JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF HEALTH SCIENCES

UNIVERSITY EXAMINATION FOR DEGREE OF BACHELOR OF SCIENCE

COMMUNITY HEALTH AND DEVELOPMENT

2ND YEAR 2ND SEMESTER 2023/2024 ACADEMIC YEAR

KISUMU

COURSE CODE: HBB 9202

COURSE TITLE: MEDICAL MYCOLOGY

EXAM VENUE: **STREAM: (BSc. Comm Hlth & Dev)**

DATE: **EXAM SESSION:**

TIME: 2.00 HOURS

Instructions:

1. **Answer all the questions in Section A and ANY other TWO questions in Section B.**
2. **Candidates are advised not to write on the question paper.**
3. **Candidates must hand in their answer booklets to the invigilator while in the examination room.**

SECTION A: ANSWER ALL QUESTIONS (30 MARKS)

1. Explain THREE beneficial applications of fungi (3 marks)
2. Describe the mode of nutrition of fungi (3 marks)
3. What are the different distinguishing characteristics between yeast and molds? (3 marks)
4. Explain the biological importance of fungal spores (3 marks)
5. Compare and contrast the mechanisms of fission and budding as used in asexual reproduction of fungi (3 marks)
6. Discuss THREE mechanisms through which mycoses can be transmitted/acquired (3 marks)
7. What is thermal dimorphism and what function does this adaptation serve in fungi (3 marks)
8. Explain why there are relatively few antimycotic drugs available for combating fungal infections? (3 marks)
9. List THREE host defense factors against fungi (3 marks)
10. Explain THREE techniques used in fungi identification in the laboratory (3 marks)

SECTION B: ANSWER QUESTION ONE AND ANY OTHER QUESTION (40 MARKS)

1. Discuss, giving examples, the clinical classification of fungal infections (20 marks)

2. a. What are opportunistic infections and why do only some people get them? (2 marks)

b. List and explain THREE factors that can predispose one to opportunistic mycosis (6 marks)

c. In what respect do mycoses caused by true pathogenic fungi differ from mycoses caused by fungi associated with opportunistic infections? (4 marks)

d. Discuss briefly TWO clinical manifestations of Candidiasis (8 marks)

3. Discuss dermatophytes under:

a) Causative agents and epidemiology (4 marks)

b) Risk factors (3 marks)

c) Clinical manifestations (10 marks)

d) Prevention and control (3 marks)

Jaramogi Oginga Odinga University of Agriculture and Technology

School of Health Sciences

Medical Mycology Course Outline

Sept - Dec Semester 2023

LECTURER: Ms. Grace Mogire

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HBB 9202: Medical Mycology

Purpose:

Medical Mycology involves the study of medically important fungi and how they relate to humans in health and disease. In this course the students will learn about the fungi (molds and yeasts) of medical importance and the diseases they cause.

The course will clearly outline the contribution of Mycology to public heath with emphasis on communicable disease surveillance, prevention and control, outbreak and emergency response to communicable fungal diseases. Emphasis in this course will be on the fungal diseases and their clinical presentation, pathogenesis, modes of transmission, laboratory diagnosis, prevention and control.

Learning Outcomes

Upon successful completion of the course, learners should be able to:

i. Understand the fungi in terms of sub clinical divisions of mycoses: ecology, classification, importance, transmission, virulence, pathogenicity, isolation.
ii. Principles of different laboratory methods for diagnosis of fungal infections.
iii. Antifungal therapy, control and prevention.
iv. The classification, structural physiology, and cultural characteristics of fungi.

Course Outline

Lesson 1	Introduction to Mycology. Structure and morphology of fungi
Lesson 2	Classification and characteristics of medically important fungi
Lesson 3	Reproduction in Fungi, Laboratory diagnosis of fungi.
Lesson 4	Fungal pathogenesis, Treatment of fungal infections
Lesson 5	Diseases caused by fungi; Definition, symptoms, epidemiology, etiology, laboratory diagnosis and treatment
	Dermatophytes

Lesson 6 Assessment

Lesson 7 Yeast infections: Candidiasis, Cryptococcosis Assessment

Lesson 8 Pulmonary mycoses: Coccidioiodomycosis, Histoplosmosis, Blastomycosis,

Lesson 9 Paraccoccidioidomycosis.

Lesson 10 Inoculation mycosis: Sporotrichosis, Chromoblastomycosis, Mycetoma.

Lesson 11 Opportunistic fungus diseases: Aspergillosis, Zygomycosis

Lesson 12 Miscellaneous mycoses: penicilliosis, Otomycosis and keratomycosis

Lesson 13 Assessment

Teaching methods; The course is based on lectures, tutorials and discussions.

Instructional material and Equipment; Chalk/ whiteboard markers and board, handouts

Assessment; End of semester examination – 70%, Continuous Assessment Tests- 20%, Assignmets-10%

CORE TEXTBOOK

Malcolm D. Richardson , David W. Warnock (2012); **Fungal Infection: Diagnosis and Management, 4th Edition;** ISBN-13: 978-1405170567; Wiley-Blackwell.

FURTHER READING

Davise H. Larone (2011); **Medically Important Fungi: A Guide to Identification, 5th Edition;** ASM Press**;** ISBN-13**:** 978-1555816605

Carol A. Kauffman, Peter G. Pappas, Jack D. Sobel, William E. Dismukes (2011): **Essentials of Clinical Mycology, 2nd Edition.** Springer**.** ISBN-13**:** 978-1441966391

Elias J. Anaissie MD, Michael R. McGinnis PhD, Michael A. Pfaller MD (2009): **Clinical Mycology with CD-ROM, 2nd Edition.** Churchill Livingstone. ISBN-13: 978-1416056805