



(University of Choice)  
**MASINDE MULIRO UNIVERSITY OF  
SCIENCE AND TECHNOLOGY  
(MMUST)**

**MAIN CAMPUS**

**UNIVERSITY EXAMINATIONS SPECIAL/SUPPLEMENTARY  
2021/2022 ACADEMIC YEAR**

**FIRST YEAR THIRD TRIMESTER EXAMINATIONS**

**FOR THE DEGREE  
OF  
BACHELOR OF SCIENCE IN NURSING  
DISTANCE LEARNING**

**COURSE CODE: NCD 125**

**COURSE TITLE: MEDICAL MICROBIOLOGY AND PARASITOLOGY**

**DATE: 21/04/2022**

**TIME: 8:00AM-11:00AM**

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**INSTRUCTIONS TO CANDIDATES**

This paper consists of three sections:

- i. Section A – Multiple Choice Questions
- ii. Section B – Short Answer Question
- iii. Section C – Long Answer Question.

Answer all questions

TIME: 3 Hours

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 4 Printed Pages. Please Turn Over. ►

**SECTION A: ANSWER ALL QUESTIONS (20 MARKS)**

1. Who revealed the DNA structure?
  - A. Alexander Fleming
  - B. Louis Pasteur
  - C. Watson & Crick
  - D. Jonas Salk
2. Which of the following is the best definition of Narrow spectrum Antibiotics?
  - A. Chemicals/drug that inhibit or kill one type or strain of microorganism
  - B. Chemicals/drug that inhibit or kill bacteria
  - C. Chemicals produced by microbes that inhibit or kill other microorganisms
  - D. Chemicals produced by microbes that inhibit or kill other microorganisms but are relatively harmless to eukaryotes
3. Ribosomes are known as universal cell organelle which helps in?
  - A. Protein synthesis
  - B. Motility of the bacteria
  - C. Attachment of bacteria to the host
  - D. Controlling cell activities
4. The protozoon transmitted mainly by sexual contact is:
  - A. *Trichomonas hominis*
  - B. *Dientamoeba fragilis*
  - C. *Trichomonas vaginalis*
  - D. *Retortamonas hominis*
5. Which of the following activities takes place in stationary phase of bacterial growth curve?
  - A. Cells are at highest metabolic activity
  - B. Little or no cell division occurs
  - C. Cell division begins to slow down.
  - D. Toxic waste build up
6. Which of the following is a killed attenuated virus vaccine?
  - A. Measles Vaccine
  - B. Mumps vaccine
  - C. Rubella vaccine
  - D. Salk vaccine
7. The fungal disease that affect the internal organs and spread through the body are called?
  - A. Mycoses
  - B. Systemic mycoses
  - C. Mycotoxicosis
  - D. Superficial mycoses
8. Candidiasis is caused by?
  - A. *Candida albicans*
  - B. *Aspergillus spp.*
  - C. *E. floccosum*
  - D. *M. audouinii*
9. Clear-zones formation around antibiotic disc is due to?
  - A. Growth of the bacterium surrounding of the disc

- B. Lysis of the bacterial cells surrounding the disc
  - C. The destruction of paper disc (antibiotic)
  - D. None of these
10. What is the mechanism of action of Azoles antifungals?
- A. Permeability of cell membrane
  - B. Interfere with ergosterol synthesis
  - C. Forms a barrier to fungal growth
  - D. Inhibits RNA synthesis
11. When Organism spontaneously produces an enzyme that degrades the antibiotic during drug resistance is known as?
- A. Efflux mechanisms
  - B. Impermeability
  - C. Enzyme inactivation
  - D. Enzyme addition
12. Which of the following statement is true about viruses?
- A. Has no true nucleus
  - B. Need a living cell to reproduce
  - C. Has organelles
  - D. Multiply by binary fission
13. The following are targets for the action of Antiretrovirals, which one is NOT?
- A. The attachment stage
  - B. Interferon target
  - C. Cell wall
  - D. Uncoating stage
14. Which type of parasite is classified under sub-phylum mastigophora?
- A. *Giardia lamblia*
  - B. *Balantidium coli*
  - C. *Entamoeba histolytica*
  - D. *Naegleria fowleri*
15. Which of these insects transmits yellow fever?
- A. Mosquito
  - B. Louse
  - C. Flea
  - D. Bed bug
16. Which one is intestinal pathogenic protozoa?
- A. *Balantidium coli*
  - B. *Trichomonas vaginalis*
  - C. *Toxoplasma gondii*
  - D. *Babesia microti*
17. Control that uses insects and disease causing agents to attack pest populations is called?
- A. Cultural control
  - B. Population control
  - C. Biological control
  - D. Chemical control

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18. The extracellular enzyme produced by *Staphylococcus aureus* that degrades the antibiotic is known as?
    - A.  $\beta$ -lactamase
    - B. Phosphatase
    - C. Protease
    - D. Staphylokinase
  19. Which species of Schistosomes causes vesical (urinary) schistosomiasis?
    - A. *Schistosoma mansoni*
    - B. *Schistosoma haematobium*
    - C. *Schistosoma japonicum*
    - D. *Schistosoma intercalatum*
  20. Which one is a physical method used to achieve sterilization
    - A. Incinerator
    - B. Halogen
    - C. Phenol
    - D. Alcohol

**SECTION B: SHORT ANSWER QUESTIONS: ANSWER ALL QUESTIONS (40 MARKS)**

1. Outline the **Koch's postulates** in relation to presence of microorganism and a specific disease (8 Marks)
2. State the differences between Prokaryotic and eukaryotic cell (8 marks)
3. Briefly explain the any four physical methods used to achieve sterilization (8 Marks)
4. Explain the antimicrobial action on inhibition of cellular membrane function (8 marks)
5. Enumerate the differences between viruses and bacteria (8 marks)

**SECTION C: LONG ANSWER QUESTIONS: ANSWER ALL QUESTIONS (40 MARKS)**

1. a) Discuss the Mechanisms of antimicrobial resistance by microorganisms (10 Marks)  
b) Malaria is endemic in Western Kenya, discuss the various measures that are being used to control the vector (10 Marks)
2. *Trichomonas vaginalis* causes trichomoniasis which is one of the Sexually transmitted infection, explain the Life cycle, Mode of infection, pathology and diagnosis of the parasite (20 Marks)