BIOL 204 Homework/Quiz #4 Plants & Fungi **KEY**

Correct answers in bold

1. Seeds are considered "three plants in one" because they contain
a. seed coat from the old sporophyte, nutritive material from the female gametophyte, and embryo that's the new sporophyte.
b. seed coat from the female gametophyte, nutritive material from the male gametophyte, and the embryo that's the new sporophyte.
c. nutritive material from the old sporophyte, the spore from the male gametophyte, and the new zygote.
d. triple active cleansers that are not available in any store, but cost only $9.99 if you call 1-800-468-7333. That's 1-800-GOT-SEED. Dial now.

2. **True**/False. All flowering plants also have fruits and seeds.

3. Which of the following evolutionary trends are seen in the green plants
I. Land plants are all embryophytes, but green algae are not.
II. Development of a cuticle that was related to development of vascular tissue.
III. The earliest land plants dispersed by spores, but later lineages disperse by seeds.
IV. Secondary growth that evolved with the first true vascular tissue.
a. I and II **b. I, II, and III** c. I, II, III, and IV d. I only e. III and IV

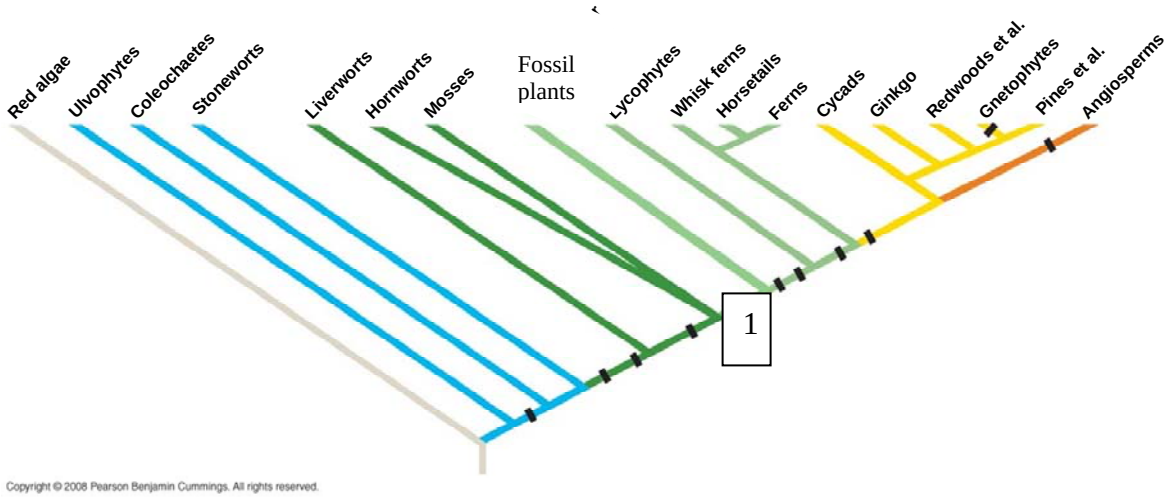
4. Land plants provide which of the following benefits to humans (check all that are correct – could be none, one, or more than one. You need any/all correct to get credit).
a. ecosystem services such as building soil fertility, moderating climate, and retaining water.
b. a source of novel antibiotics (e.g., penicillin).
c. serve as the base for all terrestrial and aquatic food webs
d. provided fuel for the industrial revolution

5. Evolution of lignin-reinforced cell walls was significant for a couple of reasons. Which of the following is NOT one of those reasons?
a. lignin-reinforced cell walls allowed for greater height growth
b. lignin-reinforced cell walls allowed for more efficient conduction of photosynthate from leaves to roots
c. lignin-reinforced cell walls allowed for more efficient transport of water from roots to leaves
d. vessel elements conduct fluid more efficiently than tracheids, but at greater risk of cavitation

6. Matching

a. protect gametes as they develop	**v.**	i. seeds
b. nourish developing embryos	**iv.**	ii. pollen
c. transport sperm in the absence of water	**ii.**	iii. fruit
d. provide stored nutrients & protective coat for offspring dispersal	**i.**	iv. gametophyte
e. allowed for evolution of novel dispersal strategies	**iii.**	v. gametangia

7. In the plant phylogeny, below, what structures or adaptations likely evolved at point 1?



a. seeds and fruit
b. vascular tissue, true leaves, and secondary growth
c. vessel elements, tracheids, and heterospory
d. vascular tissue and dominant sporophytes

8. The most diverse plant group in the above phylogeny arose
a. in the radiation of the ferns
b. in the widespread conifers
c. following the co-evolution with animals for pollination and seed dispersal
d. through the tremendous radiation of the Gingkophyta
e. due to asexual reproduction by gemmae in the liverworts

9. Fungi are effective decomposers because
a. mycelia have high surface area
b. they contain enzymes that can degrade tough compounds like lignin
c. they can make a living off just about any organic carbon compound
d. all of the above

10. The fungal life cycle and plant life cycle are similar and different in which of the following ways?
I. both fungal and plant life cycles have multicellular haploid individuals
II. both fungi and plants have a dikaryotic growth stage when making fruiting bodies
III. while fungi are predominantly haploid, all plants are predominantly diploid
IV. in both fungal and plant life cycles, the products of meiosis are haploid spores

a. I only b. III only c. III and IV d. I, II, and IV **e. I and IV**