# Short Answer Type Questions – I

Q. 1. Name the class of algae to which *Laminaria* belong. Draw labelled diagram of *Laminaria* showing its holdfast, stipe and frond. (DDE)

Ans. Laminaria belongs to class phaeophyceae.



#### Q. 2. Bring out the differences between chlorophyceae and phaeophyceae. (KVS 2017)

Ans.

Phaeophyceae	Chlorophyceae
(i) Marine forms. Uncellular forms do not	Chiefly fresh water in nature. Unicellular
exist.	species are more.
(ii) Fucoxanthin is present, which is	Chlorophyll 'a' is present. Fucoxanthin is
responsible for the brown colour of the algae	absent.
(iii) Reserve food is laminarin	Reserve food is starch.

#### Q. 3. What are the similarities between algae and fungi ?

Ans. (i) They occur in aquatic and semi-aquatic habitats.

- (ii) Both have simple body called thellies ic te not ditterentiabrd into roots, steem and leaves.
- (iii) Asexual reproduction occurs by micropores.
- (iii) Sex organs are unisexual and non-jacketed.

# Q. 4. Name two pigments other than chlorophyll that are found in algae which help in grouping them into red and brown algae.

**Ans.** Red algae contains phycocyanins, phycoerythrin and phycocyarin pigpments, Brows algae contains carotenoids and fucoxanthin besides chicrophyll 'a' and 'c' The fucoxanthin pigments makes the green colour of the chlorophyll.

#### Q. 5. Write any four main characteristic features of algae.

Ans. The main characteristic features of algae are :

(i) The body od thallus of multicellular algae ranges from microscopic, colonial aggregates of cells, fine filaments to flattened sheets of cells.

(ii) Vascular tissues are absent in algae.

(iii) Mechanical tiesues are also absent in algae.

(iv) Most algae multiply by vegetative and asexual and modes of reproduction.

#### **Q. 6 How does the red algae prepare their food ?**

**Ans.** Red algae are marine and mostly occur in oceans. The photosynthetic pigments are phycoerythrin and phycocyanin along with chlorophyll and carotenoid. Red algse are photo-autotrophic in their mode of nutrition. They synthesize food in presence of chlorophyll in their chromatophores or chloroplasts.

#### Q. 7. What are the modes of reproduction in algae ?

Ans. (i) Most algae multiply by vegetative and asexual modes of reproduction.

(ii) Asexual spores are of two types, mitospores or meiospores which are mostly motile or non – motile.

(iii) Sexual reprodaction involves fusion of gametes.

(iv) It may be isogamoias (fusion of similar gametes), anisogamous (fusion of dissimilar gametes) or oogamous (fusion of gamets different in size, shape and behaviour) type.

#### Q. 8. What are phycocolloids ? List their functions.

**Ans.** Brown algae have a colBoidal covering over their cellulosic cell wall, consisting of a mixture of polysaccharides collectively called phycocolloids. e.g., alginic acid (algin), fucoildin and fucin. These prevents drying or freezing (in water), when algae are exposed to air during low tides and protect cells when waves beat them against the rocks.

Q. 9. Why do mosses thrive only in moist habitat ?

**Ans**. Monses (bryophytes) are non-vascular land plant of moist habitat that grow densely together and often form green carpets or mats on damp soils. It is because in the absence of roots, thallus absorbs water and minerals directly from gound or atmosphere, Hence, they can thrive only on moist places,

## Q. 10. Describe the importance of mosses.

## Ans. The importance of mosses are :

(i) Mosses form dense mat over soil preventing soil erosion.

(ii) These play an important role in plant succession on rocky areas.

(iii) *Sphagnum*, a moss provide peat which is a valuable fuel like coal. It is also used as packing material for trans shipment of living material because of their capacity to hold water.

## Q. 11. What are thallophyta ? How many groups are included in it ?

**Ans.** Thallophyta posesses the simplest plants which possess undifferentiated or thallus like forms. Vascular tissues are absent. Differentiation of true roots, stems and leaves is also absent.

#### Q. 12. How does an algae differ from fungi ?

Ans.

S. No.	Algae	Fungi
(i)	Chlorophyll present therefore	Chlorophylil absent, they are
	they are green.	non-green.
(ii)	Autotropic nutrition.	Heterotrophic nutrition
		saprophytic and parasitic.
(iii)	Absorb inorganic and	Absorb organic and mineral
	mineral salts	salts.
(iv)	Chlamydomonas and	Aibugo and Yeant.
	Ulothrix.	

#### Q. 13. What are horsetails ?

Ans. (i) Honetails are represented by a single genus *Equisetum*.

(ii) It is a fern in which the plant body has a underground rhizome that bears acrial green stems. It makes this plant to bear a fanciful resemblance to a horsetail.

(iii) Leaves are small, scale like and form whorls at nodes.

(iv) Leaves bear strobili at the tips of stems that produce spores. On germination spores produce gametophyte.

#### Q. 14. Write a note on protonema.

**Ans.** Protonema is a thread like chain of cells that forms the haploid gametophytic phase in the life cyle mosses and liver worts. When a moss grows from the spore, it grows as a protonema, which develops into a leafy gametophore.

#### Q.15. Mention the ploidy of the following:

- (i) Protonemal cell of moss
- (ii) Prothallus cells of fern
- (iii) Primary endosperm nucleus in dicot

(iv) Leaf cell of a moss.

(KVS 2017)

Ans. (i) Haploid (ii) Haploid (ii) Triploid (iv) Haploid

# Q. 16. Differentiate between Cryptogams and Phanerogams ?

# Ans.

S. No	Cryptogams	Phanerogams
(i)	These are seedless plants.	Phanerogams are seeded plants.
(ii)	It has three divisions thallophytes, bryophytes and pteridophytes.	There is only one division of spermatophyta.
(iii)	An ovule is not formed.	An ovule is present.
(iv)	Pollination is absent.	Pollination is present.
(v)	The plants require external water for fertilization.	External water is not required for fertilization.