

MARCH, 2018

1 HOUR 30 MINUTES

ANSWER ALL QUESTIONS IN BOTH SECTIONS A AND B

## SECTION A

1. The most famous antibiotic is ...
    - a. Amoxycilin
    - b. Ampicillin
    - ☒ c. Penicillin
    - d. Tetracycline
  2. The antibiotic above is best obtained from....
    - a. *Aspergillus ochraceous*
    - ☒ b. *Penicillium notatum*
    - c. *Penicillium chrysogenum*
    - d. *Penicillium griseofulvum*
  3. Which of the following is not caused by a fungus?
    - a. Cigar-end rot of banana
    - b. Damping off
    - c. Mealy pod of cacao
    - d. Swollen shoot of cacao
  4. Which of the following is **not** a branching pattern of the hyphae?
    - a. Paired
    - b. Lateral
    - ☒ c. Subapical
    - d. Whorl
- Which of the following statement is **true**?
- a. The majority of lichens are homoiomerous
  - b. Lichens are able to tolerate extremes of temperature and moisture
  - c. The lichen partnership is one of a controlled parasitism of the phototroph

- ☒ Leaf  
c. Root  
d. Stem bark
7. Ectomycorrhizal fungi generally belong to.....  
a. Ascomycetes  
☒ b. Basidiomycetes  
c. Deuteromycetes  
d. Zygomycetes
8. Which of the following statements about four-celled spore is **true**?  
☒ a. Each cell is capable of germinating  
b. Median cells do not germinate  
c. Only one cell is capable of germinating  
d. Only the apical cell is capable of germinating
9. Spores produced by budding are often called.....  
a. Arthrospores  
☒ b. Blastospores  
c. Mitospores  
d. Soredia
10. Body ringworm is caused by?  
☒ a. An Ascomycete  
b. A Basidiomycete  
c. A Mastigomycota  
d. A Zygomycete
11. Which among the following mycotoxins is a Neurotoxin?  
☒ a. Aflatoxin  
b. Citrinin  
c. Ochratoxin  
d. Patulin
12. Which of the following statements is false?  
a. fungi require higher amounts of carbohydrates in the media than bacteria do  
b. Bacteria predominantly destroys proteins than fungi  
☒ c. bacteria are more efficient in degrading plant material than fungi  
d. There are more filamentous fungi than there are unicellular ones



13. Dimorphism refers to;
- Alternation of generation
  - The presence of both haploid and diploid thalli under different environmental conditions
  - ☒ When the soma can be filamentous or yeast-like depending on the environmental conditions
  - When the life cycle is diplobiontic
14. Select the **odd** among the following in terms of complexity:
- Ascomycota
  - Basidiomycota
  - Deuteromycota
  - ☒ Zygomycota
15. Centrioles are present in these fungi
- Ascomycota
  - Basidiomycota
  - ☒ Mastigomycota
  - Zygomycota
16. Which of the following stages in the Zygomycetes is diploid?
- Asexual spores
  - Hypha
  - Zygospangium
  - ☒ Zygote
17. Choose the **correct** statement:
- Fungi are autotrophic.
  - Most fungi are aquatic.
  - ☒ Most fungi are decomposers.
  - The optimum Ph for most species is about 3.5.
18. What do fungi and arthropods have in common?
- both groups are commonly coenocytic
  - the haploid state is dominant in both groups
  - both groups are predominantly saprophytic in nutrition
  - ☒ both groups use chitin for the construction of protective coat.
  - both groups have cell walls
19. If there were no mycorrhizae, which of the following would be **true**?
- there will be fewer infectious diseases
  - we wouldn't have antibiotics like penicillin
  - there would be no mushrooms for pizza
  - ☒ a lot of trees would not grow well
  - cheeses like blue cheese or Roquefort cannot exist

20. Coenocytic structure implies being:  
a. multicellular  
**(b) multinucleate**  
c. commensalistic  
d. saprophytic  
e. heterotrophic
21. Mycostasis refers to:  
**(a) Mycotoxicoses by the ascomycetes**  
b. Growth suppression imposed on rhizosphere fungi by the phylloplane flora  
c. the dormancy imposed on fungal spores by soil and sometimes leaf surface microflora  
d. Inhibition of growth by phytoalexins
22. A characteristic of fungal secondary metabolite is that:  
a. they are produced by potentially growing cells  
b. most are produced as families of related molecules  
c. each is produced by just one specific strain of fungus  
d. they play essential roles in spore formation
23. Most wine is made commercially with:  
a. a culture of *Saccharomyces cerevisiae*  
b. the natural fungal flora on the grape  
c. in inoculums from the previous fermentation  
d. A and B  
e. A, B, C
24. The most important fungi for commercial enzyme production are species of:  
a. *Agarics*  
b. *Aspergillus*  
c. *Neurospora*  
d. *Saccharomyces*
25. The chitin in the fungal cell wall is:  
a. a protein  
b. a glycoprotein  
c. a polysaccharide  
d. a lipopolysaccharide
26. It is essential to include in a growth medium for any fungus:  
a. an organic nitrogen source  
b. an organic sulphur source  
c. an organic phosphorus source  
d. an inorganic nitrogen

27. Which of the following statements is **not true**?
- All yeast reproduce by budding
  - Some yeast reproduce by fission
  - Fission is the main method of Asexual Reproduction in the Schizosaccharomycetales
  - yeast occur predominantly in the unicellular state
28. Fungal spores generally contain
- Diploid nuclei
  - Haploid nuclei
  - Haploid  $2n$  stage
  - Synkaryotic state
29. Which of the following statement is **not true**?
- Lichens exist farther north than any plant of the arctic region
  - The dominant lichen mycobiont is basidiomycetes
  - Most of the phototrophic organisms found in lichens also occur as free living species in nature
  - In the homoiomerous lichen, the algae are more or less evenly distributed throughout the thallus
30. Which of the following statement about lichens is **false**?
- Sexual reproductive structures of the lichens are always that of the fungal component
  - Any one species of the lichen have same algal and fungal component
  - The fungus appears to parasitize the algal cells but also lives saprophytically on the algal cells that die.
  - The lichenized zygomycetes are generally of the foliose type
31. The methods of plasmogamy in which the species produce morphologically differentiated uninucleate or multinucleate gametangia is referred to as
- Gametangial copulation
  - Gametangial contact
  - Planogametic copulation
  - Spermatization
32. Which of the following statement about Mycorrhiza is **false**?
- Increases the solubility of minerals
  - Improve the uptake of nutrients (NKP)
  - Protects the host roots against pathogens
  - Move carbohydrates from one plant to the other and produce plant hormones



- e. An infected root tip is covered by a mantle in the endomycorrhiza
33. Which of the following statements about Lomasomes is correct?
- a. A membranous layer on the cell wall
  - b. A membranous structure beneath the plasma membrane
  - c. It is involved in the cell wall formation
  - d. Present only in plants and fungi
34. Which is the **odd** among the following?
- a. Ascospores
  - b. Basidiospores
  - c. Sporangiospores
  - d. Zygosporangia
35. In fungi, when karyogamy does not immediately follow plasmogamy,.....
- a. sexual reproduction can occur in specialized structure
  - b. results in more genetic variation during sexual reproduction
  - c. allows fungi to reproduce asexually most of the time
  - d. creates dikaryotic cells
36. Why do biologists who study lichens sometimes refer to the symbiotic relationship between fungus and algae as "controlled parasitism"?
- a. together the fungi and alga may parasitize and kill other living organisms, such as plants
  - b. each contributes to the maintenance of the other
  - c. Fungal haustoria may kill algal cells, but at a pace slow enough not to destroy all the algae present.
  - d. Algal cells die at a faster rate than fungal cells
  - e. Fungal cells reproduce slower than algae, thus becoming enclosed and unable to grow.
37. Fungi have an advantage over other microbes in recycling organic matter. This is because..... Select the most appropriate among the following.
- a. They are capable of indefinite growth
  - b. They have the ability to withstand extremely low temperatures and there are few thermophilic ones as well
  - c. They break down organic compounds including cellulose, gums and waxes other microbes avoid
  - d. They prefer and survive better in acidic media than other microorganisms.
38. Structures formed by symbiotic fungi inside plant cells are:
- a. Appressoria
  - b. Haustoria
  - c. Hartig net

- d. Rhizomorph
39. The role of this spore is predominantly that of dispersal. This spore is....
- Ascospore
  - Chlamydospore
  - Conidia
  - Zygospore
40. Reproductive structures consisting of photosynthetic cell surrounded by fungal hyphae are called:
- Ascospores
  - Basidiospores
  - Conidiospores
  - Soredia
41. Which statement is **not true** of the fungal nutrition?
- Some are active predators
  - Some fungi form mutualistic association with other organisms
  - All fungi require mineral nutrition
  - Ca is essential in the nutrition of all fungi
42. Which of the following statements is **not true** of the fungi?
- A multicellular fungus has a body called mycelia
  - Hyphae are composed of individual mycelium
  - Many fungi tolerate highly hypertonic environments
  - They are anchored to their substratum by rhizoids
43. The condition described as  $n + n$  is said to be:
- Diplobiontic
  - Dikaryotic
  - Haplobiontic
  - Monokaryotic
44. Which of the following statements is **not true**?
- Conidium is sexual spore
  - Conidium is enclosed
  - Majority of deuteromycetes are either saprophytic or weak parasite
  - Zygospore is an asexual spore
45. The initial source of the psychedelic drug lysergic acid diethylamide was:
- Ascomycetes
  - Basidiomycetes



- c. Deuteromycetes
  - d. Zygomycetes
46. The fungus that almost collapse the French wine industry is
- a. *Phytophthora citricola*
  - b. *Plasmopara viticola*
  - c. *Sclerotium rolfsii*
  - d. *Phytophthora infestans*
47. Rhizoids may be connected by:
- a. Hyphal strand
  - b. Mycelial strands
  - c. Stolon
  - d. Stroma
48. Which is **not true** about adventitious septum?
- a. Associated with cell division
  - b. Changes in protoplasm concentration
  - c. Not perforated
  - d. Typically common with the lower fungi
49. Which of the following statements is **incorrect**?
- a. *Candida albicans* is yeast that causes candidiasis or thrush in humans
  - b. Candidiasis typically infects the mouth or vagina
  - c. *C. albicans* is part of the normal flora of the vagina and gastrointestinal tract.
  - d. Predisposition factors to candidiasis include obesity, alcoholism and the use of broad spectrum antibiotics and steroids
50. The spore whose ornamentation entails a network of raised ridges which are normally represented by lines in a plane figure is called:
- a. alveolate
  - b. reticulate
  - c. spiny
  - d. verrucose
51. The most predominant asexual spores formed by fungi are:
- a. Chlamydospores
  - b. Conidia
  - c. Sporangiospores
  - d. Zoospores
52. The initial structure that comes out from a germinating spore is called:
- a. Germ tube



- b. Hyphae
  - c. Infection peg
  - d. Mycelium
53. Woronin bodies are associated with the septum in:
- a. Ascomycetes and Deuteromycetes
  - b. Ascomycetes and Basidiomycetes
  - c. Basidiomycetes and Deuteromycetes
  - d. Zygomycetes and Deuteromycetes
54. Which are the imperfect fungi?
- a. Ascomycetes
  - b. Basidiomycetes
  - c. Deuteromycetes
  - d. Zygomycetes
55. In what way are fungi and protozoans similar?
- a. Both have cell walls
  - b. Both are filamentous
  - c. Both can be pathogenic
  - d. Both are septated
56. In what way do mushrooms and moulds differ?
- a. In the size of their structures
  - b. Moulds are filamentous fungi, mushrooms are not
  - c. Mushrooms have hyphae, moulds do not
  - d. Mushrooms are filamentous fungi, moulds are not
57. Fungal spores:
- a. May be dispersed by air current
  - b. Can be sexual or asexual
  - c. Can give rise to mycelium upon germination
  - d. All of the above
58. Fungi are the only organisms with a..... stage in the life cycles.
- a. Dikaryotic
  - b. Diploid
  - c. Haploid
  - d. Polyploidy
59. The slime mould and water mould are strictly:
- a. Ascomycetes
  - b. Basidiomycetes
  - c. Not fungi

- ☒ a. Asexual spore  
b. Pletenchyma  
c. Prosenchyma  
d. Sexual spore
74. In the mushrooms, puffballs the term basidiocarp refers to.....  
☒ a. Fruiting body  
b. The nonseptate hyphae  
c. The part of the soma above the soil  
d. The septate hyphae
75. What does the slime mould and fungi have in common?  
a. Both exist as diploid organisms  
☒ b. Both are filamentous  
c. Both are prokaryotic  
d. Both produce spores
76. In most Ascomycetes, asexual spores are produced at the ends of specialized hyphae called:  
a. Antheridia  
b. Ascocarps  
c. Ascogonia  
☒ d. Conidiophores
77. Coenocytic fungi produce  
a. Ascospores  
b. Basidiospores  
☒ c. Flagellum  
d. Septa regularly
78. Saprophytic fungi in nature compete with  
a. Bacteria  
☒ b. Bryophytes  
c. Dinoflagellates  
d. Slime moulds
79. Both fungi and plants.....  
a. Evolved from the chytrids  
☒ b. Have cell walls  
c. Have chloroplasts  
d. Synthesize cellulose
80. Which of the following drugs obtained from fungi is used for lowering blood cholesterol levels?



d) Vitamin H

88. Select the **odd** among the following as regards fungal nutrition
- a) Carbon
  - b) Nitrogen
  - c) Magnesium
  - d) Phosphorus
89. Which of the following is **invalid**?
- a) Conidium like sporangium is a structure that contains spores in fungi
  - b) Saxilicolous lichens are those that grow on rocks
  - c) There are no lichenised Phycomycetes
  - d) There are more lichenised Ascomycetes than the non-lichenised Ascomycetes
90. Which among the following is least in distribution?
- a) Hyphal-to-hypha fusion
  - b) Hypha-to-peg fusion
  - c) Hypha-to-sides fusion
  - d) Peg-to-peg fusion
91. Which of the following methods of plasmogamy refers to the fusion of naked gametes, one or both of which are motile
- a) Planogametic copulation
  - b) Spermatization
  - c) Gametangial copulation
  - d) Somatogamy
92. Which among the following is **true**?
- a) Hartig nets are present in the endomycorrhiza
  - b) Synkaryotic refers to a cell containing a single nucleus with a haploid number of chromosomes
  - c) Fungal colonies are generally circular in outline on a solid surface
  - d) Epibiotic organisms have reproductive organs that are locked up within the substratum
93. Which of the statements is **invalid**?
- a) Hypogean refers to fungi that grow below the substratum or the ground
  - b) The characteristic feature that most distinguishes the fungi from other organisms is the mode of reproduction
  - c) The characteristic feature that most distinguishes the fungi from other organisms is the mode of nutrition
  - d) Conidia, sporangia and gametangia are all reproductive structures in fungi

External factors that may influence the composition of fungal cell wall include the following except.....

- a) Ph
- b) light
- c) Composition of the media
- d) Temperature

95. Flakes of a fruiting body under a microscope indicates the presence of a layer in which the component hyphae lie parallel to one another; this may be

- a) Mycelium
- b) Prosenchyma
- c) Pseudoparenchyma
- d) Stroma

96. Which of the following statements is true?

- a) Hyperplasia refers to excessive cell enlargement
- b) Hypertrophy refers to excessive cell division
- c) Lomasome is an example of woronin body
- d) Homothallic refers to fungi in which sexual reproduction takes place in a single thallus.

97. Select the odd among the following as regards fungal nutrition

- a) Iron
- b) Copper
- c) Zinc
- d) Potassium

**For questions 98 – 100, select the ODD one among the options**

98. In terms of source organism

- a) Ampicillin
- b) Amoxacillin
- c) Meticillin
- d) Penicillin

99. In terms mode of formation

- a) Fungal traps
- b) Haustorium
- c) Hyphopodium
- d) Stroma