

**Class: XI**  
**Subject: Biology**  
**Topic: ASK1511SA01**  
**No. of Questions: 30**

Q1. Which of the following is not true for a species?

- (a) Members of a species can interbreed.
- (b) Gene flow does not occur between the populations of a species.
- (c) Each species is reproductively isolated from every other species.
- (d) Variations occur among members of a species.

Sol. (b)

Gene flow is the spread of gens through populations as effected by movements of individual and their propagules, e.g. seeds spores etc. Gene flow ensures that all populations of a given species share a common gene pool, i.e. it reduces difference between populations is a pre-requisite for the formation of new species.

Q2. ICBN stands for

- (a) International Code of Botanical Nomenclature
- (b) International congress of Biological Names
- (c) Indian Code of Botanical Nomenclature
- (d) Indian Congress of Biological Names.

Sol. (a)

ICBN (International code of Botanical Nomenclature) – It is one of the code of nomenclature which is independent of zoological and bacteriological nomenclature. The code applies equally to names of taxonomic groups treated as plants whether or not these groups were originally so treated.

Q3. Select the correct statement from the following?

- (a) Fitness is end result of the ability to adapt and gets selected by nature.
- (b) All mammals excepts whales and camels have seven cervical vertebrae
- (c) Mutations are random and directional
- (d) Darwinian variations are small and direction less.

Sol. (a)

To survive in a particular environment, an organism needs to adapt in that environment. If the organism becomes success in adapting them that organism is selected by nature.

Q4. The living organisms can be unexceptionally distinguished from the non-living things on the basis of their ability for

- (a) Interaction with the environment and progressive evolution
- (b) Reproduction
- (c) Growth and movement
- (d) Responsiveness to touch.

Sol. (b)

There are several factors and processes which differentiate living beings with non-living beings like reproduction, respiration, growth, etc. But among them reproduction is the only difference which differentiates without any exception living being with non-living beings.

Q5. Which one of the following animals is correctly matched with its particular named taxonomic category?

- (a) Tiger – tigris, the species
- (b) Cuttle fish – Mollusca, a class
- (c) Humans – primata, the family
- (d) Housefly – musca, an order

Sol. (a)

Tiger and tigris both are from same genus with particular taxonomic category.

Q6. All of the following statements concerning the Actinomycetes filamentous soil bacterium Frankia are correct except that Frankia:

- (a) Can induce root nodules on many plant species.
- (b) Cannot fix nitrogen in the free-living state.
- (c) Forms specialized vesicles in which the nitrogenase is protected from oxygen by chemical barrier involving triterpene hopanoids.
- (d) Like Rhizobium, it usually infects its host plant through root hair deformation and stimulates cell proliferation in the host's cortex.

Sol. (b)

Frankia, is a nitrogen fixing mycelial bacterium which is associated symbiotically (and not free living) with the root nodules of several non legume plants.

Q7. There exists a close association between the alga and the fungus within a lichen. The fungus

- (a) Provides protection, anchorage and absorption for the alga
- (b) Provides food for the alga
- (c) Fixes the atmospheric nitrogen for the alga
- (d) Releases oxygen for the alga

Sol. (a)

Lichens (coined by Theophrastus) are composite or dual organisms which are formed by a fungus partner or mycobiont (mostly ascomycetes) and an algal partner (mostly blue green algae). Fungus forms the body of lichen as well as its attaching and absorbing structures. Algae performs photosynthesis and provides food to the fungus.

Q8. The thalloid body of a slime mould (Myxomycetes) is known as

- (a) Plasmodium
- (b) Fruiting body
- (c) Mycelium
- (d) Protonema

Sol. (a)

The thalloid body of slime moulds is made up of multinucleated cell which lacks septa in between and hence it is a multinucleated single celled mass called plasmodium.

Q9. Which one of the following statements about mycoplasma is wrong?

- (a) They are pleomorphic.
- (b) They are sensitive to penicillin.
- (c) They cause diseases in plants.
- (d) They are also called PPLO.

Sol. (b)

While working at the Rockefeller Institute, Brown reported isolation of a PPLO from human arthritic joint tissue in 1938. In 1949, Diennes reported to the 7<sup>th</sup> International Rheumatology Congress the isolation of arthritis. In discussing the significance of this observation, Brown reported successful treatment of arthritis. In discussing the significance of this observation, Brown reported successful treatment of arthritic patients in 1949 with a new antibiotic called aureomycin (Clark, 1997).

Q10. Which pair of the following belongs to Basidiomycetes?

- (a) Physarum

- (b) Thiobacillus
- (c) Anabaena
- (d) Rhizopus

Sol. (d)

The class Basidiomycetes includes those members that produce their basidia and basidiospores on or in a basidiocarp.

Q11. In a moss the sporophyte

- (a) Produces gametes that give rise to the gametophyte
- (b) Arises from a spore produced from the gametophyte
- (c) Manufactures food for itself as well as for the gametophyte
- (d) Is partially parasitic on the gametophyte

Sol. (d)

In moss main plant body is gametophyte & sporophyte is meant for spore dispersal mainly. Hence it is called that the sporophyte is partially parasitic on gametophyte.

Q12. Peat Moss is used as a packing material for ending flowers and live plants to distant places because

- (a) It is hygroscopic
- (b) It reduces transpiration
- (c) It serves as a disinfectant
- (d) It is easily available

Sol. (a)

Peat Moss is used wherever we require to retain water for a long time because peat mosses are hygroscopic in nature and they absorb the moisture from the atmosphere and this moisture keep the living materials and flowers fresh for a long time.

Q13. Conifers differ from grasses in the

- (a) Lack of xylem tracheids
- (b) Absence of pollen tubes
- (c) Formation of endosperm before fertilization
- (d) Production of seeds from ovules

Sol. (c)

Conifers (Gymnosperms) differ from grasses (angiosperms) because in gymnosperms the female gametophyte is actually endosperm which is made before fertilization. While in grasses endosperm is a tissue formed by the fertilization of second male gamete to polar nuclei. Moreover in gymnosperms the endosperms is a haploid tissue while in angiosperms it is triploid.

Q14. In the prothallus of a vascular cryptogam, the antherozoids and eggs mature a different times. As a result

- (a) There is high degree of sterility
- (b) One can conclude that the plant is apomictic
- (c) Self-fertilization is prevented
- (d) There is no change in success rate of fertilization

Sol. (c)

In the prothallus of a vascular cryptogams the antherozoids and eggs mature at different times which result in failurity of self-fertilization.

Q15. If you are asked to classify the various algae into distinct groups, which of the following characters you should choose?

- (a) Nature of stored food materials in the cell
- (b) Structural organization of thallus
- (c) Chemical composition of the cells wall
- (d) Types of pigments present in the cell.

Sol. (d)

It will be types of pigment present in the cell lie Rhodophyceae shows presence of phycocyanin in etc.

Q16. Flagellated male gametes are present in all the three of which one of the following sets

- (a) Zygnema, Saprolegnia and Hydrilla
- (b) Fucus, Marsilea and Calotropis
- (c) Riccia, Dryopteris and Cycas
- (d) Anthoceros, Funaria and Spirogyra

Sol. (c)

The male gametes of bryophytes are biflagellate, and those of pteridophytes are multiflagellate, except Selaginella having biflagellate gametes. The male gametes of gymnosperms are non-motile except those of Cycas having multiciliate gametes.

Q17. In gymnosperms, the pollen chamber represents

- (a) A cavity in the ovule in which pollen grains are stored after pollination
- (b) An opening in the megagametophyte through which the pollen tube approaches the egg
- (c) The microsporangium in which pollen grains develop
- (d) A cell in the pollen grain in which the sperms are formed.

Sol. (c)

The fertile region of microsporophyll bears a number of microsporangia or pollen sacs arranged in sori. The pollen chamber represents microsporangium in which pollen grains develop.

Q18. Spore dissemination in some liverworts is aided by

- (a) Indusium
- (b) Calyptra
- (c) Peristome teeth
- (d) elaters

Sol. (d)

Elater is an elongated, spirally thickened, water-attracting cell in the capsule of a liverwort, derived from sporogenous tissue and assist in spore dispersal. In mosses calyptra is a structure initially present around sporophyte then later get break. It is developed from ventral wall after fertilization. It provides protective covering to the developing sporogonium. Peristome teeth are found in capsule of moss. These are present below operculum and are hygroscopic in nature.

Q19. In which one of the following, male and female gametophytes do not have free living independent existence?

- (a) Pteris
- (b) Funaria
- (c) Polytrichum
- (d) Cedrus

Sol. (d)

Male and female gametophytes of Cedrus do not have free living independent existence. Cedrus belongs to conifer.

Q20. Which one of the following is heterosporous?

- (a) Dryopteris
- (b) Salvinia
- (c) Adiantum
- (d) Equisetum

Sol. (b)

Salvinia is a aquatic fern with both annual and perennial species. It is heteroporous i.e. with two types of spores, microspores and megaspores.

Q21. Which one of the following characters is not typical of the class Mammalia?

- (a) Thecodont dentition
- (b) Alveolar lungs
- (c) Ten pairs of cranial nerves
- (d) Seven cervical vertebrate

Sol. (c)

Mammals have 12 pairs of cranial nerves.

Q22. From the following statements select the wrong one.

- (a) Prawn has two pairs of antennae
- (b) Nematocysts are characteristic of the Phylum Cnidaria
- (c) Millipedes have tow pairs of appendages in each segment of the body
- (d) Animals belonging to Phylum Porifera are exclusively

Sol. (d)

Animals belonging to Phylum Porifera are mostly marine except a few which are found in fresh water e.g. Spongilla, Euspongia.

Q23. In contrast to Annelids the Platyhelminths show:

- (a) Absence of body cavity
- (b) Bilateral symmetry
- (c) Radial symmetry
- (d) Presence of pseudocoel

Sol. (a)

Platyhelminthes includes flat warms. There is no body cavity. The animals are therefore acoelomates. Annelids also have bilateral symmetry. They are coelomate having a perivisceral cavity divided into compartments.

Q24. Two common characters found in centipede, cockroach and crab are

- (a) Jointed legs and chitinous exoskeleton
- (b) Green gland and tracheae
- (c) Book lungs and antennae
- (d) Compound eyes and anal cerci

Sol. (a)

Jointed legs & chitinous exoskeleton are the common characters found in centipede, cockroach & crab.

Q25. In which one of the following sets of animals do all the four give birth to young ones?

- (a) Platypus, Penguin, Bat, Hippopotamus
- (b) Shrew, Bat, Cat, Kiwi
- (c) Kangaroo, Hedgehog, Dolphin, Loris
- (d) Lion, Bat, Whale Ostrich

Sol. (c)

Penguin, Kiwi & Ostrich all belong to class Aves of chordate (i.e. birds) and they do not give birth to their young ones, they are oviparous while Kangaroo, Hedgehog, Dolphin, Loris all belong to class mammalia and are viviparous.

Q26. Biradial symmetry and lack of cnidoblasts are the characteristics of

- (a) Ctenopland and Beroe
- (b) Aurelia and Paramecium
- (c) Hydra and starfish
- (d) Starfish and sea anemone

Sol. (a)

Q27. Metameric segmentation is the characteristic of

- (a) Echinodermata and Annelida
- (b) Annelida and Arthropoda
- (c) Mollusca and Chordata
- (d) Platyhelminthes and Arthropoda

Sol. (b)

Metameric segmentation means body is divided externally as well as internally. This characteristic is present in annelids (e.g. earthworm) and arthropoda (e.g. cockroach). Their body is divided externally and internally as well.

Q28. Which one of the following is a matching set of a phylum and its three examples?

- (a) Platyhelminthes – Planaria, Schistosoma, Enterobius
- (b) Mollusca – Loligo, Teredo, Octopus
- (c) Porifera – Spongilla, Euplectella, Pennatula
- (d) Cnidaria – Bonellia, Physalia, Aurelia

Sol. (b)

Q29. What is common about Trypanosoma, Noctiluca, Monocystis and Giardia?

- (a) They have flagella
- (b) They produce spores
- (c) These are all parasites
- (d) These are unicellular protists

Sol. (d)

Trypanosoma, Noctiluca, Monocystis & Giardia are unicellular protists i.e. unicellular eukaryotes.

Q30. Annual migration does not occur in the case of

- (a) Siberian crane
- (b) Salamander
- (c) Arctic tern
- (d) Salmon

Sol. (b)

Salamander does not undergo any annual migration as it occurs in Siberian crane, Arctic tern and Salmon mainly for the search of food or for breeding.