



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2020/2021

FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF
SCIENCE (MEDICAL LABORATORY SCIENCE)

HML 316: MEDICAL MYCOLOGY

DATE: Monday 26th July 2021

TIME: 11.00a.m. - 1.00p.m.

INSTRUCTIONS

SECTION A: ANSWER ALL QUESTIONS (4 Marks Each)

1. Outline the laboratory diagnosis of phaeohyphomycosis [4 marks]
2. State the predisposing factors of disseminated candidiasis. [4 marks]
3. Outline the transportation and storage of mycological specimens. [4 marks]
4. State four types of opportunistic mycoses. [4 marks]
5. Indicate the most commonly used antifungal agents for the treatment of each of the following mycotic diseases:
 - a) Tineanigra
 - b) Tineapedis
 - c) Histoplasmosis
 - d) Actinomycoticmycetoma [1 mark each]

SECTION B: ANSWER ANY ONE QUESTION (20 Marks Each)

6. George presented in a hospital laboratory with a fungal infection which had a clinical manifestation as shown in the diagram below:

2. Which of the following is NOT the cultural characteristics of fungus causing subcutaneous mycoses?
- a) Classification includes dimorphic fungi
 - b) The infections are caused by saprophytic fungi
 - c) It usually occurs in tropical regions
 - d) Majority of fungi causes superficial skin infections
3. All of the following organism cause Chromoblastomycosis, EXCEPT?
- a) *Phialophoraverrucosa*
 - b) *Fonsecaeacompecta*
 - c) *Fonsecaeapedrosoi*
 - d) *Exophiliadermatidis*
4. Which of these antifungal drugs inhibits microtubules?
- a) Griseofulvin
 - b) Amphotericin B
 - c) Ketoconazole
 - d) Flucytosine
5. How are skin tripping's transported by use of-----
- a) microscope slide
 - b) packet
 - c) envelope
 - d) none of the above
6. _____ is a superficial fungal infection found on the head.
- a) Tineacruris
 - b) Tinea capitis
 - c) Tineapedis
 - d) Tineacorporis
7. The pH level of the fungal culture media is an important growth factor for fungi, what is the best pH range for the growth?
- a) pH 7 to 9
 - b) pH 3 to 5
 - c) pH 2 to 7
 - d) pH 4 to 6

8. All of the following are the common stain used in the direct microscopic examination for the fungal infection specimens, EXCEPT?
- a) India Ink stain
 - b) Silver stain
 - c) Lactophenol cotton blue stain
 - d) Leishman's stain
9. The first-line recommended treatment for tinea nigra is _____.
- a) Itraconazole
 - b) Clindamycin
 - c) Amphotericin
 - d) Nystatin
10. During an office visit you notice a brown spot on the bottom of your patient's foot. You determine that it could be a fungal infection and take a sample to inspect under a microscope. Under the microscope you see many 2 celled oval yeast with short hyphae. Which is the likely diagnosis for this spot?
- a) Black piedra
 - b) Tinea corporis
 - c) Tinea nigra
 - d) Tinea pedis
11. One characteristic found almost exclusively on dermatophytes is the presence of microconidia and macroconidia. Microconidia are more uncommon; however, one group of dermatophytes is recognizable for having a lot of microconidia and only rare macroconidia. Which group of dermatophytes is known for its numerous microconidia?
- a) Trichophyton species
 - b) Deuteromycetes
 - c) *Epidermophyton*
 - d) *Microsporum* species
12. A young man comes to your office and is a little embarrassed to tell you about his complaint. He states that he has a problem around his groin. Upon inspection you find a well demarcated and moist rash around his groin and the insides of both his legs. What might his problem be?
- a) Tinea unguium
 - b) Tinea corporis

- c) Bacterial folliculitis
 - d) Tiniacurris
13. A hunter in the Midwest of America developed a flu-like symptoms with fever, headache, muscle pain and cough since a week. Swabs specimens and the sputum sample was taken, radiography examination was also performed which showed diffused bilateral pneumonia. After a week of culture, white mold colonies were observed with large and small conidia. Name the possible pathogen the farmer is exposed to?
- a) Coccidioidomycosis
 - b) Sporotrichosis
 - c) Histoplasmosis
 - d) Blastomycoses
14. All of the following are the characteristics of systemic mycoses/deep mycosis, EXCEPT?
- a) Most of the dimorphic fungi cause the infection
 - b) Pathogenesis mostly occurs due to the inhalation of spores
 - c) Lungs are the site of infections for all of the fungi
 - d) Infection can develop in immunocompromised individuals
15. Blastomyces dermatitidis is a dimorphic fungus that exists as yeast or mold depending upon its growth temperature, all of the following are the characteristics of yeast form of *B. dermatitidis*, EXCEPT?
- a) The incubation temperature is 25-degree Celsius
 - b) It reproduces by the formation of blastoconidia
 - c) The cells are spherical in shape with a thick double layer wall
 - d) Amphotericin is the drug of choice
16. Which of the following pathogenic fungi is the member of human microbiota?
- a) *Aspergillusniger*
 - b) *Cryptococcus neoformans*
 - c) *Candida albicans*
 - d) *Rhizopusoryzae*
17. All of the following are the common sites of infections caused by *C. albicans*, except?
- a) Mouth
 - b) Throat
 - c) Groin of infants
 - d) Vaginal area.

18. Main cause of toxic problems in aflatoxicosis is.....
- a) *Aspergillusflavus*
 - b) Aflatoxinepoxide
 - c) Carcinogens effects
 - d) None of the above
19. For a minor fungal skin infection, like athlete's foot, which of these drugs would NOT be a good choice?
- a) Amphotericin B, given systemically
 - b) Griseofulvin, given systemically
 - c) Clotrimazole, given locally
 - d) Miconazole, given locally
20. Which of these molecules is present in fungal cell membranes but not in animal cell membranes?
- a) Cholesterol
 - b) Beta-glucan
 - c) Ergosterol
 - d) Fluconazole