



# MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

P.O. Box 972-60200 – Meru-Kenya.  
Tel: +254 (0)799529958, +254 (0)799529959, +254 (0)712524293  
Website: [www.must.ac.ke](http://www.must.ac.ke) Email: [info@must.ac.ke](mailto:info@must.ac.ke)

---

UNIVERSITY EXAMINATIONS 2024/2025

SECOND YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR  
OF SCIENCE IN NURSING

**NND 3213/NUU 3216 - COMMUNICABLE AND VECTOR BORNE DISEASES**

**DATE: JANUARY 2025**

**TIME: 3 HOURS**

---

**INSTRUCTIONS:** *All questions are compulsory*

Ensure that all your answers are properly numbered

Part 1 Multiple Choice Questions (MCQs): Write the correct answer on the space provided in the answer booklet. Each MCQ is one mark.

Part 11: Short Answer Questions-Answer questions following each other on the answer booklet

Part 111: Long Answer Questions-Answer

---

## **SECTION I: SHORT ANSWER QUESTIONS (20 MARKS)**

1. If a healthcare worker aims to disrupt the transmission of an infectious agent by focusing on hand hygiene and sterilization, at which point in the chain of transmission are they intervening?
    - a) Host
    - b) Reservoir
    - c) Mode of transmission
    - d) Portal of entry
  2. An illness with symptoms of sneezing, runny nose, and mild throat irritation appears suddenly after a short incubation period. Which disease likely fits this description?
    - a) Pertussis
- 



- b) Tuberculosis
  - c) Common cold
  - d) Diphtheria
3. When screening programs are implemented to catch diseases in their early stages, which type of prevention is being practiced?
- a) Primary prevention
  - b) Secondary prevention
  - c) Tertiary prevention
  - d) Quaternary prevention
4. A national health program introduces widespread vaccinations and health education campaigns to prevent the occurrence of new infections. This strategy best exemplifies which level of disease prevention?
- a) Primary prevention
  - b) Secondary prevention
  - c) Tertiary prevention
  - d) Quaternary prevention
5. Inhalation of spores from contaminated animal products is a hallmark of which serious, zoonotic infection?
- a) Brucellosis
  - b) Anthrax
  - c) Tetanus
  - d) Rabies
6. In a community outbreak, certain individuals carry the disease-causing organism but never develop symptoms. These individuals are most likely classified as:
- a) Incubatory carriers
  - b) Chronic carriers
  - c) Passive carriers
  - d) Asymptomatic carriers
7. During which stage of infectious disease is a person most likely to transmit the disease, despite showing no symptoms?
- a) Incubation period
  - b) Prodromal period
  - c) Convalescence period

- d) Decline phase
8. A key strategy in the prevention of severe respiratory diseases in children includes which of the following interventions?
- a) Routine handwashing
  - b) Diphtheria vaccination
  - c) Broad-spectrum antibiotic use
  - d) Steroid therapy
9. Which bacterium is responsible for causing strep throat?
- a) Streptococcus pyogenes
  - b) Mycobacterium tuberculosis
  - c) Escherichia coli
  - d) Staphylococcus aureus
10. What is the term for an intermediary organism that carries and transmits a pathogen to a new host?
- a) Vector
  - b) Reservoir
  - c) Fomite
  - d) Host
11. In the chain of disease transmission, what does "mode of transmission" refer to?
- a) The way in which the pathogen moves from the reservoir to the host
  - b) The environment in which the disease occurs
  - c) The person who carries the pathogen
  - d) The source of the pathogen
12. A farmer who has frequent contact with livestock and animal products develops a skin lesion and flu-like symptoms. Which bacterial zoonotic infection is most consistent with these findings?
- a) Anthrax
  - b) Rabies
  - c) Plague
  - d) Leptospirosis
13. A patient who developed a sore throat and swollen lymph nodes was diagnosed with an infection. The pathogen produces a toxin that can cause severe complications if

untreated. Which disease is likely responsible, and what is the key management strategy?

- a) Tuberculosis; immediate isolation
- b) Diphtheria; administration of antitoxin and antibiotics
- c) Pertussis; supportive care and antibiotic treatment
- d) Influenza; antiviral therapy

14. A patient with a painless genital ulcer followed by a body-wide rash is likely infected with which sexually transmitted pathogen?

- a) *Treponema pallidum*
- b) *Neisseria gonorrhoeae*
- c) Human papillomavirus
- d) Herpes simplex virus

15. In a tropical region, patients present with joint pain, rash, and high fever following an increase in *Aedes* mosquito populations. Which viral illness is most consistent with these symptoms?

- a) Malaria
- b) Dengue fever
- c) Yellow fever
- d) Lassa fever

16. During a yellow fever outbreak, which organ system would be most at risk of severe damage if the disease progresses?

- a) Gastrointestinal system
- b) Central nervous system
- c) Respiratory system
- d) Hepatic system

17. A traveler returning from an area with poor sanitation develops severe dehydration and muscle cramps after consuming untreated water. Which of the following preventive strategies would have reduced the risk of contracting this illness?

- a) Vaccination against viral diseases
- b) Boiling or treating water before consumption
- c) Wearing protective clothing
- d) Avoiding close contact with sick individuals

18. A veterinarian develops fever and flu-like symptoms after assisting with the delivery of a stillborn calf. This disease is most likely transmitted through which mode of infection?
- Vector-borne transmission by fleas
  - Inhalation or contact with infected animal fluids
  - Fecal-oral transmission
  - Sexual contact with an infected individual
19. A patient presents with painless genital ulcers, followed by a rash and flu-like symptoms several weeks later. If untreated, this infection may progress to damage the nervous system. Which pathogen is likely involved?
- Herpes simplex virus
  - Treponema pallidum
  - Neisseria gonorrhoeae
  - Chlamydia trachomatis
20. A patient with a history of multiple sexual partners presents with genital warts. The healthcare provider is concerned about the potential for progression to a more serious condition. What preventive measure could have reduced the patient's risk of infection?
- Consistent use of antibiotics
  - Vaccination against human papillomavirus (HPV)
  - Regular screening for bacterial infections
  - Use of antiviral therapy

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

- List the prevention and control measures for Syphilis (6 marks)
- Describe the life cycle of Chlamydia (7 marks)
- Describe the pathogenesis of Clostridium difficile (8 marks)
- Describe the clinical manifestations of anthrax (6 marks)
- Explain the clinical manifestation observed in yellow fever infection (7marks)
- Explain why breastfeeding is an intervention that acts at all three levels of primary prevention (6 marks)

### **SECTION C: LONG ANSWER QUESTIONS (20 MARKS EACH)**

#### **QUESTION ONE**

Explain the levels of disease prevention (20 marks)



## QUESTION TWO

A 34-year-old woman presents to the emergency department with symptoms of abdominal pain, diarrhea, nausea, and fever. She mentions that her symptoms began 24 hours after attending a party where she consumed homemade mayonnaise prepared with raw eggs and undercooked chicken. Upon further questioning, she reveals a preference for eating raw or lightly cooked eggs and poultry. Her stool sample was sent for laboratory testing.

- a) Outline the most likely causative agent (1 marks)
- b) Describe the pathogenesis alongside the life cycle of the pathogen (15 marks)
- c) List its prevention measures (4 marks)

