Biology 0871 Unit I

Chapters 20 -4 Multicellular Algae p510-515

Chapters 22 Plant Diversity –Mosses, Ferns and Seed Plants

Chapter 23 Roots, Stems and Leaves - Specialized Tissues in Plants

Chapter 24 Reproduction of Seed Plants

Chapter 25-3 Plant Adaptations p643-646

Learning Outcomes

**Chapter 20-4 Multicellular Algae – Red, Brown and Green Algae**

1. What enables an algae to carry out photosynthesis?
2. How is photosynthesis different between Red, brown and green algae?
3. What are accessory pigments? How do they differ between the different types of algae?
4. Define each of the following: phycobilins, chlorophyll a, chlorophyll b, chlorophyll c, fucoxanthin
5. Refer to page 514 of your text. Define each of the following terms: gametophyte, sporophyte and spores.
6. The life cycles of many algae include both a diploid and a haploid generation. Explain this alternation of generations by drawing out the life cycle of the algae *Ulva.*
7. Read page 515. List the three ways in which algae are most beneficial.
8. Why can red algae live in deeper water than green algae.

**Chapter 22 Plant Diversity**

**Chapter 22-1 Introduction to Plants**

1. What are the main features of plants listed on page 551 of your text?
2. What are the main features of a plant life cycle (p552)
3. What do plants need to survive? (p552)
4. How did the first plants evolve? (p553-p554)
5. List the 4 main groups of living plants (p554)
6. To live successfully on land, what substances must plants obtain from their environment?
7. Which group of plants is the most abundant in the Kingdom Plantae? Why?
8. Draw out the life cycle of plants showing the alternation of generations. Label the cycle using the following words: spores, gametes, sperm, egg, haploid, diploid, sporophyte, gametophyte, mitosis, meiosis.

**22-2 Bryophytes (pp556-559)**

1. What is a bryophyte?
2. What are the main characteristics of a bryophyte?
3. What is osmosis? Why is osmosis relevant to bryophytes?
4. What are the three main groups of bryophytes.
5. Draw and label a moss plant (figure 22-9 p557)
6. Using a dissecting microscope, identify each structure of a moss plant.
7. How do bryophytes reproduce?
8. Name the reproductive structures of a moss plant. (p558)
9. Draw out the life cycle of a moss plant and use figure 22-11.
10. What is a protonema? Is it haploid or diploid?
11. What are the antheridia, the archegonia and the sporangium?
12. List 3 human uses of mosses.
13. What adaptations of bryophytes enable them to live on land?
14. What are gemmae? Are they haploid or diploid?
15. How do bryophytes transport water?

**22-3 Seedless Vascular Plants**

1. What are the characteristics of the 3 phyla of seedless vascular plants?
2. What are tracheids, xylem and phloem? What is the function of each?
3. Do ferns have true roots, true stems and true leaves?
4. What is the structure of a fern? Label a diagram of a fern.
5. What are rhizomes? What are sori?
6. Where do you find sporangia on a fern?
7. What are the stages in the life cycle of a fern?
8. Draw and label the life cycle of a fern.
9. Which generation is dominant in the fern life cycle as compared to mosses?
10. How is vascular tissue important to ferns and their relatives?
11. The size of plants increased dramatically with the evolution of vascular tissue. How might these two events be related?

**22-4 Seed Plants –Gymnosperms – cone bearing plants and Angiosperms**

**22-5 Angiosperms – Flowering Plants**