Question	Answer
Where are most red algae found?	In marine habitats, especially warmer regions.
At what depths can red algae occur?	Both near the water surface and at great ocean depths where little light penetrates.
What is stored food in red algae?	Floridean starch.
Floridean starch is structurally similar to which compounds?	Amylopectin and glycogen.
How do red algae reproduce vegetatively?	By fragmentation.
What type of spores are produced asexually in red algae?	Non-motile spores.
What type of sexual reproduction occurs in red algae?	Oogamous reproduction with complex post-fertilisation development.
Name common examples of red algae.	Polysiphonia, Porphyra, Gracilaria, and Gelidium.
Which pigments are present in Chlorophyceae?	Chlorophyll a and chlorophyll b.
Which pigments are present in Phaeophyceae?	Chlorophyll a, chlorophyll c, and fucoxanthin.
Which pigment is characteristic of Rhodophyceae?	Phycoerythrin.
What are bryophytes?	Mosses and liverworts commonly found in moist shaded areas in hills.
Why are bryophytes called the amphibians of the plant kingdom?	Because they can live on soil but depend on water for sexual reproduction.
In which habitats are bryophytes commonly found?	Damp, humid, and shaded localities.
What ecological role do bryophytes play in plant succession?	They help in plant succession on bare rocks and soil.
How is the plant body of bryophytes differentiated?	It is thallus-like, prostrate or erect, and attached by rhizoids.
Do bryophytes possess true roots, stems, and leaves?	No, they lack true roots, stems, and leaves.
What is the dominant plant body in bryophytes?	The haploid gametophyte.
What is the male sex organ in bryophytes called?	Antheridium.
What type of male gametes are produced in bryophytes?	Biflagellate antherozoids.
What is the female sex organ in bryophytes called?	Archegonium.
Describe the archegonium in bryophytes.	It is flask-shaped and produces a single egg.

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Question	Answer
Why is water essential for fertilisation in bryophytes?	Because antherozoids are released into water to reach the archegonium.
What is formed after fusion of antherozoid and egg in bryophytes?	Zygote.
What develops from the zygote in bryophytes?	A multicellular sporophyte.
Is the bryophyte sporophyte free-living?	No, it remains attached to and dependent on the gametophyte.
What is produced after meiosis in bryophyte sporophytes?	Haploid spores.
What do bryophyte spores germinate into?	Gametophytes.
Which moss provides peat used as fuel and packing material?	Sphagnum.
Why are mosses ecologically important?	They colonise rocks, help soil formation, and prevent soil erosion.
Into which two groups are bryophytes divided?	Liverworts and mosses.
In which habitats do liverworts usually grow?	Moist shady habitats such as marshy grounds, damp soil, bark of trees, and woods.
Give an example of a liverwort.	Marchantia.
What are gemmae in liverworts?	Green, multicellular, asexual buds.
Where are gemmae produced in liverworts?	In gemma cups located on the thalli.
How do gemmae help in reproduction?	They detach from the parent body and germinate into new individuals.
What are the two stages of the moss gametophyte?	Protonema stage and leafy stage.
What is protonema?	A creeping, green, branched, filamentous stage developing directly from a spore.
How does the leafy stage develop in mosses?	From the secondary protonema as a lateral bud.
How are mosses attached to the soil?	Through multicellular and branched rhizoids.
Name common examples of mosses.	Funaria, Polytrichum, and Sphagnum.
Which plants are included under pteridophytes?	Horsetails and ferns.
In which habitats are pteridophytes commonly found?	Cool, damp, shady places.
What is the dominant phase in the life cycle of pteridophytes?	The sporophyte.

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Question	Answer
Into which structures is the pteridophyte sporophyte differentiated?	True root, stem, and leaves.
Which vascular tissues are present in pteridophytes?	Xylem and phloem.
What are microphylls? Give an example.	Small leaves found in pteridophytes, as in Selaginella.
What are macrophylls? Give an example.	Large leaves found in ferns.
What are sporophylls?	Leaf-like appendages that subtend sporangia.
What are strobili or cones in pteridophytes?	Compact structures formed by sporophylls in plants like Selaginella and Equisetum.
How are spores produced in pteridophytes?	By meiosis in spore mother cells within sporangia.
What is a prothallus?	An inconspicuous, small, multicellular, free-living, mostly photosynthetic thalloid gametophyte.
Why is the distribution of pteridophytes restricted?	Because their gametophytes require cool, damp, shady places and water for fertilisation.
Which sex organs are present on pteridophyte gametophytes?	Antheridia and archegonia.
Why is water necessary in pteridophyte fertilisation?	For transfer of antherozoids from antheridia to archegonium.
What develops from the zygote in pteridophytes?	A multicellular, well-differentiated sporophyte.
What are homosporous pteridophytes?	Pteridophytes producing only one kind of spores.
Give examples of heterosporous pteridophytes.	Selaginella and Salvinia.
What do megaspores and microspores develop into?	Female and male gametophytes, respectively.
Why is heterospory considered evolutionarily important?	It is a precursor to seed habit.

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