

**BOT 125 - Plant Morphology
Spring 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. Meiospores
 - d. Sporophytes
 - e. Zoospores
2. _____ are **always** diploid.
 - a. Gametangia
 - b. Gametes
 - c. Meiospores
 - d. Zoospores
 - e. Zygotes
3. _____ are **always** flagellated.
 - a. Egg Gametes
 - b. Meiospores
 - c. Protista
 - d. Sperm cells
 - e. Zoospores
4. _____ ordinarily have one long, active flagellum for swimming
 - a. Acrasiomycota
 - b. Chlorophyta
 - c. Euglenophyta
 - d. Pyrrhophyta
 - e. Zygomycota

5. A common food storage substance in the division Euglenophyta is
 - a. glycogen
 - b. lipids
 - c. paramylon
 - d. pellicle
 - e. starch
6. A mat or web of fungal hyphae is called a
 - a. morula
 - b. mycelium
 - c. mycenaeen
 - d. mycoplasma
 - e. myxamoeba
7. A perithecium
 - a. has asci on the inside
 - b. has basidia on the outside
 - c. is an open, cup-shaped structure
 - d. is formed of diploid cells
 - e. is found in the Zygomycota
8. A similarity between the Rhodophyta and Phaeophyta is that virtually all members of both groups
 - a. are unicellular
 - b. have red plastids
 - c. have chitin cell walls
 - d. have free-living meiospore-producing sporophytes
 - e. have two flagella
9. According to the endosymbiosis theory,
 - a. brown algae have the same chloroplasts as 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. Rhodophyta chloroplasts are derived from cyanobacteria
 - e. the nuclei of eukaryotic cells were originally cyanobacteria
10. Akinetes are
 - a. gametes
 - b. meiospores
 - c. resting spores
 - d. zoospores
 - e. zygotes

11. **All** eukaryotes have
 - a. cell walls
 - b. chloroplasts
 - c. endoplasmic reticulum
 - d. flagella
 - e. mitochondria

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

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

14. Asexual reproduction
 - a. in the Basidiomycota occurs by means of flagellated zoospores
 - b. in the Rhodophyta occurs by means of conidia
 - c. is less common than sexual reproduction in the Acrasiomycota
 - d. is more common in the Ascomycota than in the Basidiomycota
 - e. is unknown in the Oomycota

15. Carrageenan comes from _____ and is used in the manufacture of _____.
 - a. Bryophyta . . . paints
 - b. Chrysophyta . . . paints
 - c. Phaeophyta . . . food products
 - d. Phaeophyta . . . steel
 - e. Rhodophyta . . . food products
 - f. Rhodophyta . . . steel

16. Diatomaceous earth is composed mainly of the _____ of _____.
 - a. cell walls . . . Chrysophyta
 - b. cell walls . . . Pyrrhophyta
 - c. crushed remains . . . swimming pools
 - d. flagella . . . diatoms
 - e. flagella . . . dinoflagellates

17. Ethanol in beer is produced by the action of
- Agaricus brunnescens*
 - Aspergillus flavus*
 - Penicillium notatum*
 - Phytophthora infestans*
 - Saccharomyces cerevisiae*
18. Flagellated cells are never found in the
- Chytridiomycota
 - Euglenophyta
 - Myxomycota
 - Oomycota
 - Rhodophyta
19. Fucoxanthin is not found in the chloroplasts of division
- Chrysophyta, class Bacillariophyceae
 - Chrysophyta, class Chrysophyceae
 - Phaeophyta
 - Pyrrhophyta
 - Rhodophyta
20. Gametes are the only haploid cells in the
- Ascomycota
 - Bacillariophyceae
 - Phaeophyta
 - Rhodophyta
 - Xanthophyceae
21. If you were to collect the mycelium of a member of the Ascomycota, it would most likely be
- anucleate
 - aseptate
 - dikaryotic
 - diploid
 - haploid
22. In *Ectocarpus*, meiospores
- are diploid
 - are not produced
 - are produced in plurilocular sporangia
 - are produced in unilocular sporangia
 - develop into large multicellular sporophytes
23. In diatoms, an **auxospore** forms from
- a large diatom cell
 - a meiospore
 - the meiotic products of a zygote
 - the union of gametes
 - the union of zoospores

24. In the Rhodophyta, tetrasporophytes
- come from tetraspores
 - come from zygotes
 - produce carpospores by meiosis
 - produce gametes by mitosis
 - produce tetraspores by meiosis
25. Members of the division _____ lack a cell wall.
- Ascomycota
 - Chrysophyta
 - Myxomycota
 - Oomycota
 - Pyrrhophyta
26. One piece of evidence that the lichen association is parasitic is that
- a lichen-forming fungus can attack different species of algae
 - air pollution kills the fungi, but the algae survive
 - lichens can be grouped as crustose, foliose, squamulose, and fruticose
 - lichens can live anywhere
 - the fungi can live on their own, but the algae can't
27. Organisms of the division Phaeophyta
- are never multicellular gametophytes
 - have chlorophyll b and β -carotene
 - have no cell walls
 - have non-flagellated sperm cells
 - transport food in the form of mannitol
28. Some members of the division _____ commonly have silica in their cell walls.
- Ascomycota
 - Chrysophyta
 - Euglenophyta
 - Myxomycota
 - Phaeophyta
29. Sporophytes
- always produce gametes
 - are characteristically unicellular
 - are dikaryotic
 - are haploid
 - come from zygotes
30. The _____ are primarily terrestrial.
- Chrysophyta
 - Chytridiomycota
 - Euglenophyta
 - Pyrrhophyta
 - Zygomycota

31. The “red tide” is caused by members of the division
- Chrysophyta
 - Chytridiomycota
 - Cyanobacteria
 - Pyrrhophyta
 - Rhodophyta
32. The asexual spores of the Ascomycota
- are called conidia
 - are called zygospores
 - are formed by meiosis
 - are produced in sac-like sporangia at the ends of hyphae
 - come from zoosporangia
33. The cyanobacteria
- are also called yellow-green algae
 - are autotrophic
 - can fix atmospheric helium
 - contain only unicellular forms
 - live only in highly polluted lakes
34. The dikaryotic condition is most likely important to fungi because
- it forces the formation of a diploid sporophyte
 - it is genetically similar to diploidy
 - it inhibits sexual reproduction
 - the two nuclei in each cell are genetically identical
 - there is an extra nucleus in every cell in case the main nucleus is lost
35. The division Rhodophyta
- consists of organisms that play an important ecological role in the rocky intertidal zone.
 - consists of organisms with silica cell walls
 - contains as many as 200,000 species
 - contains no filamentous forms
 - is the source of all edible seaweed and seaweed products
36. The Fungi Imperfecti consist of
- fungi in which asexual reproduction seldom occurs
 - fungi in which sexual reproduction is or was unknown
 - mostly Acrasiomycota
 - mostly Basidiomycota
 - mostly Oomycota
37. The gametes of the Zygomycota
- are diploid
 - are the tips of hyphae that contact hyphae from another mating strain
 - consist of eggs and sperm
 - have flagella
 - swim long distances

38. The Linnaean hierarchy, in order from the smallest, least inclusive level to the largest, most inclusive level, is
- Kingdom, Division, Class, Order, Family, Genus, Species
 - Kingdom, Division, Family, Order, Class, Genus, Species
 - Specie, Genius, Famished, Odor, Clasp, Phylum, Kingdome
 - Species, Genus, Class, Order, Family, Division, Kingdom
 - Species, Genus, Family, Order, Class, Division, Kingdom
39. The multicellular “slug” of the Acrasiomycota
- can ingest organisms as large as a small puppy
 - grows from a single cell
 - has no cell walls
 - is dikaryotic
 - is formed from many separate cells
40. The Myxomycota receive nutrition by
- absorbing food from decaying vegetation
 - hitting up the vending machines
 - ingesting bacteria and other small organisms
 - parasitism
 - photosynthesis
41. The name Polypodiaceae refers to a(n) _____ and the name Ulvales refers to a(n) _____.
- class . . . order
 - family . . . class
 - division . . . family
 - family . . . order
 - order . . . genus
42. The sterile jacket of the oogonium of *Chara* most likely benefits the organism by
- allowing it to colonize of the land
 - preventing fertilization
 - producing vascular tissue
 - protecting the zygote
 - providing nutrients to the developing sporophyte
43. The structure in rockweeds such as *Fucus* that contains the gametangia is called the
- conceptacle
 - cystocarp
 - gametangiophore
 - paraphysis
 - perithecium

44. The structure of compacted hyphae in the Basidiomycota that bears the reproductive parts is called the
- ascocarp
 - ascogonium
 - basidiocarp
 - basidiothecium
 - cleistothecium
45. Three divisions of heterotrophic organisms that have chitin cell walls are
- Acrasiomycota, Chrysophyta, and Oomycota
 - Acrasiomycota, Myxomycota, and Oomycota
 - Ascomycota, Basidiomycota, and Zygomycota
 - Ascomycota, Zygomycota, and Myxomycota
 - Cyanobacteria, Basidiomycota, and Chytridiomycota
46. *Volvox* of the Chlorophyta
- is a hollow, spherical colony
 - is a single large multinucleate cell with many flagella
 - is a stage leading to multicellular animals
 - is a stage leading to the multicellular Phaeophyta
 - is the closest relative of the Kingdom Plantae
47. Which one of these does not have chlorophyll *c*?
- Bacillariophyceae
 - Phaeophyta
 - Pyrrhophyta
 - Xanthophyceae
 - Zygomycota
48. You are looking at a sporangium of the Myxomycota. The little round cells are meiospores, and the rest of it is
- mycelium
 - myxamoebae
 - parenchyma
 - plasmodium
 - plectenchyma
49. You are taking a lab exam. The dish contains *Oedogonium* of the Chlorophyta, and the question asks “What is the ploidy level of the sessile gamete at the pointer?” The pointer is missing. What should you answer?
- diploid
 - egg cell
 - haploid
 - meiospore
 - no answer—its ploidy level cannot be determined without the pointer.

50. You are taking a lab exam. The question is “What is the name of this diploid cell in *Coprinus*?” Although you remember that *Coprinus* is in the Basidiomycota, the illuminator on the scope is burned out. Quick! The most likely answer is
- a. ascospore
 - b. gametangium
 - c. gamete
 - d. zoospore
 - e. zygote