CLASS: XI Sec _____ **BIOLOGY** **MM. 40**

St Name:_____ **Examination Paper** **Time: 90 Mins**

GENERAL INSTRUCTIONS:
Section A Consists of Multiple Choice Questions carrying 1 mark each.
Section B Consists of Short Answer Type Questions carrying 2mark each.
Section –C Consists of Case Study Based Questions carrying 5 mark each.

SECTION A

Multiple Choice Answer Type Questions:

1. Most common phycobiont in a lichen is?
   (a) Microcystis (b) Trebouxia (c) Ulothrix (d) Spirogyra
2. Lichens show?
   (a) Symbiosis (b) Commensalism (c) Parasitism (d) Cooperation
3. Fusion of two motile gametes which are dissimilar in size is termed as
   (a) Oogamy (b) Isogamy (c) Anisogamy (d) Zoogamy
4. Organisms living in salty areas are called as?
   (a) Methanogens (b) Halophiles (c) Heliophytes (d) Thermoacidophiles
5. The process of Budding is _____
   (a)An Sexual reproduction
   (b)An asexual mechanism of reproduction in which a parent organism's outgrowth divides to create a daughter organism
   (c)An asexual reproduction method in which the parent organism splits into pieces and then grows into a new organism.
   (d)An asexual way of reproduction in which the cytoplasm and nuclei divide into two equal halves to create two daughter nuclei

SECTION –B

Very Short Answers :

1. Plants are autotrophic. Can you think of some heterotrophic plants?
2. Give a detailed account of the classes of Kingdom Fungi under the following:
   (i) Mode of nutrition (ii) Mode of reproduction
3. Why are bryophytes also called the amphibians of the plant kingdom?
4. Food is stored as Floridean starch in Rhodophyceae. Mannitol is the reserve food material of which group ofalgae?
5. Gametophyte is a dominant phase in the life cycle of a bryophyte. Explain.

SECTION –C

Case study Based:

Bryophytes are mostly terrestrial plants. They are found in moist shady places. But they need water for fertilization and completion of their life cycle. Hence they are called 'amphibious plants'. The plant body of bryophytes is more differentiated than that of algae. It is thallus-like and prostrate or erect, and attached to the substratum by unicellular or multicellular rhizoids. They lack true roots, stem or leaves. They may possess root-like, leaf-like or stem-like structures. The main plant body of the bryophyte is haploid. It produces gametes, hence is called a gametophyte. The sex organs in bryophytes are multicellular. The male sex organ is

called antheridium. They produce biflagellate antherozoids. The female sex organ called archegonium is flask-shaped and produces a single egg. The antherozoids are released into water where they come in contact with archegonium. An antherozoid fuses with the egg to produce the zygote. Zygotes do not undergo reduction division immediately. They produce a multicellular body called a sporophyte. The sporophyte is not free-living but attached to the photosynthetic gametophyte and derives nourishment from it. Some cells of the sporophyte undergo reduction division (meiosis) to produce haploid spores. These spores germinate to produce gametophyte.

They include approximately 960 genera and about 25,000 species. Life cycle of Bryophytes shows sporophytic and gametophytic stages. Vegetative plant body is thalloid or leafy which represents gametophytic generation. Spore producing capsule represents sporophytic generation. Bryophytes have root-like structures called rhizoids. Rhizoids are unicellular in liverworts while multicellular in mosses. Rhizoids absorb water and minerals and also help in fixation of thallus on the substratum. Bryophytes are divided into two groups : liverworts and mosses.

Liverworts (Hepaticeae) – These are lower members of Bryophyta. These are primitive group of Bryophytes. Gametophyte possesses flat plant body called thallus. The thallus is green, dorsiventral, prostrate with unicellular rhizoids. E.g. Riccia, Marchantia

Hornworts (Anthocerotae) – These member possess flattened thallus. The thallus produces horny structures which are called sporophytes hence the name hornworts. e.g. Anthoceros.

Mosses (Musci) – These are advanced members of Bryophyta which possess erect plant body. Gametophytic phase of the life cycle includes two stages namely; protonema stage and leafy stage. The protonema is prostrate green, branched and filamentous (it is also called juvenile gametophyte). It bears many buds. Leafy stage is produced from each bud. Thus protonema helps in the vegetative propagation. The leafy stage has erect, slender stem like (Cauloid) main axis bearing spiral leaf like structures (Phylloid). It is fixed in soil by multicellular branched rhizoids. This stage bears sex organs. Vegetative reproduction takes place by fragmentation and budding in secondary protonema. e.g. Funaria, Polytrichum, Sphagnum, etc

Bryophytes in general are of little economic importance but some mosses provide food for herbaceous mammals, birds and other animals. Species of Sphagnum, a moss, provide peat that have long been used as fuel, and as packing material for trans-shipment of living material because of their capacity to hold water. Mosses along with lichens are the first organisms to colonise rocks and hence, are of great ecological importance. They decompose rocks making the substrate suitable for the growth of higher plants. Since mosses form dense mats on the soil, they reduce the impact of falling rain and prevent soil erosion. The bryophytes are divided into liverworts and mosses.

1.) Lower members of bryophytes are represented by _____ group of bryophytes
a) Mosses b) Liverworts c) Hornworts d) Both a and b

2.) In bryophytes, capsule which produces spore represents _____
a) Amphibious generation b) Gametophytic generation
c) Sporophytic generation d) None of the above

3) Define rhizoids and give its functions?
4) Enlist the name of the male and female sex organ present in bryophytes and what they produce.
5) Name the group of plant which are commonly called as “Amphibians of Plant Kingdom” and why?