



KENYATTA UNIVERSITY

**EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE (MEDICAL
LABORATORY SCIENCES)**

HML 218: BASIC MYCOLOGY

2ND SEMESTER 2022/2023

TIME: 2 HOURS

INSTRUCTIONS:

SECTION A: ANSWER ALL QUESTIONS (4 MARKS EACH)

1. State the fungi that can be identified using the following stains:
 - A. Lactophenol Cotton Blue (1 mark)
 - B. Periodic Acid Schiff Stain (1 mark)
 - C. Giemsa Stain (1 mark)
 - D. Papanicolaou Stain (1 mark)
2. Using diagrams, outline the morphology of Zygomycetes and *Coccidioides immitis* (4 marks)
3. Explain the collection and transportation of clinical mycological specimens (4 marks)
4. Outline the taxonomic classification of fungi (4 marks)
5. Explain 4 fungal isolation special applications agar (4 marks)

SECTION B: ANSWER ANY ONE QUESTION (20 MARKS)

6.
 - a. Describe the sexual and asexual reproduction of Ascomycetes (10 marks)
 - b. Discuss the components and uses of Potato Dextrose Agar (10 marks)
7.
 - a. Describe the colony morphologies of fungi (8 marks)
 - b. Discuss the virulent factors of *Candida parapsilosis* and *Histoplasma capsulatum* (12 marks)

SECTION C: ANSWER ALL QUESTIONS (20 QUESTIONS, ½ A MARK EACH)

1. Basidiospores form in which part of the Basidiomycota life cycle?
 - a. Basidia
 - b. Mycelia
 - c. Hyphae
 - d. - Zygote

2. Which type of mycosis is referred as deep mycosis?
 - a. Systemic
 - b. Subcutaneous
 - c. Cutaneous
 - d. Superficial
3. Reproduction in fungi can be through?
 - a. Asexual reproduction only
 - b. Sexual reproduction only
 - c. Both sexual and asexual reproduction in all the classes of fungi
 - d. Asexual reproduction and sexual in most of the fungi.
4. Why is Deuteromycota class referred as 'Fungi Imperfecti'?
 - a. Hyphae is absent in them
 - b. They cannot move
 - c. Sexual reproduction is absent in them
 - d. They are non-pathogenic to human
5. Rhizopusstolonifer belongs to which class?
 - a. Acrasiomycetes
 - b. Zygomycetes
 - c. Ascomycetes
 - d. Deuteromycetes
6. Asexual reproduction is usually via -----or through mycelial fragmentation
 - a. Hyphae
 - b. Vegetative spores (conidia)
 - c. Dispersal
 - d. Formation of new organisms
7. In the fungal classification system Ascomycetes come under the division of _____
 - a. Gymnomycota
 - b. Mastigomycota
 - c. Amastigomycota
 - d. Gymnomycota
8. The taxa having the ending -mycetes is _____
 - a. Division
 - b. Subdivision
 - c. Class
 - d. Order
9. The common yeast *Schizosaccharomycetes* follows which of the following asexual reproduction methods?
 - a. Binary fission
 - b. Budding
 - c. Fragmentation
 - d. Spore formation
10. The mature zygospore lies dormant for how many days?
 - a. 4-5 days
 - b. 1-3 months
 - c. 1 year
 - d. 20 days

- Zygomycota
 - Deuteromycota
 - Basidiomycota
 - d. Ascomycota
12. What is the name of the special hyphal tips through which parasitic fungi absorb nutrients directly from the cytoplasm of the living host?
- a. Haustoria
 - b. Mildew
 - c. Constricting ring
 - d. None of the above
13. What does 'Perfect stage' of a fungus indicate?
- a. indicates that it can reproduce asexually
 - b. indicates that it is perfectly healthy
 - c. indicates that it is able to form perfect sexual spores
 - d. All of the above
14. Explain why during transfer of colony to the sterile plate, the lid is opened only wide enough to admit the needle mainly to prevent-----
- a. Bacterial contamination
 - b. Release of spores and hyphae
 - c. Air contamination
 - d. None of the above
15. Which of the following provides the most economic help to the wine industry?
- a. Yeast
 - b. Mold
 - c. *Mycorrhiza*
 - d. Mushrooms
16. Absorptive heterotrophic nutrition is exhibited by.....
- a. Algae
 - b. Fungi
 - c. Bryophytes
 - d. Pteridophytes.
17. Columella is a specialized structure found in the sporangium of
- a. Spirogyra
 - b. Ulothrix
 - c. Rhizopus
 - d. None of these.
18. The optimum pH for the growth of fungi is-----
- a. 7.8-9
 - b. 12-14
 - c. 3.8-5.6
 - d. 1.0-2.0
19. What is the name of the process where a single cell holds multiple nuclei?
- a. Mycelia
 - b. Karyogamy
 - c. Plasmogamy
 - d. Germination
20. Which form within the Basidiomycota life cycle is 'oid'?
- a. Zygote
 - b. Hyphae
 - c. Mycelium
 - d. Basidiospores