

BOT 125 - Plant Morphology
Winter 1994, 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 = TTh 1-4, sect. 2 = TTh 4-7, sect. 3 = TTh 7-10). 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. Monera
 - 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 Zygomycota

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

6. A similarity between the Rhodophyta and Phaeophyta is that virtually all members of both groups
 - a. are unicellular
 - b. have free-living meiospore-producing sporophytes
 - c. have green plastids
 - d. have silica cell walls
 - e. have two flagella

7. According to the endosymbiosis theory,
 - a. Ascomycota have the same chloroplasts as cyanobacteria
 - b. mitochondria and chloroplasts of eukaryotic cells originated from symbiotic prokaryotic organisms
 - c. naked, circular DNA and bacterial-type ribosomes of chloroplasts and mitochondria show that prokaryotes evolved from eukaryotes
 - d. the nucleus of eukaryotic cells was originally bacterial in origin
 - e. the original eukaryotic cells had no plasma membrane

8. Agar comes from _____ and is used for _____.
 - a. Chrysophyta . . . solubilizing paints
 - b. Phaeophyta . . . food products
 - c. Phaeophyta . . . preventing aflatoxin in peanuts
 - d. Rhodophyta . . . supporting growth media for culturing microorganisms
 - e. Rhodophyta . . . stabilizing the foam in cola beverages

9. **All** eukaryotes have
 - a. cell walls
 - b. chloroplasts
 - c. flagella
 - d. mitochondria
 - e. nuclei

10. An ascus characteristically produces
 - a. 32 meiospores
 - b. eight asexual spores
 - c. eight meiospores
 - d. four gametes
 - e. hundreds of asexual spores

11. Asexual reproduction
 - a. in the Basidiomycota is mostly restricted to the class Homobasidiomycetes
 - b. in the Ascomycota occurs by means of flagellated zoospores
 - c. in the Rhodophyta occurs by means of conidiospores
 - d. is more common in the Ascomycota than in the Basidiomycota
 - e. is unknown in the Oomycota

12. Diatomaceous earth is composed mainly of the _____ of _____.
- cell walls . . . Bacillariophyceae
 - cell walls . . . Pyrrophyta
 - cell walls . . . Xanthophyceae
 - crushed remains . . . swimming pools
 - flagella . . . Chrysophyta
13. Ethanol in beer is produced by the action of
- Agaricus brunnescens*
 - Aspergillus flavus*
 - Penicillium notatum*
 - Phytophthora infestans*
 - Saccharomyces cerevisiae*
14. Flagellated cells are never found in the
- Chytridiomycota
 - Euglenophyta
 - Myxomycota
 - Oomycota
 - Zygomycota
15. Gametes are the only haploid cells in the
- Acrasiomycota
 - Ascomycota
 - Bacillariophyceae
 - Basidiomycota
 - Xanthophyceae
16. Gametophytes
- are always green and heart-shaped
 - are diploid
 - come from gametes
 - produce gametes
 - produce meiospores
17. If you were to collect the mycelium of a member of the Basidiomycota, it would most likely be
- aseptate
 - coenocytic
 - dikaryotic
 - diploid
 - haploid

18. In *Ectocarpus*, meiospores
- are diploid
 - are produced in archegonia
 - develop into filamentous multicellular gametophytes
 - develop into large multicellular sporophytes
 - divide once to become gametes
19. In diatoms, an **auxospore** gives rise to
- a large diatom cell
 - a meiospore
 - a non-flagellated asexual spore
 - the union of gametes
 - the union of zoospores
20. In the Rhodophyta, tetrasporophytes
- come from tetraspores
 - come from zygotes
 - produce carpospores by meiosis
 - produce gametes by mitosis
 - produce tetraspores by meiosis
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
 - Ascomycota
 - Chrysophyta
 - Euglenophyta
 - Pyrrhophyta
23. Organisms of the division Rhodophyta
- are never multicellular gametophytes
 - have chlorophyll b and β -carotene
 - have non-flagellated sperm cells
 - have no cell walls
 - transport food in the form of mannitol
24. Paramylon is a food storage substance in the division
- Ascomycota
 - Chrysophyta
 - Euglenophyta
 - Phaeophyta
 - Pyrrhophyta

25. Some members of the division _____ commonly have silica in their cell walls.
- Ascomycota
 - Chrysophyta
 - Euglenophyta
 - Myxomycota
 - Phaeophyta
26. The “red tide” is caused by members of the division
- Chrysophyta
 - Chytridiomycota
 - Euglenophyta
 - Pyrrhophyta
 - Rhodophyta
27. The asexual spores of the Zygomycota
- are called conidia
 - are called zygospores
 - are formed by meiosis
 - are produced in sac-like sporangia at the ends of hyphae
 - come from zoosporangia
28. The Bacillariophyceae and Xanthophyceae are both placed in the Chrysophyta because they both
- consist of unicellular organisms only
 - have a diploid-dominant life cycle
 - have brown plastids
 - have peptidoglycan cell walls
 - produce antheridia and oogonia on different filaments
29. The budding of yeast is equivalent to
- formation of basidiospores
 - formation of conidia
 - fusion of non-flagellated gametes
 - karyogamy
 - swarming of myxamoebae
30. The cell walls of cyanobacteria consist of
- cellulose
 - nothing (they have no cell walls)
 - paramylon
 - peptidoglycan
 - silica

31. The cyanobacteria
 - a. are also called blue-green algae
 - b. are heterotrophic
 - c. can fix atmospheric oxygen
 - d. contain only unicellular 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 Phaeophyta
 - a. consists of organisms that play an important ecological role in the rocky intertidal zone.
 - b. consists of organisms with silica cell walls
 - c. contains more than 500,000 species
 - d. contains no filamentous forms
 - 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 seldom occurs
 - 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 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 by the fusion of many separate cells
40. The Myxomycota receive nutrition by
- absorbing food from decaying vegetation
 - hanging around college cafeterias
 - ingesting bacteria and other small organisms
 - parasitism
 - photosynthesis
41. The name Floridiaceae refers to a(n) _____ and the name Chrysophyceae refers to a(n) _____.
- class . . . order
 - division . . . class
 - division . . . family
 - family . . . class
 - order . . . genus
42. The structure in rockweeds such as *Fucus* that contains the gametangia is called the
- conceptacle
 - cystocarp
 - gametangiophore
 - paraphysis
 - perithecium
43. The structure of compacted hyphae in the Ascomycota that bears the reproductive parts is called the
- ascocarp
 - ascogonium
 - basidiocarp
 - basidiothecium
 - perigynium

44. 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
45. When you eat a common pizza mushroom (*Agaricus brunnescens*), you are eating
- a basidiocarp
 - a mass of zygospores
 - a member of the kingdom Monera
 - an apothecium
 - diploid mycelium
46. Which one of these does not have chlorophyll c?
- Bacillariophyceae
 - Phaeophyta
 - Pyrrhophyta
 - Xanthophyceae
 - Zygomycota
47. You are collecting unicellular and multicellular algae from a freshwater spring in Arkansas. One group that you are probably **not** collecting is
- Bacillariophyceae
 - Pyrrhophyta
 - Xanthophyceae
 - Phaeophyta
 - Rhodophyta
48. You are collecting unicellular and multicellular algae in the tidepools near Monterey. One group that you are probably **not** collecting is
- Bacillariophyceae
 - Pyrrhophyta
 - Euglenophyta
 - Phaeophyta
 - Rhodophyta
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 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