

BOT 125 - Plant Morphology

Winter 1998, 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 in the box marked "Hour" (sect. 1 = TTh 1-4, sect. 2 = MW 12-3). **Scantrons without lab sections will have one point deducted from the total.**
4. Check this test to make sure it has all pages, 1-4.
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.***

-
-
- | | |
|---|--|
| <ol style="list-style-type: none">1. _____ is a Family and _____ is a Class.<ol style="list-style-type: none">a. Alismataceae . . . Ginkgophytab. Brassicaceae . . . Magnolialesc. Chrysophyceae . . . Heterobasidiomycetesd. Magnoliopsida . . . Zygnematalese. <i>Penicillium</i> . . . <i>Phytophthora</i>2. _____ ordinarily have one long, active flagellum for swimming<ol style="list-style-type: none">a. Acrasiomycotab. Basidiomycotac. Euglenophytad. Pyrrhophytae. Zygomycota3. _____ ordinarily have one long, active flagellum for swimming<ol style="list-style-type: none">a. Acrasiomycotab. Basidiomycotac. Euglenophytad. Pyrrhophytae. Zygomycota4. A basidium is an example of a(n)<ol style="list-style-type: none">a. meiosporangiumb. ascusc. asexual sporangiumd. gametee. oospore5. Although almost all Fungi Imperfecti belong in the _____, and most of the rest in the _____, mycologists retain the group because of its historical importance.<ol style="list-style-type: none">a. Ascomycota . . . Basidiomycotab. Basidiomycota . . . Acrasiomycotac. Basidiomycota . . . Zygomycotad. Pyrrhophyta . . . Acrasiomycotae. Zygomycota . . . Ascomycota | <ol style="list-style-type: none">6. An auxospore, an oospore, and a zygospore walk into a bar. The bartender says, "You'll have to leave. We don't serve _____ here."<ol style="list-style-type: none">a. asexual sporesb. gametesc. meiosporesd. zoosporese. zygotes7. An organism has aseptate diploid filaments. If it forms Oospores and is not photosynthetic, its cell walls are probably made of<ol style="list-style-type: none">a. celluloseb. chitinc. nothing—it has no cell wallsd. peptidoglycane. silica8. An organism has silica in its cell walls and brown plastids. It is most likely a member of the division<ol style="list-style-type: none">a. Chrysophytab. Euglenophytac. Oomycotad. Phaeophytae. Rhodophyta9. An organism produces meiospores and asexual spores. The meiospores are _____ and the asexual spores are _____.<ol style="list-style-type: none">a. diploid . . . diploidb. diploid . . . haploidc. haploid . . . diploidd. haploid . . . haploide. their ploidy levels cannot be determined with the information given10. Anisogamous gametes are<ol style="list-style-type: none">a. always flagellatedb. diploidc. egg and spermd. produced only by Oomycotae. the same size |
|---|--|

11. Because _____, the Ascomycota and Basidiomycota have a dikaryotic phase.
- karyogamy is not immediately followed by plasmogamy
 - meiosis is not immediately followed by syngamy
 - neither has a haploid phase
 - plasmogamy is not immediately followed by karyogamy
 - they are both aseptate
12. Because their eyespots are _____, euglenas are insensitive to _____ light.
- black . . . no
 - blue . . . red
 - colorless . . . white
 - red . . . blue
 - red . . . red
13. Botanists learn the ploidy level of structures by
- counting their chromosomes
 - looking them up in a book
 - looking to see if they are drawn in red or green
 - sequencing their DNA
 - understanding their place in the sexual life cycle
14. Cyanobacteria that are symbiotic in plants provide _____ and get _____ in return
- fixed nitrogen . . . light, protection, and nutrients
 - fixed nitrogen . . . nothing
 - food . . . light
 - food . . . nothing
 - nothing . . . light, protection, and nutrients
15. Egg cells of the Oomycota
- are diploid
 - are produced by meiosis
 - are produced by mitosis
 - are the end products of syngamy
 - are also called oospores
16. False homology is called _____.
- homoplasy
 - homospory
 - monophyletic
 - parallel evolution
 - paraphyletic
17. Gametes are the only haploid cells in the
- Ascomycota
 - Chrysophyta: Bacillariophyceae
 - Chytridiomycota
 - Rhodophyta
 - Zygomycota
18. Gametophytes of some land plants are non-photosynthetic and do not live on stored food; instead they
- are parasitic on green algae (Chlorophyta)
 - are parasitic on mycorrhizae
 - are parasitic on soil animals
 - have a mutualistic association with cyanobacteria
 - ingest bacteria
19. Gametophytes produce
- gametes by meiosis
 - gametes by mitosis
 - meiocytes by syngamy
 - meiospores by meiosis
 - meiospores by mitosis
20. If you tell the pizza guy you'd like plenty of *Agaricus brunnescens* on your pizza, you would expect to get
- apothecia
 - ascocarps
 - basidiocarps
 - conidia
 - cystocarps
21. If you were to find a fungus growing in the soil, it had no asexual reproductive structures, and all of its cells were dikaryotic, it would most likely be a member of the division
- Acrasiomycota
 - Ascomycota
 - Basidiomycota
 - Oomycota
 - Zygomycota
22. In alternation of generations, sporophytes produce
- gametes by meiosis
 - gametes by mitosis
 - meiocytes by syngamy
 - meiospores by meiosis
 - meiospores by mitosis
23. In organisms with alternation of generations, the meiosporangia, gametangia, and asexual sporangia may look alike. This is because
- they are formed by the same genetic and developmental pathways
 - they are formed on the same sporophytes
 - they have the same function
 - they are all haploid
 - they are all multicellular
24. In the division Euglenophyta, food is stored in the _____ in the form of a carbohydrate called _____.
- chloroplast . . . chrysolaminarin
 - chloroplast . . . starch
 - cytoplasm . . . lipid
 - cytoplasm . . . paramylon
 - pellicle . . . glycogen
25. In the organisms of today (*not* the original organisms that evolved it), the endosymbiosis of chloroplasts and mitochondria best fits the model of
- commensalism
 - meiosis
 - mutualism
 - parasitism
 - predation

26. In the Rhodophyta, tetrasporophytes
- come from carpospores
 - come from zygotes
 - produce carpospores by meiosis
 - produce gametes by meiosis
 - produce tetraspores by mitosis
27. Meiocytes are always _____ and meiospores are always _____.
- diploid . . . diploid
 - diploid . . . haploid
 - haploid . . . diploid
 - haploid . . . haploid
 - their ploidy levels depend on the structures that produced them
28. Most of the fungi that take part in the lichen symbiosis are members of the division _____, and most of the algae are in the division _____.
- Ascomycota . . . Chlorophyta
 - Ascomycota . . . Cyanophyta
 - Basidiomycota . . . Chlorophyta
 - Basidiomycota . . . Cyanophyta
 - Rhodophyta . . . Zygomycota
29. *Penicillium* produces substances that kill bacteria so that
- humans will have a ready source of antibiotic to fight infections.
 - it can easily contaminate petri dishes by destroying the organisms that already live there.
 - it can more easily grow on oranges, which are prokaryotic like bacteria.
 - it will kill bacteria that would otherwise compete for its food.
 - it will reproduce asexually.
30. Perithecia, apothecia, and cleistothecia are all found in the
- Ascomycota
 - Basidiomycota
 - Myxomycota
 - Oomycota
 - Zygomycota
31. *Phytophthora infestans* (_____) is an example of _____
- black mildew . . . a facultative human pathogen
 - brewer's yeast . . . an organism that has mitochondria, but doesn't use them.
 - common pizza mushroom . . . an organism that is reproduced asexually by people, from a group of organisms that reproduces only sexually in the wild.
 - late blight of potato . . . asexual reproduction causing more infection than sexual reproduction
 - peanut mold . . . an organism that produces a dangerous toxin in stored foods
32. Tetraspores come from _____ and give rise to _____.
- carposporophytes . . . gametophytes
 - carposporophytes . . . tetrasporophytes
 - gametes . . . carposporophytes
 - tetrasporophytes . . . carposporophytes
 - tetrasporophytes . . . gametophytes
33. The "slug" of the Acrasiomycota
- is an aggregation of many separate cells
 - is a single multinucleate cell
 - can eat organisms as large as a small puppy
 - is involved in sexual reproduction
 - turns into a meiosporangium
34. The best evidence for the amount of evolutionary kinship between any two organisms is
- how primitive or advanced they are
 - the homologies they share
 - their place in the classification in the book
 - their place on a cladogram
 - their similar fossils
35. The Chytridiomycota are similar to the fungi because _____ and different from them because _____.
- they are both absorptive . . . the fungi have silica cell walls
 - they are both photosynthetic . . . the fungi are terrestrial
 - they are both septate . . . the fungi have flagellated cells
 - they both have chitin cell walls . . . the fungi have no flagellated cells
 - they both lack cell walls . . . the fungi are never parasitic
36. The filaments that form a mycelium are called
- coenocytes
 - dikaryons
 - heterokonts
 - hyphae
 - myconemata
37. The fossil cell walls of Bacillariophyceae form _____ which is used as a _____ and an abrasive.
- agar . . . food additive
 - alginic acid . . . detergent
 - diatomaceous earth . . . filtering agent
 - limestone . . . building material
 - muramic acid . . . fish poison
38. The fungi are more closely related to the
- animals
 - cyanobacteria
 - metabacteria
 - plants
 - primitive eukaryotes without mitochondria
39. The gametophyte of a brown alga with isomorphic alternation of generations is parenchymatous. The sporophyte will always be
- diploid-dominant
 - filamentous
 - haploid
 - larger
 - parenchymatous

40. The Kingdom Protista is paraphyletic because
- it includes *all* the descendants of a common ancestor.
 - it is a clade.
 - it is not prokaryotic
 - it lacks a common ancestor.
 - its common ancestor is also the ancestor of plants, animals, and fungi.
41. The Linnaean Hierarchy
- always shows evolutionary relationships.
 - consists of Species, Genus, Family, Order, Class, Phylum, and Kingdom.
 - has no connection with scientific names
 - was invented by Carl Linnaeus.
 - was never intended to be a natural classification.
42. The plasmodium of Myxomycota feeds by
- breaking down decaying vegetation
 - dumpster-diving
 - ingesting bacteria
 - parasitizing animals
 - photosynthesis
43. Three-dimensional tissue made of tightly compacted filaments is called
- plectenchyma
 - parenchyma
 - mycelium
 - sporophyte
 - conceptacle
44. We know that the eukaryotes are monophyletic because they all have
- a cell wall
 - alternation of generations
 - chloroplasts
 - nuclei
 - the same genetic code
45. When they form the asexual sporangium, the cells of Acrasiomycota have _____ cell walls.
- cellulose
 - chitin
 - no
 - peptidoglycan
 - silica
46. Which of the following statements is clearly false?
- All* organisms that live by fermentation split off from the eukaryotes before they acquired mitochondria.
 - Chloroplasts were obtained independently by several different groups of eukaryotes.
 - In land plants, the gene for one subunit of RuBisCO is in the chloroplast, and the gene for the other subunit is in the nucleus.
 - Mitochondria contain DNA.
 - Some chloroplasts are very similar to free-living cyanobacteria.
47. Which statement about the Pyrrophyta is false?
- Some cause the red tide
 - Some eat other dinoflagellates
 - Some have brown plastids
 - Some have chitin cell walls
 - Some poison and eat fish
48. You are eating Cheezy California Custard Cups partially-thawed nutrition-free artificially yellow-flavored milk-like dessert (“It’s the Seaweed™”). You would not be surprised to find that it owes its creamy texture to _____ obtained from _____.
- agar . . . Phaeophyta
 - alginic acid . . . Rhodophyta
 - carrageenan . . . Rhodophyta
 - floridean starch . . . Rhodophyta
 - mannitol . . . Phaeophyta
49. You are taking a lab practical exam. The card says “What is the ploidy level of these meiocytes of *Lilium* of the Anthophyta?” You were certain that Anthophyta weren’t supposed to be on the exam. In fact, Dr. Clark never even lectured about them. And now that you think about it, there wasn’t supposed to be a practical exam at all. But you have to put down an answer anyway. The correct answer is
- dikaryotic
 - diploid
 - gamete
 - haploid
 - zygote
50. Zoospores
- always lack flagella
 - always have flagella
 - are always diploid
 - are always haploid
 - are always asexual