymnosperms and some pteridophytes.

D All pteridophytes.

Q67. **Directions:** In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as: **1 Mark**

Assertion: Study of internal structure is called anatomy.

Reason: It is useful for phylogentic study.

A If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

B If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.

C If Assertion is true but Reason is false.

D If both Assertion and Reason are false.

Q68. **Directions:** In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as: **1 Mark**

Assertion: Slime moulds show alternation of generation.

Reason: The sporangia bearing slime mouldsrepresent haplophase.

A If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

B If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.

C If Assertion is true but Reason is false.

D If both Assertion and Reason are false.

Q69. **Directions:** In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as: **1 Mark**

Assertion: Bacillus butschli is true bacterium.

Reason: Its cell wall is composed of acetyl muramic acid

A If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

B If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.

C If Assertion is true but Reason is false. **D** If both Assertion and Reason are false.

Q70. **Directions:** In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as: **1 Mark**

Assertion: Living organisms are regarded as closed systems.

Reason: Energy of living organisms can not be lost or gained from external environment.

A If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
B If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
C If Assertion is true but Reason is false.
D If both Assertion and Reason are false.

Q71. An aminoacid under certain conditions have both positive and negative charges simultaneously in the same molecule. Such a form of aminoacid is called: **1 Mark**

A Acidic form. **B** Basic form. **C** Aromatic form. **D** Zwitterionic form.

Q72. Most water and salts are reabsorbed in: **1 Mark**

A DCT. **B** Bowman s capsule. **C** PCT. **D** DCT and PCT.

Q73. When a dicot leaf is exposed to sunlight, the light rays first pass through the epidermis and then through: **1 Mark**

A Lower epidermis. **B** Spongy parenchyma. **C** Palisade parenchyma. **D** Vascular bundles.

Q74. **Directions:** In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as: **1 Mark**

Assertion: Chemosynthetic autotrophic bacteria oxidise various inorganic substances.

Reason: Energy released during oxidation is used in ATP production.

A If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
B If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
C If Assertion is true but Reason is false.
D If both Assertion and Reason are false.

Q75. Endodermis cells are rich in: **1 Mark**

A Cellulose **B** Starch grains **C** Fibers **D** Resins and wax

Q76. A group of related genera with still less number of similarities as compared to genus and species constitutes: **1 Mark**

A Division **B** Family **C** Order **D** Class

Q77. A narrow layer of thin walled cells found between phloem/ bark and wood of a dicot is: **1 Mark**

A Cork cambium. **B** Vascular cambium. **C** Endodermis. **D** Pericycle.

Q78. Vessels differ from tracheids. **1 Mark**

A In being living.
B In being derived from a single cell.
C In that they consist of vertical row of cells with cross walls dissolved.
D In coducting water and minerals.

Q79. **Directions:** In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as: **1 Mark**

Assertion: Sporozoans may have silica shells on their surface.

Reason: Shells of sporozoans render protection from acidic environment of the host.

A If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
B If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
C If Assertion is true but Reason is false.
D If both Assertion and Reason are false.

Q80. Which region of the kidney nephron is the main site of amino acid reabsorption? **1 Mark**

A Distal convoluted tubule.
B Proximal convoluted tubule.
C Bowman’s capsule.
D Glomerulus.

Q81. In the kidneys, osmotic pressure controls ______. **1 Mark**

A Glucose absorption. **B** Sodium absorption. **C** Water absorption. **D** None of these.

Q82. Bryophytes are called amphibians of plant kingdom because: **1 Mark**

A These plants live in soil and depend on marine organisms for asexual reproduction.
B These plants live in soil and depend on water for sexual reproduction.
C These plants live in water and depend on land animals for sexual reproduction.
D These plants live near water bodies.

Q83. Unidirectional transmission of a nerve impulse through nerve fibres is due to the fact that: **1 Mark**

A Nerve fibre is insulated by myelin sheath.
B Sodium pump starts operating only at the cyton and then continues into the nerve fibre.
C Neurotransmitters are released by the axon endings and not by dendrites.
D Neurotransmitters are released by dendrites and not by axons.

Q84. Microtubule is involved in the. **1 Mark**

A Cell division.
B Membrane architecture.
C Muscle contraction.
D DNA recognition.

Q85. Bowman's glands are located in the: **1 Mark**

A Proximal end of coniferous tubules
B Anterior pituitary
C Female reproductive system of cockroach
D Olfactory epithelium of nose

Q86. Bryophytes can be separated from algae because they: **1 Mark**

A Are thalloid forms.
B Have no conducting tissue.
C Possess archegonia with outer layer of sterile cells.
D Contain chloroplasts in their cells.

Q87. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below. **1 Mark**
Assertion: In Funaria is monoecious.
Reason: Cross fertilization occurs in Funaria

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 and R is also false.

Q88. The function of vagus nerve innervating the heart is to: **1 Mark**

A Initiate the heart beat.
B Reduce the heart beat.
C Accelerate the heart beat.
D Maintain constant heart beat.

Q89. Uricotelism is found in: **1 Mark**

A Mammals and birds.
B Fishes and fresh water protozoans.
C Birds, reptiles and insects.
D Frogs and toads.

Q90. **Directions:** In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as: **1 Mark**
Assertion: Anabaena inhabits root nodules of leguminous plants.
Reason: Leguminous plants are an example of symbiotic nitrogen fixation.

A If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
B If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
C If Assertion is true but Reason is false.
D If both Assertion and Reason are false.

Q91. All living organisms are linked to one another because: **1 Mark**

A They have common genetic material of the same type.
B They share common genetic material but to varying degrees.
C All have common cellular organization.
D All of above.

Q92. Which of the following enzyme can form RNA from DNA: **1 Mark**

A Restriction enzyme
B DNA polymerase
C RNA polymerase
D Reverse transcriptase

Q93. What is true for photolithotrophs? **1 Mark**

A Obtain energy from radiations and hydrogen from organic compounds.
B Obtain energy from radiations and hydrogen from inorganic compounds.

C Obtain energy from organic compounds.
D Obtain energy from inorganic compounds.

Q94. Protein synthesis in an animal cell occurs. **1 Mark**

A Only on the ribosomes present in cytosol.
B Only on ribosomes attached to the nuclear envelope and endoplasmic reticulum.
C On ribosomes present in the nucleolus as well as in cytoplasm.
D On ribosomes present in cytoplasm as well as in mitochondria.

Q95. In ornithine cycle, which one pair of the following wastes are removed from the blood? **1 Mark**

A CO_2 and urea.
B CO_2 and ammonia.
C Ammonia and urea.
D Urea and sodium salts.

Q96. Taxonomic studies depends on: **1 Mark**

A Ecological information of organisms.
B Structure of cell and development process of organisms.
C External and internal structure of organisms.
D All of the above.

Q97. Correct order of excretory organs in cockroach, earthworm and rabbit respectively is: **1 Mark**

A Skin, malpighian tubules, kidney
B Malpighian tubules, nephridia, kidney
C Nephridia, malpighian tubules, kidney
D Nephridia, kidney, green gland

Q98. Bryophytes are dependent on water because: **1 Mark**

A Water is essential for fertilization for their homosporous nature.
B Water is essential for their vegetative propagation.
C The sperms can easily reach upto egg in the archegonium.
D Archegonium has to remain filled with water for fertilization.

Q99. Injury to vagus nerve in human is not likely to affect. **1 Mark**

A Tongue movements.
B Gastrointestinal movements.
C Pancreatic secretion.
D Cardiac movements.

Q100. The part of nephron impermeable to salts, but permeable to water, is: **1 Mark**

A Descending limb of Henle's loop.
B Ascending limb of Henle's loop.
C Distal convoluted tubule.
D Collecting duct.

Q101. We can produce concentrated/ dilute urine. This is facilitated by a special mechanism. Identify the mechanism. **1 Mark**

A Reabsorption from PCT.
B Reabsorption from collecting duct.
C Reabsorption/ secretion in DCT.
D Counter current mechanism in Henle’s loop/ Vasa recta.

Q102. A transverse section of stem is stained first with safranin and then with fast green following the usual schedule of double staining for the preparation of a permanent slide. What would be the colour of the stained xylem and phloem? **1 Mark**

A Red and green.
B Green and red.
C Orange and yellow.
D Purple and orange.

Q103. Keeping in view the fluid mosaic model for the structure of cell membrane, which one of the following statements is correct with respect to the movement of lipids and proteins from one lipid monolayer to the other (described as flip-flop movement)? **1 Mark**

A Neither lipids, nor proteins can flip-flop.
B Both lipids and proteins can flip-flop.
C While lipids can rarely flip-flop, proteins cannot.
D While proteins can flip-flop, lipids can not.

Q104. Transgenic plants are the ones: **1 Mark**

A Grown in artificial medium after hybridization in the field.
B Produced by a somatic embryo in artificial medium.
C Generated by introducing foreign DNA in to a cell and regenerating a plant from that cell.
D Produced after protoplast fusion in artificial medium.

Q105. Function of companion cells is: **1 Mark**

A Loading of sucrose into sieve elements.
B Providing energy to sieve elements for active transport.
C Providing water to phloem.
D Loading of sucrose into sieve elements by passive transport.

Q106. The fascicular cambium and cork cambium are examples of: **1 Mark**

A Apical meristem moltada too.
B Lateral meristem.
C Intercalary meristem.
D Primary meristem.

Q107. Plants of this group are diploid and well adapted to extreme conditions. They grow bearing sporophylls in compact structures called cones. The group in reference is: **1 Mark**

A Monocots.
B Dicots.
C Pteridophytes.
D Gymnosperms.

Q108. Organisms are classified to: **1 Mark**

A Make the study of organisms easy.
B Understand the inter-relationships among different groups of organisms.
C Compare and study the evolution of organisms according to their hierarchy.
D All of the above

Q109. In Prawn, excretion is carried out by: **1 Mark**

A Nephrons.
B Flame cells.
C Green glands.
D Malpighian tubules.

Q110. Eustachian tube connects. **1 Mark**

A Internal pharyax.
B External ear with internal ear.
C Middle ear with pharynx.
D External ear with middle ear.

Q111. **Directions:** In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as: **1 Mark**
Assertion: Plasmids are double-stranded extra chromosomal DNA.
Reason: Plasmids are possessed by eukaryotic cells.

A If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
B If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
C If Assertion is true but Reason is false.
D If both Assertion and Reason are false.

Q112. Pteridophytes differ from bryophytes in having: **1 Mark**

A Archegonia.
B Vascular tissues.
C Motile antherozoids.
D Alternation of generations.

Q113. Which of the following statements regarding enzyme inhibition is correct? **1 Mark**

A Competitive inhibition is seen when a substrate competes with an enzyme for binding to an inhibitor protein.
B Non-competitive inhibitors often bind to the enzyme irreversibly.
C Competitive inhibition is seen when the substrate and the inhibitor compete for the active site on the enzyme.
D Non-competitive inhibition of an enzyme can be overcome by adding large amount of substrate.

Q114. Which one of the following aspects is an exclusive characteristic of living things? **1 Mark**

A Increase in mass by accumulation of material both on surface as well as internally.
B Isolated metabolic reactions occur in vitro.
C Increase in mass from inside only.
D Perception of events happening in the environment and their memory.

Q115. The Bowman's capsule functions as a: **1 Mark**

A Filter
B Suction pump
C Sponge
D All of the above

Q116. **Directions:** In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as: **1 Mark**
Assertion: Malarial fever appear at merozoite stage of Plasmodium.

Reason: The infective stage of Plasmodium is sporozoite.

A If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
B If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
C If Assertion is true but Reason is false.
D If both Assertion and Reason are false.

Q117. More then 70% of world's fresh water is contained is: **1 Mark**

A Antarctica. **B** Greenland. **C** Glaciers and Mountains. **D** Polar ice.

Q118. During excited stage the axonal membrane is more permeable to which ion? **1 Mark**

A Potassium. **B** Calcium. **C** Sodium. **D** Magnesium.

Q119. What will happen if the stretch receptors of the urinary bladder wall are totally removed? **1 Mark**

A Urine will continue to collect normally in the bladder.
B There will be no micturition.
C Urine will not collect in the bladder.
D Micturition will continue.

Q120. Alpha diversity is biodiversity present: **1 Mark**

A Within community **B** Between community **C** Ranges of communities **D** All of the above

Q121. In a man, abducens nerve is injured. Which one of the following functions will be affected? **1 Mark**

A Movement of the eye ball.
B Swallowing.
C Movement of the tongue.
D Movement of the neck.

Q122. Fusifrom initial cells of cambium from: **1 Mark**

A Vascular rays. **B** Tracheary elements. **C** Ray parenchyma. **D** Phloem parenchyma.

Q123. Which of the following is responsible for secondary growth in woody plants? **1 Mark**

A Xylem **B** Phloem **C** Vascular cambium **D** Mesophyll
E Pith

Q124. Axillary bud and terminal bud are derived from the activity of: **1 Mark**

A Lateral meristem. **B** Intercalary meristem. **C** Apical meristem. **D** Parenchyma.

Q125. Vascular tissues in flowering plants develop from: **1 Mark**

A Phellogen. **B** Plerome. **C** Periblem. **D** Dermatogen.

Q126. The vascular cambium in dicots is: **1 Mark**

A Lateral **B** Apical **C** Intercalary **D** Secondary

Q127. **Directions:** In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as: **1 Mark**
Assertion: All food chains will come to stand still if bacteria disappear from earth.
Reason: Bacteria are only associated with the soil fertility and hardly any role for food chains.

A If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
B If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
C If Assertion is true but Reason is false.
D If both Assertion and Reason are false.

Q128. Carbohydrates, the most abundant bio-molecules on earth, are produced by: **1 Mark**

A All bacteria, fungi and algae.
B Fungi, algae and green plant cells.
C Some bacteria, algae and green plant cells.
D Viruses, fungi and bacteria.

Q129. Plant growth in length is increased by: **1 Mark**

A Apical meristem **B** Lateral meristem **C** Dermatogen **D** Periblem

Q130. Which of the following statements is incorrect regarding biodiversity? **1 Mark**

A Biodiversity deals with biological and geographical units such as genes, chromosomes, species, families and biogeographic religions.
B Biodiversity is an addition sum of genetic, taxonomic and ecosystem diversity.
C It is a measure of the amount of resources shared by the human population.
D None of these

Q131. Botanical gardens and zoological parks have: **1 Mark**

A Collection of endemic living species only.
B Collection of exotic living species only.
C Collection of endemic and exotic living species.
D Collection of only local plants and animals.

Q132. Which pair of structures are usually found in both plant and animal cells? **1 Mark**

A Cell membrane and nucleolus.
B Cell membrane and cell wall.
C Nucleolus and chloroplast.
D Nucleus and cell wall.

Q133. The cells of the quiescent centre are characterised by: **1 Mark**

A Dividing regularly to add to tunica.
B Having dense cytoplasm and prominent nuclei.
C Having light cytoplasm and small nuclei.
D Dividing regularly to add to the corpus.

Q134. Cofactor (coenzyme) is a part of holoenzyme it is: **1 Mark**

A Loosely attached inorganic part.
B Accessory non-protein substance attached firmly.
C Loosely attached organic part.
D None of the above.

Q135. Phellogen and phellem respectively denote: **1 Mark**

A Cork and cork cambium.
B Cork cambium and cork.
C Secondary cortex and cork.
D Cork and secondary cortex.

Q136. Frequency of sound is discriminated by: **1 Mark**

A The type of fluid - perilymph or endolymph.
B The site at the cochlear coi.
C The intensity of movement of basilar fibres of cochlea.
D All of these.

Q137. Which of the following statements is true for a secretory cell? **1 Mark**

A Golgi apparatus is absent.
B Rough Endoplasmic Reticulum (RER) is easily observed in the cell.
C Only Smooth Endoplasmic Reticulum (SER) is present.
D Secretory granules are formed in nucleus.

Q138. Which of the following taxonomic rank contain organisms most similar to one another? **1 Mark**

A Genus
B Species
C Family
D Class

Q139. Mitochondrial cristae are sites of: **1 Mark**

A Breakdown of macromolecules.
B Protein synthesis.
C Phosphorylation of flavoproteins.
D Oxidation-reduction reactions.

Q140. Flagella of prokaryotic and eukaryotic cells differ in: **1 Mark**

A Type of movement and placement in cell.
B Location in cell and mode of functioning.
C Microtubular organization and type of movement.
D Microtubular organization and function.

Q141. Genes for cytoplasmic male sterility in plants are generally located in: **1 Mark**

A Mitochondrial genome.
B Cytosol.
C Chloroplast genome.
D Nuclear genome.

Q142. When a lysosome fuses with a phagosome, it results in the formation of: **1 Mark**

A Primary lysosome
B Secondary lysosomes
C Residual body
D Autophagic vacuole

Q143. Length of one turn of the helix in a B-form DNA is approximately? **1 Mark**

A 3.4nm.
B 0.34nm.
C Both.
D None of these.

Q144. Which one is the most advanced from evolutionary point of view? **1 Mark**

A Selaginella. **B** Funaria. **C** Chlamydomonas. **D** Pinus.

Q145. A leaf primordium grows into the adult leaf lamina by means of: **1 Mark**

A Apical meristem.
B Lateral meristem.
C Marginal meristem.
D At first by apical meristem and later largely by marginal meristem.

Q146. Which portion of the brain is responsible for various emotions such as pleasure, fear, and happiness? **1 Mark**

A Thalamus. **B** Reticular formation. **C** Hypothalamus. **D** Limbic system.

Q147. In which of the following would you place the plants having vascular tissue, lacking seeds? **1 Mark**

A Algae. **B** Bryophytes. **C** Pteridophytes. **D** Gymnosperms.

Q148. Which of the following statements is true regarding individuals of same species: **1 Mark**

A They are interbreeding.
B They live in same niche.
C They live in different niche.
D They live in different habitat.

Q149. Protonema is: **1 Mark**

A Haploid and is found in mosses.
B Diploid and is found in liverworts.
C Diploid and is found in pteridophytes.
D Haploid and is found in pteridophytes.

Q150. A plant shows thallus level of organization. It shows rhizoids and is haploid. It needs water to complete its life cycle because the male gametes are motile. Identify the group to which it belongs to: **1 Mark**

A Pteridophytes. **B** Gymnosperms. **C** Monocots. **D** Bryophytes.

Q151. A person who is one along hunger strike and is surviving only on water, will have: **1 Mark**

A Less urea in his urine.
B More sodium in his urine.
C More glucose in his blood.
D Less amino acids in his urine.

Q152. What is true about a monocot leaf? **1 Mark**

A Reticulate venation.
B Absence of bulliform cells from epidermis.
C Mesophyll not differentiated into palisade and spongy tissues.
D Well diffferentiated mesophyll.

Q153. Which of the following is not true of a eukaryotic cell? **1 Mark**

A Cell wall is made up of peptidoglycans.
B 80S type of ribosomes are present in the cytoplasm.
C Mitochondria contain circular DNA.
D Membrane bound organelles are present.

Q154. Keystone species are: **1 Mark**

A Important for ecosystem.
B Important for plants.
C Endangered species.
D Extinct species.

Q155. Ribozyme is: **1 Mark**

A RNA with additional phosphate.
B RNA without sugar.
C RNA without uracil.
D RNA acting as enzyme.

Q156. Which among the following is not associated with a sexual reproduction? **1 Mark**

A Gamete formatlon. **B** Fragmentation. **C** Spore formation. **D** Budding.

Q157. The desmosomes are concerned with. **1 Mark**

A Cytolysis. **B** Cell division. **C** Cell adherence. **D** Cellular excretion.

Q158. Resolution power is the ability to: **1 Mark**

A Distinguish two trees.
B Distinguish two close objects.
C Distinguish amongst organelles.
D Magnify image.

Q159. An organized and differentiated cellular structure having cytoplasm but no nucleus is: **1 Mark**

A Vessels. **B** Xylem parenchyma. **C** Sieve tubes. **D** Tracheid.

Q160. Due to discovery of which of the following in 1980 the evolution was termed as RNA world? **1 Mark**

A mRNA, tRNA, rRNA synthesize proteins. **B** In some virus RNA is genetic material.
C RNA have enzymatic property. **D** RNA is not found in all cells.

Q161. **Directions:** In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as: **1 Mark**

Assertion: Cyanobacteria are photosynthetic autotrophs.
Reason: Cyanobacteria have chlorophyll a and b similar to green plants.

A If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
B If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
C If Assertion is true but Reason is false.
D If both Assertion and Reason are false.

Q162. The net pressure gradient that causes the fluid to filter out of the glomeruli into the capsule is: **1 Mark**

A 20mm Hg **B** 75mm Hg **C** 30mm Hg **D** 50mm Hg

Q163. In endarch condition of xylem, protoxylem lies ______ of metaxylem. **1 Mark**

A On inner side. **B** On outer side.
C Both on inner and outer side. **D** In centre.

Q164. According to widely accepted "fluid mosaic model" cell membranes are semi-fluid, where lipids and integral proteins can diffuse randomly. In recent years, this model has been modified in several respects. In this regard, Which of the following statements is incorrect? **1 Mark**

A Proteins in cell membranes can travel within the lipid bilayer.
B Proteins can also undergo flip-flop movements in the lipid bilayer.
C Proteins can remain confined within certain domains of the membrane.
D Many proteins remain completely embedded within the lipid bilayer.

Q165. Smooth endoplasmic reticulum is well developed in the cells which synthesize. **1 Mark**

A Steorids. **B** Carbohydrates. **C** Proteins. **D** All of these.

Q166. The antherozoids of Funaria are: **1 Mark**

A Aciliated. **B** Biflagellated. **C** Multiciliated. **D** Monociliated.

Q167. Which is correct about cell theory in view of current status of our knowledge about cell structure? **1 Mark**

A It needs modification due to discovery of subcellular structures like chloroplasts and mitochondria.
B Modified cell theory means that all living beings are composed of cells capable of reproducing.
C Cell theory does not hold good because all living beings do not have cellular organisation (eg, viruses).
D Cell theory means that all living objects consist of cells whether or not capable of reproducing.

Q168. Which one of the following is correctly matched pair of the given secretion and its primary role in human physiology? **1 Mark**

A Saliva - Tasting food. **B** Tears - Excretion of salts.
C Sweat - Thermoregulation. **D** Sebum - Sexual attraction.

Q169. Which layer is in contact with brain tissues? **1 Mark**

A Piamater. **B** Arachnoid. **C** Duramater. **D** Piamater and Arachnoid.

Q170. Chloroplast of Chlamydomonas is: **1 Mark**

A Stellate. **B** Cup-shaped. **C** Collar-shaped. **D** Spiral.

Q171. What is not true about sclereids? **1 Mark**

A These are parenchyma cells with thickened lignified walls.
B These are elongated and flexible with tapered ends.
C These are commonly found in the shells of nuts and in the pulp of guava, pear etc.
D These are also called the stone cells.

Q172. A.T.S. of a young dicot root can be distinguished from that of a young dicot stem by the presence of: **1 Mark**

A Radial arrangement of xylem and phloem.
B Collateral arrangement of xylem and phloem.
C Interfascicular cambium.
D Intra fascicular cambium.

Q173. Gymnosperms produce neither flower nor fruit because they do not possess: **1 Mark**

A Embryo. **B** Ovary. **C** Ovule. **D** Seed.

Q174. Pith is a central part of the ground tissue generally made up of: **1 Mark**

A Parenchyma **B** Collenchyma **C** Chlorenchyma **D** Sclerenchyma

Q175. Which one of the following is heterosporous? **1 Mark**

A Adiantum **B** Equisetum **C** Dryopteris **D** Salvinia

Q176. Pteridophytes differ from mosses/ bryophytes in possessing: **1 Mark**

A Well developed vascular system.
B Independent gametophyte.
C Archegonia structure.
D Flagellate spermatozoids.

Q177. In gymnosperms, the ovule is naked because: **1 Mark**

A Perianth is absent. **B** Ovary wall is absent. **C** Integuments are absent. **D** Nucellus is absent.

Q178. A common characteristic feature of plant sieve tube cells and most of mammalian erythrocytes is: **1 Mark**

A Absence of mitochondria.
B Presence of cell wall.
C Presence of haemoglobin.
D Absence of nucleus.

Q179. Callose deposition is found in: **1 Mark**

A Tracheids. **B** Companion cells. **C** Sieve areas. **D** Phloem parenchyma.

Q180. The main objective of plant taxonomy is: **1 Mark**

A To provide Latin 'scientific' names for every group of plants in the world.
B To provide a method for identification and nomenclature.
C To study the world's flora.
D All of these.

Q181. **Directions:** In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as: **1 Mark**
Assertion: Pili are motile appendages found in some bacteria.
Reason: These participate in conjugation.

A If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
B If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
C If Assertion is true but Reason is false.
D If both Assertion and Reason are false.

Q182. **Directions:** In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as: **1 Mark**
Assertion: Methanogens are obligate anaerobes.
Reason: Halophiles are salt loving bacteria.

A If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
B If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
C If Assertion is true but Reason is false.
D If both Assertion and Reason are false.

Q183. The quiescent centre in root meristem serves as a. **1 Mark**

A Reserve for replenishment of damaged cells of the meristem.
B Region for absorption of water.

C Reservoir of growth hormones.

D Site for storage of food which is utilized during maturation.

Q184. Which of the following is true about heartwood? **1 Mark**

A They are dead but gives mechanical support to stem.

B They are light in colour.

C They conduct water and minerals.

D 1 and 3.

Q185. Collenchyma differs from parenchyma in having. **1 Mark**

A Pectin deposits at corners.

B Vacuoles.

C Cellulose walls.

D living protoplasm.

Q186. **Directions:** In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as: **1 Mark**

Assertion: Amoeba contains a contractile vacuole.

Reason: It helps in both digestion and osmoregulation.

A If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

B If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.

C If Assertion is true but Reason is false.

D If both Assertion and Reason are false.

Q187. Consider the following four statements (AD) about certain desert animals such as kangaroo rat. **1 Mark**

1. They have dark colour and high rate of reproduction and excrete solid urine.
2. They do not drink water, breathe at a slow rate to conserve water and have their body covered with thick hairs.
3. They feed on dry seeds and do not require drinking water.
4. They excrete very concentrated urine and do not use water to regulate body temperature.

Which two of the above statements for such animals are true?

A C and D

B B and C

C C and A

D A and D

Q188. Which meristem influences the shape of the mature plants? **1 Mark**

A Lateral meristem

B Apical meristem

C Intercallary meristem

D All of the above

Q189. Procambium forms: **1 Mark**

A Only primary vascular bundles.

B Only vascular cambium.

C Only cork cambium.

D Primary vascular bundles and vascular cambium.

Q190. Electron microscope has a high resolution power. This is due to: **1 Mark**

A Electromagnetic lenses.

B Very low wavelength of electron beam.

C Low wavelength of light source used.

D High numerical aperture of glass lenses used.

Q191. Which of the following statements regarding mitochondrial membrane is not correct? **1 Mark**

A The enzymes of the electron transfer chain are embedded in the outer membrane.

B The inner membrane is highly convoluted forming a series of infoldings.

C The outer membrane resembles a sieve.

D The outer membrane is permeable to all kinds of molecules.

Q192. **Directions:** In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as: **1 Mark**

Assertion: Broad spectrum antibiotics are produced by Streptomyces.

Reason: Antibiotics can destroymicroorganisms by inhibiting DNA replication or protein synthesis.

A If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

B If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.

C If Assertion is true but Reason is false.

D If both Assertion and Reason are false.

Q193. By definition, an ectotherm. **1 Mark**

A Obtains most of its heat from its environment.

B Derives most of its heat from its own metabolism.

C Is warm-blooded.

D Is cold-blooded.

Q194. What happens during vascularization in plants? **1 Mark**

A Differentiation of procambium is immediately followed by the development of secondary xylem and phloem.

B Differentiation of procambium followed by the development of xylem and phloem.

C Differentiation of procambium, xylem and phloem is simultaneous.

D Differentiation of procambium followed by the development of primary phloem and then by primary xylem.

Q195. During stress condition which of the following nerves start working? **1 Mark**

A Parasympathetic nerves. **B** Autonomic nerves. **C** Sympathetic nerves. **D** Cranial nerves.

Q196. Extra nuclear inheritance is a consequence of presence of genes in: **1 Mark**

A Mitochondria and chloroplasts.

B Endoplasmic reticulum and mitochondria.

C Ribosomes and chloroplast.

D Lysosomes and ribosomes.

Q197. **Directions:** In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as: **1 Mark**

Assertion: Both internal as well as external growth is show by living organisms.

Reason: Living organisms undergo the process known as accretion.

A If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

B If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.

C If Assertion is true but Reason is false.

D If both Assertion and Reason are false.

Q198. Isogamous condition with non-flagellated gametes is found in: **1 Mark**

A Chlamydomonas. **B** Spirogyra. **C** Volvox. **D** Fucus.

Q199. Reformation of nucleolus, golgi complex and ER occurs in: **1 Mark**

A Anaphase. **B** Metaphase. **C** Both. **D** None of these.

Q200. In humans, visceral organs are innervated by: **1 Mark**

A Sympathetic nerves and are under conscious control.

B Parasympathetic nerves and are under conscious control.

C Both (a) and (b).

D Both sympathetic and parasympathetic nerves but are not under conscious control.