CBSE TEST PAPER-05

CLASS - XI BIOLOGY

(Plant Kingdom)

General Instruction:

- All questions are compulsory.
- Question No. 1 to 3 carry one marks each. Question No. 4 to 7 carry two marks each. Question No. 8 and 10 carry three marks each.

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1. Name the group of vascular plants which produces only spores but no flowers or seeds in its life cycle?

2. Where are antheridia & archegonia located in ferns?

3. Enlist the two main classes of bryophytes.

4. Tabulate the main differences between Gymnosperms & Pteridophytes.

5. Define heterospory? Comment on its significance?

6. What are Gymnosperms? List out the different classes of Gymnosperms

7. How will you differentiate monocots from dicots?

8. Describethe common methods of reproduction found in Algae?

9. What are ferns? Comment on the salient features of ferns

10. Distinguish between Red, Brown and Green algae.

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[ANSWERS]

1. Pteridophytes.

2. In the gametophytic structure called Prothallus

3. Liverworts & Mosses (Hepaticae and Musci)

4.

Gymnosperms	Pteridophytes
i) located in temperate climatic region	i) found in shady & moist ha
ii) Presence of cambium in stelar region	ii) cambium absent
iii) Gametophytes (both male and female) are dependent on sporophytes	iii) Gematophyte is an indep structure
iv) Indehiscent Megasporangium called Ovule is present	iv) No Ovules

5. The term Heterospory refers to the production of two kinds of spores in pteridophytes eg. The sporophytes of *Salvinia* and *Selaginella* produce two different kinds of spores megaspores & microspores. These mega and microspores germinate to give rise to female & male gametophytes respectively. The female gametophyte is retained within the parent sporophyte for variable period of time. Hence, this event is considered a precursor to seed habit.

6. Gymnosperms are a group vascular plants that bear naked seeds. The seeds are exposed on surface of megasporophyll. The reproductive organs are usually borne in cones in which sporophylls are spirally arranged on a common axis. Gymnosperms are classified into four groups Conifers, Cycads, Ginkgo, Gnetophytes.

7.

	Monocots	Dicots
Root system	Adventitious	Tap root
Stem	Soft & herbaceous	Woody & herbaceous
Venation	Parallel	Reticulate Venation
Number of Floral parts	Trimerous	Tetra or pentamerous
Number of Cotyledons found in the embryo.	One cotyledon	Two cotyledon
seeds	Endospermic seeds	Non – endospermic seeds.

8. Reproduction in algae occurs by the following method:-

i) Vegetative reproduction:- It takes place through fission and fragmentation

ii) Sexual Reproduction in chlamydomonas:- 1) Isogamous type: In chlamydomonas, the flagellated & motile gametes which are isogamous unite to form a quadriflagellate zygote. It is converted into zygospore. When the flagella are lost & a cyst wall is formed around it zygospore germinate by meiosis to form four haploid meiospores. 2. Anisogamous type: the fusing gametes are not the same in size but both are flagellated. 3. Oogamous type: the fusing cells are not only of different size but also vary in therir motility.

iii) Palmella stage:- If the conditions are unfavourable, the daughter cells instead of forming zoospore divide repeatedly into numerous cells. Their walls become gelatinous & cells remains together. This stage is called palmella stage. On return of favourable conditions, the cells inside the gelatinous mass develop cilia and germinate
iv) Asexual Reproduction in chlamydomonas:- It takes place by formation of zoospores In the formation of zoospores, the cilia from chlamydomonas are withdrawn. The cell content divide into 4 to 8 daughter cells. In this way, they become motile & called as zoospores.

9. Ferns are found in warm moist tropical region & dry rocky places. The plant body is a sporophyte and is distinguished into three parts-

i) underground stem rhizome

ii) it bear roots &

iii) it sends aerial shoots with leaves. Leaves of ferns are of two types-

a) simple leaves with single vein & b) compound leaves with several leaflets. The diplod sporophytic phase is dominant in ferns. On the backside of leaflets are borne sori which contains cluster of sporangia. Where the spores are produced after meiosis division, the sporangium which has an annulus made of band of thickened cells dry out pulling it open. So spores are released. These spores germinate into a prothallus, the gametophyte. The gametophyte bears antheridia & archaegmia on underside. The antheridia bear flagellated sperms & egg lies at the base of archaegonia. The process of fertilization occurs when water is available for flagellated sperms to swim to reach the egg.
10.

RED ALGAE	BROWN ALGAE	GREEN ALGAE
i) Mainly marine	i) Marine form	i) Freshwater mostly
ii) Only few are unicellular	ii) Unicellular forms almost exist	ii) Unicellular species are more
iii) Thylakoid unstacked	iii) Occurs in group of three	iii) stacked in groups of 2-20
iv) Only chlorophyll a present	iv) chlorophyll a & c present	iv) Chlorophyll a & b present
v) Fucoxanthin present	v) Fucoxanthin present	v) Fucoxanthin absent
vi) Phycobilin present	vi) Phycobilin absent	vi) Phycobilin absent
vii) Reserve food is starch	vii) Reserve food is laminarin	vii) Reserve food is starch
viii) Motile stages are not observed	viii) Present	viii) Present.