

BOT 125 - Plant Morphology
Spring 1993, Midterm

Answer all questions on the Scantron sheet. Please **keep** this sheet, and turn in the Scantron only. *Please write your lab section on the Scantron* (sect. 1 = MW 12-3, sect. 2 = MW 3-6). There is only one correct answer to each question.

1. _____ are **always** haploid.
 - a. Gametangia
 - b. Gametes
 - c. Meiosporangia
 - d. Sporophytes
 - e. Zoospores

2. _____ are **always** diploid.
 - a. Gametangia
 - b. Gametes
 - c. Meiospores
 - d. Sporophytes
 - e. Zoospores

3. _____ are **always** flagellated.
 - a. Egg cells
 - b. Protista
 - c. Sperm cells
 - d. Zoospores
 - e. Zygotes

4. A perithecium
 - a. has asci on the inside
 - b. has asci on the outside
 - c. is an open, cup-shaped structure
 - d. is formed of diploid cells
 - e. is found in the Zygomycota

5. A multicellular or multinucleate diploid stage is **never** found in the life cycle of
 - a. animals
 - b. Basidiomycota
 - c. Chytridiomycota
 - d. Myxomycota
 - e. Oomycota

6. According to the endosymbiosis theory,
 - a. brown algae have the same chloroplasts as cyanobacteria
 - b. chloroplasts and mitochondria of eukaryotic cells originated from symbiotic prokaryotic organisms
 - c. the Golgi apparatus of eukaryotic cells was originally bacterial in origin
 - d. the naked, circular DNA and bacterial-type ribosomes of chloroplasts and mitochondria show that prokaryotes evolved from eukaryotes
 - e. the original eukaryotic cells had no DNA
7. Alginic acids come from _____ and are used in the manufacture of _____.
 - a. Chrysophyta . . . paints
 - b. Phaeophyta . . . food products
 - c. Phaeophyta . . . steel
 - d. Rhodophyta . . . food products
 - e. Rhodophyta . . . steel
8. **All** eukaryotes have
 - a. cell walls
 - b. chloroplasts
 - c. endoplasmic reticulum
 - d. flagella
 - e. mitochondria
9. Although the Bacillariophyceae and Xanthophyceae are both placed in the Chrysophyta, they differ because
 - a. one has green plastids and the other has brown plastids
 - b. one has cellulose cell walls and the other has chitin cell walls
 - c. one is always marine and the other is always freshwater
 - d. one is haploid-dominant and the other has alternation of generations
 - e. one consists of coenocytic filaments and the other is primarily unicellular
10. An ascus characteristically produces
 - a. 32 meiospores
 - b. eight asexual spores
 - c. eight meiospores
 - d. four gametes
 - e. hundreds of asexual spores
11. An aseptate multinucleate haploid stage is found in the life cycle of
 - a. Ascomycota
 - b. Basidiomycota
 - c. cyanobacteria
 - d. Oomycota
 - e. Zygomycota
12. Asexual reproduction
 - a. in the Zygomycota occurs by means of conidia
 - b. in the Basidiomycota is common in the class Homobasidiomycetes

- c. in the Basidiomycota occurs by means of flagellated zoospores
 - d. is more common in the Ascomycota than in the Basidiomycota
 - e. is unknown in the Oomycota
13. Diatomaceous earth is composed mainly of the _____ of _____.
- a. cell walls . . . diatoms
 - b. cell walls . . . dinoflagellates
 - c. crushed remains . . . swimming pools
 - d. flagella . . . diatoms
 - e. flagella . . . dinoflagellates
14. Fucoxanthin is not found in the chloroplasts of division
- a. Chrysophyta, class Bacillariophyceae
 - b. Chrysophyta, class Chrysophyceae
 - c. Chrysophyta, class Xanthophyceae
 - d. Phaeophyta
 - e. Pyrrophyta
15. Gametes are the only haploid cells in the
- a. Bacillariophyceae
 - b. Bryophyta
 - c. Rhodophyta
 - d. Phaeophyta
 - e. Xanthophyceae
16. Gametophytes
- a. are always green and heart-shaped
 - b. are diploid
 - c. come from gametes
 - d. produce gametes
 - e. produce meiospores
17. If you were to collect the mycelium of a member of the Ascomycota, it would most likely be
- a. anucleate
 - b. aseptate
 - c. dikaryotic
 - d. diploid
 - e. haploid
18. If you were to collect the mycelium of a member of the Basidiomycota, it would most likely be
- a. anucleate
 - b. aseptate
 - c. dikaryotic
 - d. diploid
 - e. haploid
19. In diatoms, an **auxospore** forms from
- a. a large diatom cell

- b. a meiospore
 - c. a non-flagellated asexual spore
 - d. the union of gametes
 - e. the union of zoospores
20. It is believed that eukaryotes acquired mitochondria only once in their evolution because
- a. all mitochondria carry out oxidative respiration
 - b. all mitochondria form basal bodies
 - c. all mitochondria have similar genes and similar structures
 - d. all mitochondria have the same chlorophyll
 - e. all modern eukaryotes have mitochondria
21. Paramylon is a food storage substance in the division
- a. Chlorophyta
 - b. Chrysophyta
 - c. Euglenophyta
 - d. Phaeophyta
 - e. Pyrrhophyta
22. *Phytophthora infestans*, a member of the Oomycota, is important because
- a. it is the cause of late blight of potatoes.
 - b. it is the source of carbon dioxide in breadmaking
 - c. it is the source of ethanol in beer and wine
 - d. it is the source of penicillin
 - e. it produces aflatoxin when growing on stored peanuts, beans, and grains
23. Some members of the division _____ commonly have silica in their cell walls.
- a. Chlorophyta
 - b. Chrysophyta
 - c. Euglenophyta
 - d. Phaeophyta
 - e. Pyrrhophyta
24. Sporophytes
- a. always produce gametes
 - b. are characteristically unicellular
 - c. are diploid
 - d. are haploid
 - e. come from meiospores
25. The "red tide" is caused by members of the division
- a. Chlorophyta
 - b. Chrysophyta
 - c. Euglenophyta
 - d. Pyrrhophyta
 - e. Rhodophyta
26. The Acrasiomycota receive nutrition by
- a. absorbing food from decaying vegetation

- b. hanging around college cafeterias
 - c. ingesting bacteria and other small organisms
 - d. parasitism
 - e. photosynthesis
27. The asexual spores of the Oomycota
- a. are called zygospores
 - b. are flagellated
 - c. are formed by meiosis
 - d. come from gametangia
 - e. come from meiosporangia
28. The asexual spores of the Zygomycota
- a. are called zygospores
 - b. are formed by meiosis
 - c. are produced in sac-like sporangia at the ends of hyphae
 - d. come from conidia
 - e. come from zoosporangia
29. The budding of yeast is equivalent to
- a. formation of basidiospores
 - b. formation of conidia
 - c. fusion of non-flagellated gametes
 - d. plasmogamy
 - e. swarming of myxamoebae
30. The cell walls of cyanobacteria consist of
- a. cellulose
 - b. chitin
 - c. nothing (they have no cell walls)
 - d. peptidoglycan
 - e. starch
31. The cyanobacteria
- a. are also called blue-brown algae
 - b. are heterotrophic
 - c. can fix atmospheric nitrogen
 - d. contain only multicellular forms
 - e. live only in highly polluted lakes
32. The diploid cells in Basidiomycota are called
- a. basidiospores
 - b. dikaryotic
 - c. hyphae
 - d. zoospores
 - e. zygotes
33. The division Pyrrophyta
- a. contains no filamentous forms

- b. consists of organisms that play an important ecological role in the rocky intertidal zone.
 - c. contains fewer than 20 species
 - d. is the closest relative to the kingdom Plantae
 - e. is the source of all edible seaweed and seaweed products
34. The filaments that form a mycelium are called
- a. coenocoels
 - b. conidiophores
 - c. dikaryon
 - d. hyphae
 - e. meiospores
35. The five kingdoms described by Margulis and used in many textbooks are
- a. Animalia, Monera, Fungi, Plantae, Protista
 - b. Cyanobacteria, Protista, Animalia, Plantae, Monera
 - c. Fungi, Archaeobacteria, Animalia, Protista, Monera
 - d. monasteries, proctologists, animists, funnybones, and planks
 - e. Protozoa, Plantae, Fungi, Algae, Animalia
36. The Fungi Imperfecti consist of
- a. fungi in which asexual reproduction does not occur
 - b. mostly Ascomycota
 - c. mostly Basidiomycota
 - d. mostly Oomycota
 - e. mostly Zygomycota
37. The gametes of the Zygomycota
- a. are diploid
 - b. are the tips of hyphae that contact hyphae from another mating strain
 - c. consist of eggs and sperm
 - d. have flagella
 - e. swim long distances
38. The Linnaean hierarchy, in order from the largest, most inclusive level to the smallest, least inclusive level, is
- a. Kingdom, Division, Class, Order, Family, Genus, Species
 - b. Kingdom, Division, Family, Order, Class, Genus, Species
 - c. Specie, Genius, Famished, Odor, Clasp, Phylum, Kingdome
 - d. Species, Genus, Class, Order, Family, Division, Kingdom
 - e. Species, Genus, Family, Order, Class, Division, Kingdom
39. The most probable adaptive value of the dikaryotic condition is that
- a. it forces the formation of a diploid sporophyte
 - b. it mimics some of the genetic consequences of diploidy
 - c. it promotes asexual reproduction
 - d. the two nuclei in each cell are genetically identical
 - e. there is a spare nucleus in every cell in case the main nucleus is eaten

40. The name Characeae refers to a(n) _____ and the name Mucorales refers to a(n) _____.
- class . . . order
 - division . . . class
 - division . . . family
 - family . . . order
 - order . . . genus
41. The plasmodium of the Myxomycota
- can ingest organisms as large as a small puppy
 - grows from a single cell
 - has cellulose cell walls
 - is formed by the fusion of many separate cells
 - is photosynthetic
42. The structure of compacted hyphae in the Ascomycota that bears the reproductive parts is called the
- ascocarp
 - ascogonium
 - basidiocarp
 - basidiothecium
 - perigynium
43. The structure of compacted hyphae in the Basidiomycota that bears the reproductive parts is called the
- ascocarp
 - ascogonium
 - basidiocarp
 - cleistothecium
 - perigynium
44. Two divisions of heterotrophic organisms that have chitin cell walls are
- Acrasiomycota and Oomycota
 - Ascomycota and Oomycota
 - Basidiomycota and Chytridiomycota
 - Chytridiomycota and Oomycota
 - Zygomycota and Myxomycota
45. When you eat a common pizza mushroom (*Agaricus brunnescens*), you are eating
- a basidiocarp
 - an apothecium
 - a mass of ascospores
 - a member of the kingdom Plantae
 - haploid mycelium
46. You are taking a lab exam. The question is "What is the name of this diploid cell in *Vaucheria*?" Although you remember that *Vaucheria* is in the Xanthophyceae, the illuminator on the scope is burned out. Quick! The most likely answer is
- ascospore

- b. gametangium
 - c. gamete
 - d. zoospore
 - e. zygote
47. You are taking a lab exam. The question says "What is the name of the diploid cell at the pointer", and the slide says "Basidiomycete sexual cycle", but the bulb is burned out so you can't see the slide. The correct answer is
- a. ascospore
 - b. conidiospore
 - c. oospore
 - d. there is no way to tell
 - e. zygote