Biology 211 (1) Chapter 31

Vascular Plants:
1. Complete the vocabulary chart:

<table>
<thead>
<tr>
<th>Term</th>
<th>Angiosperm</th>
<th>Antheridia</th>
<th>Archegonia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternation of generations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Artificial selection</td>
<td>Bisexual gametophyte</td>
<td>Carpel</td>
<td>Diploid</td>
</tr>
<tr>
<td>Double fertilization</td>
<td>Endosperm</td>
<td>Fruit</td>
<td>Gametangia</td>
</tr>
<tr>
<td>Gametophyte</td>
<td>Gymnosperm</td>
<td>Haploid</td>
<td>Heterospory</td>
</tr>
<tr>
<td>Homospory</td>
<td>Megaspores</td>
<td>Meiosis</td>
<td>Microspores</td>
</tr>
<tr>
<td>Petals</td>
<td>Pollen grain</td>
<td>Pollination syndrome</td>
<td>Seed</td>
</tr>
<tr>
<td>Sepals</td>
<td>Sporangia</td>
<td>Sporophyte</td>
<td>Sporopollenin</td>
</tr>
<tr>
<td>Stamen</td>
<td>Tracheids</td>
<td>Triploid:</td>
<td></td>
</tr>
</tbody>
</table>

2. In nonvascular plants, the life cycle is with the dominant __________, while in vascular plants, the life cycle is with the dominant __________.
3. What are the two types of vascular tissues? Explain each.
   a.
   b.
4. Describe the function of roots and leaves in vascular plants.
   a. Roots:
   b. Leaves:
5. ____________ are modified leaves with sporangia.
6. What are the two living Phyla of seedless vascular plants? Provide examples for each.
   a.
   b.
7. In Lycophyta the spores are produced in a cone-like structure called ________.
8. Draw the fern life cycle with the following words: Mature sporophyte, Bisexual gametophyte, sori, antheridium, meiosis, spore, archegonium, fertilization, zygote, sperm, egg.
9. Coal forests created the abundant fossil fuels we use today. What plant was dominantly a part of the coal forests and during what time period?

Seed Plants:

10. Seeds are embryonic ________. They develop from the microscopic _____ on the large sporophyte plant.

11. Compare and contrast homospory and heterospory. Which plants are heterosporous? Which plants are homosporous? Which group has a bisexual gametophyte? Megaspores grow into ____ gametophytes and produce _____. Microspores grow into ____ gametophytes and produce_____.

12. Gymnosperms dispersal of pollen is by _______, while angiosperms dispersal of pollen is by _______.

13. The food supply of a seed is called the ________. What are two of the evolutionary advantages to seeds?

14. What are the four Phyla of Gymnosperms? Provide an example for each.

15. Draw a concept map of the alternation of generations of gymnosperms using the following words starting with the mature sporophyte phase: Mature sporophyte, Ovules, Ovulate cone, Fertilization, Diploid, Cones with microsporangia, Embryo, Egg, Meiosis (Use twice), Microspore, Seed, Embryo, Mitosis, Pollen grain, Megasporangium, Haploid, Developing sporophyte

16. Describe the difference between pollination and fertilization.