Question	Answer
What are the characteristics of organisms in Kingdom Animalia?	Heterotrophic, eukaryotic and multicellular organisms lacking cell walls.
What is the mode of nutrition in animals?	Holozoic nutrition by ingestion of food.
What is phycobiont in lichens?	The algal component of lichen.
What is mycobiont in lichens?	The fungal component of lichen.
What is the nature of cell walls in diatoms?	Cell walls are embedded with silica and are indestructible.
Which groups are discussed under Kingdom Plantae in this chapter?	Algae, Bryophytes, Pteridophytes, Gymnosperms, and Angiosperms.
Why are cyanobacteria no longer considered algae?	Because Monera and Protista members with cell walls have been excluded from Plantae.
On what basis did the earliest systems of plant classification work?	Gross superficial morphological characters such as habit, colour, number, and shape of leaves.
Which classification system was mainly based on vegetative characters or androecium structure?	The artificial classification system, including the system given by Linnaeus.
Why were artificial systems of classification considered unsatisfactory?	They separated closely related species and gave equal weightage to vegetative and sexual characters.
Why are vegetative characters considered less reliable in classification?	Because they are more easily affected by the environment.
What are natural classification systems based on?	Natural affinities among organisms.
Which scientists proposed a natural classification system for flowering plants?	George Bentham and Joseph Dalton Hooker.
What is the basis of phylogenetic classification systems?	Evolutionary relationships among organisms.
What assumption is made in phylogenetic classification?	Organisms belonging to the same taxa have a common ancestor.
What is Numerical Taxonomy based on?	All observable characteristics processed using computers.
What is Cytotaxonomy based on?	Cytological information such as chromosome number, structure, and behaviour.
What does Chemotaxonomy use for classification?	Chemical constituents of plants.
Define algae according to NCERT.	Algae are chlorophyll-bearing, simple, thalloid, autotrophic, and largely aquatic organisms.
Name some habitats where algae are found.	Fresh water, marine water, moist stones, soils, wood, and in association with fungi or animals.

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Question	Answer
How do algae reproduce vegetatively?	By fragmentation.
What are zoospores?	Flagellated motile spores involved in asexual reproduction of algae.
What is anisogamy?	Fusion of two gametes dissimilar in size, as in species of Eudorina.
What is oogamy?	Fusion between a large non-motile female gamete and a smaller motile male gamete.
Give examples of oogamous algae.	Volvox and Fucus.
What proportion of total carbon dioxide fixation on Earth is carried out by algae?	At least half of the total carbon dioxide fixation on Earth is carried out by algae.
How do algae help aquatic environments?	They increase the level of dissolved oxygen in their immediate environment.
Why are algae considered important primary producers?	They form the basis of the food cycles of all aquatic animals by producing energy-rich compounds.
Name some marine algae used as food.	Porphyra, Laminaria, and Sargassum.
What are hydrocolloids?	Water-holding substances produced by certain marine brown and red algae.
Which algae produce algin and carrageen?	Brown algae produce algin, while red algae produce carrageen.
From which algae are agar obtained?	Gelidium and Gracilaria.
What are the uses of agar?	Agar is used to grow microbes and in the preparation of ice-creams and jellies.
Which unicellular alga is used as a food supplement by space travellers?	Chlorella.
What are members of Chlorophyceae commonly called?	Green algae.
What forms can the plant body of Chlorophyceae have?	Unicellular, colonial, or filamentous.
Which pigments dominate in green algae?	Chlorophyll a and chlorophyll b.
Why are green algae usually grass green in colour?	Due to the dominance of chlorophyll a and b pigments.
Name the different shapes of chloroplasts in Chlorophyceae.	Discoid, plate-like, reticulate, cup-shaped, spiral, and ribbon-shaped.
What are pyrenoids?	Storage bodies located in chloroplasts that contain protein besides starch.

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Question	Answer
What is the cell wall composition of green algae?	An inner layer of cellulose and an outer layer of pectose.
How does vegetative reproduction occur in green algae?	By fragmentation.
How does asexual reproduction occur in green algae?	By flagellated zoospores produced in zoosporangia.
What types of sexual reproduction occur in green algae?	Isogamous, anisogamous, and oogamous.
Name some common green algae.	Chlamydomonas, Volvox, Ulothrix, Spirogyra, and Chara.
Where are Phaeophyceae mainly found?	Primarily in marine habitats.
Which pigments are present in brown algae?	Chlorophyll a, chlorophyll c, carotenoids, and xanthophylls.
Which pigment gives brown algae their characteristic colour?	Fucoxanthin.
In brown algae, food is stored in which forms?	Laminarin or mannitol.
What is the nature of the cell wall in brown algae?	A cellulosic wall covered externally by a gelatinous coating of algin.
What structures are present inside the protoplast of brown algae?	Plastids, a centrally located vacuole, and nucleus.
By which structure is the plant body of brown algae attached to the substratum?	Holdfast.
Name the three main parts of the brown algal body.	Holdfast, stipe, and frond.
What is the function of the frond in brown algae?	It acts as a leaf-like photosynthetic organ.
How does vegetative reproduction occur in brown algae?	By fragmentation.
Describe the zoospores of brown algae.	They are biflagellate, pear-shaped, and possess two unequal laterally attached flagella.
What types of sexual reproduction occur in brown algae?	Isogamous, anisogamous, or oogamous.
What is the shape of gametes in brown algae?	Pyriform (pear-shaped).
Name common examples of brown algae.	Ectocarpus, Dictyota, Laminaria, Sargassum, and Fucus.
Why are Rhodophyceae called red algae?	Due to the predominance of the red pigment r-phycoerythrin.

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