



# TECHNICAL UNIVERSITY OF MOMBASA

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FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

**UNIVERSITY EXAMINATION FOR:**

DEGREE

AML 4307 : MEDICAL MYCOLOGY

END OF SEMESTER EXAMINATION

**SERIES:** AUGUST 2019

**TIME:** 2 HOURS

**DATE:** Pick Date Aug 2019

## Instructions to Candidates

You should have the following for this examination

*-Answer Booklet, examination pass and student ID*

This paper consists of **TWO** Section(s). Attempt ALL questions.

**Circle the correct answer in section A.**

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Section A (30 Marks)

1. Whom among the following is considered to be the father of medical mycology?

- a) Raymond Sabouraud
- b) Rose Bengal
- c) Lois Pasteur
- d) Antony van Leuwenhoek
- e) Antonio Micheli

2. The following statements are true about mycotoxicosis except\_\_\_\_\_

- a) Antibiotics are effective in treatment.
- b) Foodstuffs can be implicated as the cause of poisoning
- c) Fungal contamination can be detected in consumed foods
- d) The symptoms are not transmissible from person to person.
- e) Toxicity may be affected by the age of victims

3. Which of the following enable pathogenic fungi to resist phagocytosis?

- a) Chlamyospores
- b) Pseudohyphae
- c) Mitochondria
- d) Capsule
- e) Mycelium

4. Mycetoma caused by fungi effects the\_\_\_\_\_

- a) Neck
- b) Blood stream
- c) Nails
- d) Reproductive organs
- e) Feet

5. Thermotolerance in fungi is associated with \_\_\_\_\_.

- a) Survival
- b) Sporulation
- c) Virulence
- d) Iron molecules
- e) Dispersal

6. The following is true on superficial mycosis except\_\_\_\_\_

- a) The skin is infected
- b) Tissue is invaded eliciting immune response
- c) The hair can be infected
- d) Patient may be unaware of the infection
- e) Pathological changes are not observed

7. The following is true for lactophenol Cotton Blue Stain except\_\_\_\_\_
- a) It can stain hyphae and spores
  - b) It contains glycerol
  - c) The stain can fix vegetative fungi
  - d) Differentiates Gram positive and Gram-negative fungi
  - e) It can be used in the wet mount method
8. Which one of the following media is used for culturing *Candida* species from contaminated specimens?
- a) Brain Heart infusion agar
  - b) Sabouraud agar with 2% dextrose
  - c) Corn meal agar
  - d) Nutrient agar
  - e) Sabouraud agar containing chloramphenicol
9. Which one of the following mycosis cause disfiguring of the face?
- a) Moniliasis
  - b) Histoplasmosis
  - c) Coccidioidomycosis
  - d) Aspergillosis
  - e) Zygomycosis
10. Which microscopic method is routinely used to identify *Cryptococcus neoformans*?
- a) 10% KOH mount
  - b) Giemsa staining
  - c) Indian Ink staining
  - d) Germ tube test
  - e) Gram stain

11. Which one of the following fungal structure binds selectively to calcofluor?
- a) Endoplasmic reticulum
  - b) Flagella
  - c) 1.3.  $\alpha$ -glucan
  - d) Chitin
  - e) Capsule
12. Fungi and plant cell share the following structures except \_\_\_\_\_
- a) Enclosed nucleus
  - b) Golgi apparatus
  - c) Chloroplast
  - d) Cell wall
  - e) Mitochondria
13. Which of following fungal disease may occur due to prolonged use of antibiotics?
- a) Onchomycosis
  - b) Aspergilloma
  - c) Candidiasis
  - d) Blastomycosis
  - e) Tinea capitis
14. Which of the following fungus is acquired through accidental pricking among farmers?
- a) Ingestion
  - b) Sexual contact
  - c) Inhalation
  - d) Drinking contaminated water
  - e) Sporothrix

15. Which one of the following basidiomycetes is considered to be highly poisonous?

- a) *Candida albicans*
- b) *Amanita muscaria*
- c) *Aspergillus niger*
- d) *Rhizopus oryzae*.
- e) *Cryptococcus neoformans*

16. The main function of the hypha tip is \_\_\_\_\_

- a) To form mycelia
- b) Movement
- c) Resist phagocytosis
- d) Release enzymes for breakdown of substrates
- e) Enable fungi to resist antimicrobial drugs

17. Which of the following medium is non selective for isolation of fungi?

- a) Brain Heart Infusion agar
- b) Czapek's agar
- c) Inhibitory mold agar
- d) Mycosel agar
- e) Mycobiotic

18. Which of the following spores are asexually reproduced?

- a) Sporangiospores
- b) Asci
- c) basidiospores
- d) zygosporos
- e) Ascospores

19. The most common *Candida* species which cause oral thrush in immunocompromised persons is \_\_\_\_\_

- a) *Candida kruseii*
- b) *C. tropicalis*
- c) *C. glabrata*
- d) *C. pseudotropicalis*

e) *C. albicans*

20. Rose Gardner's disease is caused by \_\_\_\_\_

- a) *Malassezia furfur*
- b) *Paracoccidioides brasiliensis*
- c) *Sporothrix schenckii*
- d) *Ochroconis gallopava*
- e) *Penicillium. verrucosum*

21. The following is true on mycosis except \_\_\_\_\_

- a) The diseases are opportunistic
- b) Causative agent can be pigmented
- c) Can be contagious
- d) Disease causing fungi may not be pigmented
- e) Disease causing fungi are not dimorphic

22. Candidiasis can occur if the following organisms are reduced \_\_\_\_\_

- a) *Penicillium species*
- b) *Lactobacillus species*
- c) *Trichophyton rubrum*
- d) *Microsporum audouinii*
- e) Vaginal yeasts

23. Which of the following can be identified by the Kaminski's Dermatophyte Identification Scheme?

- a) *Trichophyton rubrum*
- b) *Penicillium species*
- c) *Candida pseudotropicalis*
- d) *Aspergillus niger*
- e) *Histoplasma capsulatum*

24. *Histoplasma capsulatum* causes systemic mycoses named Histoplasmosis also known as \_\_\_\_\_

- a) HIV/AIDS related meningitis
- b) Vaginal thrush
- c) Darling's disease or cave disease
- d) Kaposi sarcoma
- e) Fungaemia

25. *Malassezia furfur* can cause infection by production of \_\_\_\_\_

- a) Gas
- b) Lipase
- c) furfurase
- d) produce keratinase
- e) Bile salts

26. A characteristic feature of *Candida* species in Gram stain reaction, is

- a) Colorless
- b) Strongly Gram positive
- c) Germ tube observed
- d) Gram variable
- e) Gram negative

27. Zoospores are mainly produced by \_\_\_\_\_

- a) Ascomysetes
- b) Basidiomycetes
- c) Deuteromycetes
- d) Zygomcetes
- e) Chydriomycetes

28 All of the following statements are correct about mycological culture methods except \_\_\_\_\_

- a) Culture media me be non-selective
- b) Biosafety cabinets may be used
- c) Culture media may be supplemented with antibiotics
- d) Incubation is carried out at 37°C
- e) Strict anaerobic conditions are required

29. Antifungal disc diffusion susceptibility tests can be carried on all of the following except \_\_\_\_\_

- a) Molds
- b) *Histoplasma capsulatum*
- c) Yeast cells
- d) *Cryptococcus neoformans*
- e) *Malassezia* species

30. Septate and aseptate \_\_\_\_\_ are differentiated by the presence of a septum>

- a) Hyphae
- b) Spores
- c) Stolons
- d) Conidia
- e) Arthrospores

#### Section B (40 Marks)

31.

- a) Outline the preparation of Sabaroud agar containing 2% urea (4 Marks)
- b) Illustrate the unit structures of fungi (6 Marks)
- c) Describe how antifungal susceptibility tests for pathogenic yeasts is carried out. (10 Marks)

32.

Discuss in details processing of the following specimen for fungal diagnosis:

- 1. High vaginal swabs (10 Marks)
- 2. Cerebral spinal fluid (10 Marks)