

BOT 125 - Plant Morphology
Fall 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. Meiosporangia
 - c. Meiospores
 - 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 cleistothecium
 - a. has asci on the inside
 - b. has asci on the outside
 - c. is a cup-shaped structure
 - d. is formed of diploid cells
 - e. is found in the Oomycota

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

6. A multicellular or multinucleate haploid stage is **never** found in the life cycle of
 - a. Ascomycota
 - b. Basidiomycota
 - c. Chytridiomycota
 - d. Oomycota
 - e. Zygomycota
7. A multinucleate diploid stage is found in the life cycle of
 - a. Acrasiomycota
 - b. Basidiomycota
 - c. most Ascomycota
 - d. Oomycota
 - e. Zygomycota
8. According to the endosymbiosis theory,
 - a. mitochondria and chloroplasts of eukaryotic cells originated from symbiotic prokaryotic organisms
 - b. red algae have the same chloroplasts as cyanobacteria
 - c. the naked, circular DNA and bacterial-type ribosomes of chloroplasts and mitochondria show that prokaryotes evolved from eukaryotes
 - d. the nuclei of eukaryotic cells were originally cyanobacteria
 - e. the original prokaryotic cells had no DNA
9. **All** eukaryotes have
 - a. cell walls
 - b. chloroplasts
 - c. chromosomes
 - d. flagella
 - e. mitochondria
10. 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 has alternation of generations
 - e. one is primarily unicellular and the other consists of coenocytic filaments
11. An aseptate multinucleate haploid stage is found in the life cycle of
 - a. Acrasiomycota
 - b. Ascomycota
 - c. Basidiomycota
 - d. Oomycota
 - e. Zygomycota

12. Asexual reproduction
- in the Basidiomycota is mostly restricted to the class Homobasidiomycetes
 - in the Basidiomycota occurs by means of flagellated zoospores
 - in the Zygomycota occurs by means of conidiospores
 - is more common in the Ascomycota than in the Basidiomycota
 - is unknown in the Oomycota
13. Diatomaceous earth is composed mainly of the _____ of _____.
- cell walls . . . diatoms
 - cell walls . . . dinoflagellates
 - cell walls . . . euglenas
 - crushed remains . . . swimming pools
 - flagella . . . dinoflagellates
14. Flagellated cells are never found in the
- Chytridiomycota
 - Euglenophyta
 - Myxomycota
 - Oomycota
 - Zygomycota
15. Fucoxanthin is not found in the chloroplasts of division
- Chrysophyta, class Bacillariophyceae
 - Chrysophyta, class Chrysophyceae
 - Chrysophyta, class Xanthophyceae
 - Pyrrhophyta
16. Gametes are the only haploid cells in the
- Acrasiomycota
 - Ascomycota
 - Bacillariophyceae
 - Basidiomycota
 - Xanthophyceae
17. Gametophytes
- are diploid
 - are flagellated
 - come from gametes
 - produce gametes
 - produce meiospores
18. If you were to collect the mycelium of a member of the Ascomycota, it would most likely be
- anucleate
 - aseptate
 - dikaryotic
 - diploid
 - haploid

19. If you were to collect the mycelium of a member of the Basidiomycota, it would most likely be
- anucleate
 - aseptate
 - dikaryotic
 - diploid
 - haploid
20. In diatoms, an **auxospore** forms from
- a large diatom cell
 - a meiospore
 - a non-flagellated asexual spore
 - the meiotic products of a zygote
 - the union of gametes
21. It is believed that eukaryotes acquired mitochondria only once in their evolution because
- all mitochondria carry out fermentative respiration
 - all mitochondria form from basal bodies
 - all mitochondria have similar genes and similar structures
 - all mitochondria have the same accessory pigments
 - all living eukaryotes have mitochondria
22. Members of the division _____ lack a cell wall.
- Acrasiomycota
 - Chrysophyta
 - Myxomycota
 - Pyrrhophyta
 - Zygomycota
23. *Penicillium notatum*, a member of the Fungi Imperfecti, is important because
- it is the cause of late blight of potatoes.
 - it is the source of carbon dioxide in breadmaking
 - it is the source of ethanol in beer and wine
 - it is the source of penicillin
 - it produces aflatoxin when growing on stored peanuts, beans, and grains
24. *Phytophthora infestans*, a member of the Oomycota, is important because
- it is the cause of late blight of potatoes.
 - it is the source of carbon dioxide in breadmaking
 - it is the source of ethanol in beer and wine
 - it is the source of penicillin
 - it produces aflatoxin when growing on stored peanuts, beans, and grains

25. Some members of the division _____ commonly have silica in their cell walls.
- Chrysophyta
 - Euglenophyta
 - Myxomycota
 - Pyrrhophyta
 - Zygomycota
26. Sporophytes
- always produce gametes
 - are diploid
 - are haploid
 - are never multicellular
 - come from meiospores
27. The “red tide” is caused by members of the division
- Chrysophyta
 - Chytridiomycota
 - Cyanobacteria
 - Euglenophyta
 - Pyrrhophyta
28. The asexual spores of the Oomycota
- are called zygospores
 - are flagellated
 - are formed by meiosis
 - come from gametangia
 - come from meiosporangia
29. The asexual spores of the Zygomycota
- are called zygospores
 - are formed by meiosis
 - are produced in sac-like sporangia at the ends of hyphae
 - come from ascogonia
 - come from conidia
30. The Bacillariophyceae and Xanthophyceae are both placed in the Chrysophyta because
- they both consist of multicellular organisms only
 - they both have brown plastids
 - they both have chitin cell walls
 - they both have dominant haploid generations
 - they both produce antheridia and oogonia on different filaments
31. The budding of yeast is equivalent to
- formation of conidia
 - formation of zygospores
 - fusion of non-flagellated gametes
 - plasmogamy
 - swarming of myxamoebae

32. The cell walls of cyanobacteria consist of
- cellulose
 - nothing (they have no cell walls)
 - paramylon
 - peptidoglycan
 - silica
33. The cyanobacteria
- are also called blue-red algae
 - are autotrophic
 - can fix atmospheric helium
 - contain only unicellular forms
 - live only in highly polluted lakes
34. The diploid cells in Xanthophyceae are called
- ascospores
 - dikaryotic
 - hyphae
 - zoospores
 - zygotes
35. The filaments that form a mycelium are called
- conidiophores
 - dikaryon
 - hyalines
 - hydroids
 - hyphae
36. The five kingdoms described by Margulis and used in many textbooks are
- Animalia, Monera, Fungi, Plantae, Protista
 - Cyanobacteria, Protista, Animalia, Plantae, Monera
 - Fungi, Archaeobacteria, Animalia, Protista, Monera
 - monasteries, proctologists, animists, funnybones, and planks
 - Protozoa, Plantae, Fungi, Algae, Animalia
37. The Fungi Imperfecti consist
- mainly of Acrasiomycota
 - mainly of Basidiomycota
 - mainly of Myxomycota
 - mainly of Zygomycota
 - of fungi for which the sexual cycle is unknown or poorly known

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 most probable adaptive value of the dikaryotic condition is that
- it forces the formation of a diploid sporophyte
 - it mimics some of the genetic consequences of diploidy
 - it promotes asexual reproduction
 - the two nuclei in each cell are genetically identical
 - there is a spare nucleus in every cell in case the main nucleus is eaten
40. 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 by the fusion of many separate cells
41. The Myxomycota receive nutrition by
- absorbing food from decaying vegetation
 - hanging around college cafeterias
 - ingesting bacteria and other small organisms
 - parasitism
 - photosynthesis
42. The name Ulvaceae refers to a _____ and the name Heterobasidiomycetes refers to a _____.
- class . . . division
 - division . . . class
 - division . . . family
 - family . . . class
 - order . . . genus
43. The structure of compacted hyphae in the Ascomycota that bears the reproductive parts is called the
- ascocarp
 - ascogonium
 - basidiocarp
 - basidiothecium
 - perigynium

44. The structure of compacted hyphae in the Basidiomycota that bears the reproductive parts is called the
- ascocarp
 - ascogonium
 - basidiocarp
 - cleistothecium
 - perigynium
45. The zygotes 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
46. Three divisions of heterotrophic organisms that have chitin cell walls are
- Acrasiomycota, Myxomycota, and Oomycota
 - Ascomycota, Zygomycota, and Myxomycota
 - Basidiomycota, Chytridiomycota, and Zygomycota
 - Cyanobacteria, Basidiomycota, and Chytridiomycota
 - Zygomycota, Ascomycota, and Oomycota
47. When you eat a common pizza mushroom (*Agaricus brunnescens*), you are eating
- a basidiocarp
 - a cleistothecium
 - a mass of ascospores
 - a member of the kingdom Protista
 - diploid mycelium
48. Which one of these does not have chlorophyll a?
- Bacillariophyceae
 - Euglenophyta
 - Pyrrhophyta
 - Xanthophyceae
 - Zygomycota
49. You are taking a lab exam. The dish contains *Vaucheria* of the Xanthophyceae, 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 *Peziza*?” Although you remember that *Peziza* is in the Ascomycota, the illuminator on the scope is burned out. Quick! The most likely answer is
- a. ascospore
 - b. gametangium
 - c. gamete
 - d. zoospore
 - e. zygote