BIOLOGY 0871 STUDY GUIDE 1

(Chapter 22 – 24)

1.Vocabulary: **Bold faced words** in the Chapters make up the basic vocabulary that you are expected to know.

2. Phrases: **Bold faced phrases** in the Chapters make up the general information you are expected to know and understand.

3. Figures: **Figures** in the Chapters will help you understand the material covered in each chapter. Plant life cycle figures you are expected to be able to draw and/or label without the aid of the textbook.

4. I strongly recommend that you do the Section Assessments for each chapter unit and the end of chapter assessments. Answers to the end of chapter assessments can be found on my weebly site: vccbiology.weebly.com

5. Most handouts or notes I provide to you will reflect the material covered in Chapters 22-24. Handouts and notes from class are all examinable material.

6. The learning objectives below will assist you in your studying for Test 1.

**Chapter 22 Plant Diversity**

Students will be able to identify from a diagram the:

1. Structure of Mosses, Liverworts, Hornworts, Ferns, Angiosperms and Gymnosperms.

Using a dissection or compound light microscope students will be able to identify the following parts of

1. A moss plant: Gametophyte, Sporophyte, sporangium, antheridium, archegonium,

sperm,egg and spores.

1. A fern plant: Gametophyte, Sporophyte, sporangium, antheridium, archegonium,

sperm,egg, spores, sori and frond.

Students will be able to

1. List at least 5 characteristics of all Plants (p551).
2. Explain the life cycles of a fern, a moss and a plant in general (p552, 558,563)
3. Identify when and where in a life cycle of a plant do mitosis and meiosis occur.
4. Identify and explain the 4 essential functions that a plant must carry out to exist (p552)
5. Know which plant phylum is the most successful on earth today (p555)
6. What is a bryophyte? What are the characteristics of a bryophyte? (p556-559)
7. Why are bryophytes not as successful as angiosperms and gymnosperms?
8. How is water essential in the life cycle of a bryophyte and in the life cycle of a Fern? (p558,562-563)
9. Compare and contrast a vascular plant with a nonvascular plant.
10. How is vascular tissue important to ferns, angiosperms and gymnosperms?
11. What are the two types of vascular tissue and what are their functions? (p560)
12. What is the difference between a rhizoid, rhizome and a frond?
13. What is the dominant stage of a moss, a fern, an angiosperm, a gymnosperm?
14. The size of plants increased dramatically with the evolution of vascular tissue. How might these two events be related?
15. Which phyla of plants has reproduction free from water?
16. What are the characteristics of angiosperms? Gymnosperms?
17. What are monocots and dicots? What are the characteristics of each? (p570)
18. What are the three categories of plant life spans?
19. What is a seed? What are different parts of a seed? (p565)
20. What is pollen? Where is pollen formed? (p565)
21. What are the three categories of plant life spans? (p 571)
22. What is a flower? fruit? What is a flowers function? Fruit? (p 568)

**Chapter 23 Roots Stems and Leaves**

1. Describe the organs and tissues of vascular plants. (23.1.1)
2. Identify the specifialized cells of vascular tissue. (23.1.2)
3. Contrast meristematic tissue with other plant tissues. (23.1.3)
4. Describe the two main types of roots. (23.2.1)
5. Identify the tissues and structures in a mature root. (23.2.2)
6. Describe the different functions of roots. (23.2.3)
7. Describe the three main functions of stems. (23.3.1)
8. Contrast a monocot and dicot stem. (23.3.2)
9. Explain how primary growth and secondary growth occurs in stems. (23.3.3.)
10. Describe how the structure of a leaf enables it to carry out photosynthesis. (23.4.1)
11. Describe how gas exchange takes place in a leaf. (23.4.2)
12. What factors regulate the opening and closing of the guard cells? (p597)
13. Describe the cell types found in a typical leaf. (p596)
14. What is transpiration? How does a plant control transpiration? (p596)
15. Explain how water is transported throughout a plant. (23.5.1)
16. Describe how the products of photosynthesis are transported throughout a plant. (23.5.2)
17. How is wood formed? Bark formed? (p592-593)
18. What is the pressure flow hypothesis and what part of plant functioning does it relate to? (p602)

**Chapter 24 Reproduction of Seed Plants**

1. Identify the reproductive structures of angiosperms and gymnosperms (24.1.1)
2. Contrast the structure and function of pollen cone from a seed cone.
3. Describe the life cycle of a gymnosperm and of an angiosperm.
4. Describe the parts of a flower and the function of each part.
5. Explain how pollination and fertilization differ btw angiosperms and gymnosperms (24.1.2)
   1. What is the endosperm of an angiosperm?
   2. What is double fertilization? How has double fertilization led to the success of angiosperms?
6. Describe the development of seeds and fruit (24.2.1)
7. Explain how seeds are dispersed (24.2.2)
8. List the factors that influence the dormancy and germination of seeds (24.2.3)
9. Identify the forms of plant vegetative reproduction (24.3.1)
10. Describe plant propagation (24.3.2)