

BOT 125 - Plant Morphology

Winter 2001, Midterm

1. Read these directions before you begin.
2. Write your name on your Scantron sheet and make sure it is on the 8½×11 exam guide (tests without names will not be graded).
3. Write the number of your lab section on the Scantron sheet in the box marked "Hour" (sect. 1 = MW 12-3 [Kim], sect. 2 = MW 3-6 [Katie]). 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 both the Scantron and the 8½×11 exam guide on the front table. Please keep this sheet.

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1. _____ is a Class and _____ is a Phylum.
 - a. Alismataceae ... Ginkgophyta
 - b. Brassicaceae ... Magnoliales
 - c. Chrysophyceae ... Heterobasidiomycetes
 - d. Magnoliopsida ... Zygomycota
 - e. *Penicillium* ... *Phytophthora*
 2. _____ is important in the preparation of beer and bread.
 - a. *Agaricus brunnescens*
 - b. *Aspergillus flavus*
 - c. *Penicillium notatum*
 - d. *Phytophthora infestans*
 - e. *Saccharomyces cerevisiae*
 3. _____ ordinarily have two flagella located in grooves on the cell wall
 - a. Dictyosteliomycota
 - b. Dinophyta
 - c. Euglenophyta
 - d. Rhodophyta
 - e. Zygomycota
 4. _____ are **always** haploid.
 - a. Gametophytes
 - b. Meiocytes
 - c. Meiosporangia
 - d. Sporophytes
 - e. Zygotes
 5. "Brown" chloroplasts
 - a. contain phycobilins
 - b. have chlorophylls a, b, c, d, and e
 - c. lack carotenoids
 - d. lack chlorophyll
 - e. ordinarily have fucoxanthin as an accessory pigment
 6. A basidium ordinarily gives rise to
 - a. 4 basidiospores
 - b. 64 aplanospores
 - c. 8 meiospores
 - d. hundreds of clonal spores
 - e. non-flagellated sperm cells
 7. A unicellular diploid organism has silica in its cell walls and brown plastids. It is most likely a member of the division
 - a. Bacillariophyta
 - b. Euglenophyta
 - c. Oomycota
 - d. Phaeophyta
 - e. Rhodophyta
 8. An ascus is an example of a(n)
 - a. clonal sporangium
 - b. gamete
 - c. meiosporangium
 - d. oospore
 - e. zygospore
 9. An auxospore, an oospore, and a zygospore walk into a bar. The bartender says, "You'll have to leave. We don't serve _____ here."
 - a. clonal spores
 - b. gametes
 - c. meiospores
 - d. zoospores
 - e. zygotes
 10. An organism has aseptate haploid filaments. If it forms zygospores and is not photosynthetic, its cell walls are probably made of
 - a. cellulose
 - b. chitin
 - c. nothing—it has no cell walls
 - d. peptidoglycan
 - e. silica
 11. An organism produces clonal spores and meiospores. The clonal spores are _____ and the meiospores are _____.
 - a. diploid ... diploid
 - b. diploid ... haploid
 - c. haploid ... diploid
 - d. haploid ... haploid
 - e. their ploidy levels cannot be determined with the information given

12. Ascogenous hyphae come from the _____ and form the _____.
- ascogonium ... ascocarp
 - ascogonium ... zygospore
 - ascospores ... ascocarp
 - ascospores ... oospores
 - ascus ... zygote
13. Because _____, the Basidiomycota have a dikaryotic phase.
- karyokinesis is not immediately followed by cytokinesis
 - plasmogamy is not immediately followed by karyogamy
 - syngamy is not immediately followed by meiosis
 - they have a diploid dominant life cycle
 - they have no sexual reproduction
14. Biologists estimate the amount of evolutionary kinship between any two organisms by looking at
- how primitive or advanced they are
 - the homologies they share
 - their fossils
 - their place in the classification in the book
 - their place on a cladogram
15. Botanists learn the ploidy level of cells, organs, and organisms 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
16. Carpospores come from _____ and give rise to _____.
- carposporophytes ... gametophytes
 - carposporophytes ... tetrasporophytes
 - gametes ... carposporophytes
 - tetrasporophytes ... carposporophytes
 - tetrasporophytes ... gametophytes
17. Diatomaceous earth, formed of the fossil cell walls of _____, is used as a(n) _____ and a filtering agent.
- Rhodophyta ... detergent
 - Bacillariophyta ... food additive
 - Bacillariophyta ... abrasive
 - Rhodophyta ... building material
 - Dinophyta ... fish poison
18. Euglenas have _____ eyespots; thus, they can't see _____.
- blue ... red
 - green ... yellow
 - red ... blue
 - red ... red
 - transparent ... anything
19. Flagellated cells are never found in the
- Chytridiomycota
 - Euglenophyta
 - Phaeophyta
 - Dinophyta
 - Rhodophyta
20. Food is stored in Rhodophyta in the form of
- floridean starch
 - glycogen
 - laminarin
 - mannitol
 - paramylon
21. Food is transported in the phloem of kelps (Phaeophyta) in the form of
- glycogen
 - laminarin
 - mannitol
 - starch
 - sucrose
22. Gametes are the only haploid cells in the
- Ascomycota
 - Basidiomycota
 - Chytridiomycota
 - Oomycota
 - Zygomycota
23. Gametophytes produce
- gametes by meiosis
 - gametes by mitosis
 - meiocytes by syngamy
 - meiospores by meiosis
 - meiospores by mitosis
24. If you were to find a fungus growing in the soil, it had no clonal spores, and all of the cells of its septate filaments were dikaryotic, it would most likely be a member of the division
- Ascomycota
 - Basidiomycota
 - Myxomycota
 - Oomycota
 - Zygomycota
25. In marine coastal waters of temperate areas such as California, the ecologically dominant seaweeds are members of the division
- Euglenophyta
 - Myxomycota
 - Phaeophyta
 - Rhodophyta
 - Zygomycota

26. In rockweeds (Phaeophyta) such as *Fucus*, the receptacles (swollen branch tips) often contain chambers called
- antheridia
 - intercalaries
 - oogonia
 - paraphyses
 - conceptacles
27. In some of the organisms you have studied so far, the gametangia, meiosporangia, and clonal sporangia are similar in appearance. This is most likely because
- the same structure can provide all three functions.
 - the sexual cycle is not known.
 - they are all unicellular.
 - they are formed through the same developmental pathways as a result of the same genetic program.
 - they form on the same sporophyte.
28. In the Myxomycota, the plasmodium is
- a cluster of haploid cells
 - a single large cell with many diploid nuclei
 - a single large cell with many haploid nuclei
 - a clonal sporangium
 - made of plectenchyma
29. *Penicillium* produces antibiotics in order to
- help humans fight infections.
 - contaminate petri dishes by destroying the organisms that already live there.
 - grow more easily on oranges, which are prokaryotic like bacteria.
 - kill bacteria that would otherwise compete for its food.
 - reproduce clonally.
30. Perithecia, apothecia, and cleistothecia are all examples of _____, and are found in the _____.
- ascomata ... Ascomycota
 basidiomata ... Basidiomycota
 myxamoebae ... Myxomycota
 oospores ... Oomycota
 zygospores ... Zygomycota
31. *Phytophthora infestans* causes _____ as a consequence of increased _____.
- aflatoxin ... salinity
 - eutrophication ... nitrogen fixation
 - late blight of potato ... clonal reproduction
 - moldy oranges ... sexual reproduction
 - the red tide ... sexual reproduction
32. Plectenchyma consists of
- diploid mycelium
 - flat sheets of cells, one cell thick
 - masses of clonal sporangia
 - three-dimensional tissue made of compacted filaments
 - three-dimensional tissue that results from cells dividing in three dimensions
33. The _____ are primarily marine.
- Basidiomycota
 - Euglenophyta
 - Myxomycota
 - Phaeophyta
 - Zygomycota
34. The _____ are a group of mainly Ascomycota, with a few Basidiomycota, that have traditionally been kept together because their sexual cycles were not known.
- Aplanomycota
 - Deuterium oxide
 - Fungi Imperfecti
 - Oomycota
 - Zygomycota
35. The “red tide” is caused by members of the division
- Chrysophyta
 - Chytridiomycota
 - Dinophyta
 - Euglenophyta
 - Oomycota
36. The “slug” of the Dictyosteliomycota
- can eat organisms as large as a small puppy
 - is a single multinucleate cell
 - is an aggregation of many separate cells
 - is involved in sexual reproduction
 - turns into a meiosporangium
37. The clonal spores of the Ascomycota
- are called conidia
 - are called zygospores
 - are diploid
 - are produced in sac-like sporangia at the ends of hyphae
 - have two flagella each
38. The Dictyosteliomycota are like the _____ because they both ingest bacteria, and they are like the _____ because they both have cellulose cell walls.
- Ascomycota ... Zygomycota
 - Chytridiomycota ... Myxomycota
 - Oomycota ... Ascomycota
 - Myxomycota ... Oomycota
 - Oomycota ... Zygomycota

39. The filaments that form a mycelium are called
- coenocytes
 - dikaryons
 - heterokonts
 - hyphae
 - myconemata
40. The Linnaean hierarchy, in order from the smallest, least inclusive level to the largest, most inclusive level, is
- Kingdom, Phylum, Class, Order, Family, Genus, Species
 - Kingdom, Division, Family, Order, Class, Genus, Species
 - Specie, Genius, Famished, Odor, Clasp, Derision, Kingdome
 - Species, Genus, Class, Order, Family, Phylum, Kingdom
 - Species, Genus, Family, Order, Class, Phylum, Kingdom
41. The Oomycota were once placed in the kingdom Fungi. They are different from fungi because
- their life cycle is haploid dominant
 - they are never parasitic
 - they are septate
 - they have heterokont flagella
 - they have chitin cell walls
42. The plasmodium of Myxomycota feeds by
- breaking down and absorbing decaying vegetation
 - dumpster-diving
 - ingesting bacteria
 - parasitizing animals
 - photosynthesis
43. The primary means of reproduction in Dictyosteliomycota is by
- formation of clonal spores
 - formation of gametes
 - formation of meiospores
 - mitosis of the myxamoebae
 - splitting of the "slug"
44. The theory that the microtubule system, _____, and _____ of eukaryotic cells were derived from free-living prokaryotes is called the _____ theory.
- chloroplasts ... mitochondria ... endosymbiosis
 - endoplasmic reticulum ... chromosomes ... endosymbiosis
 - nuclei ... mitochondria ... ectoparasitic
 - chloroplasts ... nuclei ... organellar insertion
 - cell walls ... plasma membranes ... relativity
45. We can distinguish homology from homoplasy because
- all homologies tell parts of the same story
 - all homologies look alike
 - all homoplasies tell parts of the same story
 - all homoplasies look alike
 - homoplasy exists independent of human perception
46. We know that the eukaryotes are monophyletic because they all have
- a cell wall
 - alternation of generations
 - chloroplasts
 - nuclei
 - the same genetic code
47. When you are eating *Agaricus brunnescens*, the common pizza mushroom, you are eating
- a basidioma
 - diploid mycelium
 - haploid mycelium
 - parenchyma
 - zygospores
48. You are eating California Cheezy Cow Custard nutrition-free partially-frozen artificially brown-flavored milk-like dessert food product. You would not be surprised to find that it owes its creamy texture to _____ obtained from _____.
- carrageenan ... Rhodophyta
 - carrageenan ... Phaeophyta
 - chitin ... Rhodophyta
 - mannitol ... Phaeophyta
 - laminarin ... Rhodophyta
49. You are taking a lab exam. The card says "What is the ploidy level of these meiospores of *Equisetum* of the Sphenophyta?" You were certain that Sphenophyta weren't supposed to be on the exam. In fact, Dr. Clark never even lectured about them. 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 clonal