Unit 7 - Marchantiopsids – Study Questions

1. Why are the Marchantiopsids considered complex?

2. What two types of rhizoids are found in the Marchantiopsids? Describe them and explain the function of each?

3. What is the advantage of elevated gametangia?

4. Characterize the features of Marchantiopsids that are distinct from Jungermanniopsids.

5. Differentiate between simple and complex pores. Give an example of an organism that has each type. Which type of pore better protects against desiccation? How?

6. Explain how the egg is fertilized despite the archegonia being oriented upside down? (How does the archegoniophore's morphology help?)

7. Draw the mature sporophyte of the Marchantiopsida. Label the following along with their ploidy: foot, seta, calyptra, spores, sporangium, elaters.

8. Compare and contrast spores and gemma, include morphological distinctions as well as functional differences.

9. What protects a developing sporophyte on a complex thalloid liverwort?

10. How is the gametophore of *Riella* unlike any other bryophyte?

11. Why are some members of the Marchantiopsids considered “weedy”?

12. How does the development of the sporophyte or *Marchantia* differ from sporophyte development of *Porella*?

13. Draw a simple diagram of the x.s. of the thallus and label the following: air chamber, chlorophyllose cells, complex pore, complex oil body, smooth rhizoid, pegged rhizoid, etc.

14. Draw and label the male and female reproductive structures found in the Marchantiopsids and explain how fertilization occurs. Indicate the ploidy of all structures and where meiosis occurs.

15. Compare and contrast the mature sporophyte of a member of the Marchantiopsids with a member of the Bryopsida.

16. Discuss the importance of splash-cup mechanisms in bryophyte reproduction.

18. Compare and contrast the thallus of *Pellia* and *Monoclea*? How would you tell these organisms apart?

19. Discuss *Monoclea*’s relationship with the rest of the Marchantiopsids.

20. Why is determining evolutionary relationships of the bryophytes problematic?

21. What are some problems that arise when trying to determine evolutionary relationships?