BOT 125 - Plant Morphology
Winter 1995, Midterm

1. **Read these directions before you begin.**
2. Write your name on your Scantron sheet (**tests without names will not be graded**).
3. Write your ***lab*** section on the Scantron sheet (sect. 1 = MW 12-3, sect. 2 = MW 3-6). **Scantrons without lab sections will have one point deducted from the total.**
4. Check this test to make sure it has all pages, 1–9.
5. Mark all answers on the Scantron sheet. There is *only one* correct answer to each question.
6. When you are finished, turn in the Scantron on the front table. ***Please keep this sheet.***

1. _____ are **always** haploid.
   a. Asexual spores
   b. Gametangia
   c. Meiocytes
   d. Meiosporangia
   e. Meiospores

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

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

4. _____ ordinarily have one long, active flagellum for swimming
   a. Acrasiomycota
   b. Cyanobacteria
   c. Euglenophyta
   d. Pyrrhophyta
   e. Zygomycota

5. A basidium characteristically produces
   a. eight ascospores

b. flagellated sperm cells
c. four gametes
d. four meiospores
e. hundreds of asexual spores

6. A common food storage substance in the division Euglenophyta is
   a. cellulose
   b. lipids
   c. paramylon
   d. pellicle
   e. starch

7. A mat or web of fungal hyphae is called a
   a. morula
   b. mycelium
   c. mycenaean
   d. mycoplasma
   e. myxamoeba

8. A multicellular or multinucleate haploid stage is **never** found in the life cycle of
   a. Ascomycota
   b. Basidiomycota
   c. Oomycota
   d. Xanthophyceae
   e. Zygomycota

9. According to the endosymbiosis theory,
   a. Rhodophyta chloroplasts are derived from cyanobacteria
   b. mitochondria and chloroplasts of prokaryotic cells originated from symbiotic eukaryotic organisms
   c. naked, circular DNA and bacterial-type ribosomes of chloroplasts and mitochondria show that prokaryotes evolved from eukaryotes
   d. the cell wall of eukaryotic cells was originally bacterial in origin
   e. the original eukaryotic cells had no cytoplasm

10. Akinetes are
    a. gametes
    b. meiospores
    c. resting spores
    d. zoospores
    e. zygotes

11. **All** eukaryotes have
    a. basal bodies
    b. cell walls
    c. chloroplasts
    d. chromosomes
    e. mitochondria

12. Although the Bacillariophyceae and Xanthophyceae are both placed in the Chrysophyta, they differ because
    a. one has cellulose cell walls and the other has chitin cell walls
    b. one has red plastids and the other has brown plastids
    c. one is always marine and the other is always freshwater
    d. one is haploid-dominant and the other is diploid-dominant
    e. one is primarily multicellular and the other consists of coenocytic filaments

13. Although they have chloroplasts, some members of the _____ can live as heterotrophs by eating other organisms.
    a. Basidiomycota
    b. Chytridiomycota
    c. Cyanobacteria
    d. Oomycota
    e. Pyrrhophyta

14. An apothecium
    a. has basidia on the inside
    b. has basidia on the outside
    c. is a bottle-shaped structure
    d. is formed of diploid cells
    e. is found in the Ascomycota

15. An aseptate multinucleate diploid stage is found in the life cycle of
    a. Acrasiomycota
    b. Basidiomycota
    c. Bacillariophyceae
    d. Oomycota
    e. Zygomycota

16. Asexual reproduction
    a. in the Ascomycota occurs by means of flagellated zoospores
    b. in the Zygomycota occurs by means of conidiospores
    c. is less common in the Basidiomycota than in the Ascomycota
    d. is less common that sexual reproduction in the Acrasiomycota
    e. is unknown in the Oomycota

17. Cell walls of Euglenophyta consist of
    a. cellulose
    b. nothing (they have no cell walls)
    c. paramylon
    d. peptidoglycan
    e. silica

18. Cell walls of the _____ contain neither cellulose nor chitin
    a. Acrasiomycota
    b. Ascomycota
    c. Cyanophyta
    d. Xanthophyceae
    e. Zygomycota

19. Flagellated cells are never found in the
    a. Chytridiomycota
    b. Myxomycota
    c. Oomycota
    d. Pyrrhophyta
    e. Zygomycota

20. Gametophytes
    a. are always photosynthetic
    b. are diploid
    c. come from gametes
    d. produce gametes
    e. produce meiosporocytes

21. 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

22. In diatoms, an **auxospore** forms from
    a. a large diatom cell
    b. a meiospore
    c. a non-flagellated asexual spore
    d. the meiotic products of a zygote
    e. the union of gametes

23. It is believed that eukaryotes acquired mitochondria only once in their evolution because all
    a. living eukaryotes have mitochondria
    b. mitochondria carry out fermentative respiration
    c. mitochondria form from chloroplasts
    d. mitochondria have similar genes and similar structures
    e. mitochondria have the same accessory pigments

24. Most of the fungi that take part in the lichen symbiosis are members of the division
    a. Acrasiomycota
    b. Ascomycota
    c. Basidiomycota
    d. Sorediomycota
    e. Zygomycota

25. One piece of evidence that the lichen association is parasitic is that
    a. a lichen-forming fungus can attack different species of algae
    b. air pollution kills the fungi, but the algae survive
    c. lichens can be grouped as crustose, foliose, squamulose, and fruticose
    d. lichens can live anywhere
    e. the fungi can live on their own, but the algae can't

26. *Saccharomyces cerevisiae*, a member of the Ascomycota, 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

27. Some members of the division _____ commonly have silica in their cell walls.
    a. Acrasiomycota
    b. Ascomycota
    c. Chrysophyta
    d. Euglenophyta
    e. Myxomycota

28. Sporophytes
    a. always produce gametes
    b. are dikaryotic
    c. are diploid
    d. are haploid
    e. come from meiospores

29. The _____ are primarily terrestrial.
    a. Chrysophyta
    b. Euglenophyta
    c. Oomycota
    d. Pyrrhophyta
    e. Zygomycota

30. The “red tide” is caused by members of the division
    a. Chrysophyta
    b. Chytridiomycota
    c. Cyanobacteria
    d. Euglenophyta
    e. Pyrrhophyta

31. 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

32. The budding of yeast is equivalent to
    a. formation of ascospores
    b. formation of conidia
    c. formation of zygospores
    d. plasmogamy
    e. swarming of myxamoebae

33. The cyanobacteria
    a. are also called yellow-green algae
    b. are heterotrophic
    c. can fix atmospheric nitrogen
    d. contain only unicellular forms
    e. live only in highly polluted lakes

34. The dikaryotic condition is most likely important to fungi because
    a. it forces the formation of a diploid sporophyte
    b. it is genetically similar to diploidy
    c. it inhibits sexual reproduction
    d. the two nuclei in each cell are genetically identical
    e. there is an extra nucleus in every cell in case the main nucleus is lost

35. The diploid cells in Basidiomycota are called
    a. basidiospores
    b. dikaryotic
    c. hyphae
    d. oospores
    e. zygotes

36. The five kingdoms described by Margulis and used in many textbooks are
    a. Cyanobacteria, Protista, Animalia, Plantae, Monera
    b. Fungi, Archaebacteria, Animalia, Protista, Monera
    c. Monotremata, Priapulida, Annelida, Funaria, and Platyhelminthes
    d. Plantae, Fungi, Monera, Animalia, Protista
    e. Protozoa, Plantae, Fungi, Algae, Animalia

37. The Fungi Imperfecti consist of
    a. fungi for which the sexual cycle is unknown or poorly known
    b. mostly Acrasiomycota
    c. mostly Chytridiomycota
    d. mostly Oomycota
    e. mostly Zygomycota

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 multicellular "slug" of the Acrasiomycota
    a. can ingest organisms as large as a small puppy
    b. grows from a single cell
    c. has no cell walls
    d. is formed from many separate cells
    e. is dikaryotic

40. The Myxomycota receive nutrition by
    a. absorbing food from decaying vegetation
    b. hitting up the vending machines
    c. ingesting bacteria and other small organisms
    d. parasitism
    e. photosynthesis

41. The name Ceratomyxaceae refers to a(n) _____ and the name Peridiniales refers to a(n) _____.
    a. class . . . order
    b. family . . . class
    c. division . . . family
    d. family . . . order
    e. order . . . genus

42. The structure of compacted hyphae in the Basidiomycota that bears the reproductive parts is called the
    a. ascocarp
    b. ascogonium
    c. basidiocarp
    d. cleistothecium
    e. perigynium

43. The zygotes 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

44. Three divisions of heterotrophic organisms that have chitin cell walls are
    a. Acrasiomycota, Chrysophyta, and Oomycota
    b. Ascomycota, Basidiomycota, and Zygomycota
    c. Ascomycota, Zygomycota, and Myxomycota
    d. Cyanobacteria, Basidiomycota, and Chytridiomycota
    e. Zygomycota, Ascomycota, and Oomycota

45. When you eat a common pizza mushroom (*Agaricus brunnescens*), you are eating
    a. a mass of zygospores
    b. a plasmodium
    c. an apothecium
    d. an ascocarp
    e. dikaryotic mycelium

46. Which one of these has neither chlorophyll c nor chlorophyll b?
    a. Bacillariophyceae
    b. Euglenophyta
    c. Pyrrhophyta
    d. Xanthophyceae
    e. Cyanobacteria

47. You are looking at a sporangium of the Myxomycota. The little round cells are meiospores, and the rest of it is
    a. mycelium
    b. myxamoebae
    c. parenchyma
    d. plasmodium
    e. plectenchyma

48. You are taking a lab exam. The dish contains *Vaucheria* of the Xanthophyceae, and the question asks "What is the ploidy level of the zygote at the pointer?" The pointer is missing. What should you answer?
    a. diploid
    b. gamete
    c. haploid
    d. meiospore
    e. no answer—its ploidy level cannot be determined without the pointer.

49. You are taking a lab exam. The question says “What is the name of the diploid cell at the pointer”, and the slide says “*Phycomyces*—Zygomycota”, but the lens is fogged 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

50. You would likely find a hymenium when you look for the meiospores of the
    a. Basidiomycota
    b. Chrysophyta
    c. Euglenophyta
    d. Oomycota
    e. Zygomycota