Biology 211 (1) Exam 3 Review

Chapter 31

Origin of Land Plants:
1. Fill in the correct amount of years ago the following events occurred.
   a. _______ years ago there was a thin coating of cyanobacteria.
   b. _______ years ago the first small plants appeared.
   c. _______ years ago land plants appeared.
2. Describe the two generations in the Alteration of Generations.
   a.

3. Land plants share what three characteristics with protists?
   a.
   b.
   c.

4. Name at least two reasons of why organisms benefited from moving to the terrestrial environment.
   a.
   b.

5. ________________ , a green algae, are the closest relative to land plants.
6. One shared characteristic between plants and their closest relative is the formation of a ________________, which initiates cell division.
7. ________________ are microscopic channels that connect the cells of Charophyceans and land plants.
8. Complete the following chart:

<table>
<thead>
<tr>
<th>Shared traits in plants (not in Charophyceans)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apical meristems</td>
<td></td>
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<tr>
<td>Alternation of Generations</td>
<td></td>
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<tr>
<td>Walled spores produced in sporangia</td>
<td></td>
</tr>
<tr>
<td>Multicellular gametangia</td>
<td></td>
</tr>
<tr>
<td>Multicellular, dependent embryos</td>
<td></td>
</tr>
</tbody>
</table>
9. The __________ in a plant prevents water loss by covering the epidermis.

10. 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_____.
   a.

11. What are the four groups of plants? Provide one example for each.
   a.
   b.
   c.
   d.

Nonvascular Seedless Plants:
12. Watch video: https://www.youtube.com/watch?v=jcWYAnmm-QE

13. What are three phylum within nonvascular seedless plants? Describe them.
   a.
   b.
   c.

14. Bryophytes have ___________ sporophytes that are ___________ on the gametophyte.

All Vascular Plants:

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.

Vascular Seedless Plants:
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.
   a.

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?
   a.

All Vascular Seed Plants:
10. Seeds are embryonic ___________. They develop from the microscopic ___________ on the large sporophyte plant.
11. The food supply of a seed is called the ___________. What are two of the evolutionary advantages to seeds?
   a.
   b.
12. Describe the difference between pollination and fertilization.
   a. Pollination:
   b. Fertilization:

Vascular Seed Plants—Gymnosperms:
13. Gymnosperms dispersal of pollen is by __________, while angiosperms dispersal of pollen is by ____________.
14. What are the four Phyla of Gymnosperms? Provide an example for each.
   a.
   b.
   c.
   d.
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.
Vascular Seed Plants—Angiosperms:

16. In double fertilization, where does each of the sperm attach to and what do they form?

a.

17. Label the following images as monocot or eudicot.


a. b. c. d. e. f. g. h.

18. Draw an idealized flower, label the stamens and carpels, petals and sepals. What is the function of a flower?

a.

19. Draw a concept map of the alternation of generations of angiosperms using the following words: Mature sporophyte, Microspores, Female gametophyte, Male gametophyte, Haploid, Megasporangia, Eggs, Fertilization, Diploid, Meiosis in anther, Sperm, Meiosis in ovary, Zygote, Mitosis and Fruit.
20. Describe how pollination syndromes can influence the shape, scent, and color of a plant’s flowers.
   a. Scent:
   b. Flower shape:
   c. Flower color:
Chapter 32

Fungi In General:

1. What traits best describe fungi? Are they prokaryotic or eukaryotic? Heterotroph or autotroph? Do they have cell walls or not? If they have cell walls, what are these walls made of?
   a.

2. How do fungi digest their food?
   a.

3. Why do fungi need a large surface area? What is a disadvantage to this?
   a.

4. Most species of fungi are ______________, also known as saprobes.

5. _____% of all plant diseases come from fungi.

6. What is an example of a unicellular fungus?

7. Fungi have cell walls made of ________, while plants cell walls are made of ________.

8. A feeding network composed of individual ________ forms the fungal ________.

9. ________ are specialized hype that can extract or exchange nutrients with the host.
   a. Haustorium

10. ________ is a mutualistic relationship between plants and fungi (commonly found with tree roots).

11. How do coenocytic hyphae differ from septate hyphae?
    a.

12. When hyphae meet, they fuse together, which is known as ______________. The hyphae then has two separate nuclei to one cell, which is called ______________. Finally, the nuclei fuse during ______________.

13. What is a lichen?
    a.
Zygomycota:
14. Give an example of zygomycota.
   a.
15. Draw the life cycle for zygomycota.

Basidiomycota:
16. What is the nickname of basidiomycota?
   a.
17. Draw the life cycle for basidiomycota.

Ascomycota:
18. What is the nickname of ascomycota?
   a.
19. Draw the life cycle for ascomycota.