



MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

P.O. Box 972-60200 – Meru-Kenya

Tel: +254(0) 799 529 958, +254(0) 799 529 959, + 254 (0) 712 524 293,

Website: info@must.ac.ke Email: info@must.ac.ke

University Examinations 2024/2025

THIRD YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR
OF MEDICAL MICROBIOLOGY

HMM 3318: PRINCIPLES OF TROPICAL AND INFECTIOUS DISEASES

DATE: JANUARY 2025

TIME: 3 HOURS

INSTRUCTIONS:

Answer *All* questions

Ensure that all your answers are properly numbered

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

Part II: Short Answer Questions – Answer questions following each other on the answer booklet

Part III: Long Answer Questions – Answer each question on the answer booklet

SECTION A: MULTIPLE CHOICE QUESTIONS (20 marks)

- Which of the following is a typical clinical feature of Typhoid Fever?
 - Red, blistering rash
 - Rose spots on the chest and abdomen
 - Generalized itching
 - Petechiae on the extremities
- What is the most common diagnostic test for Typhoid Fever?
 - Widal test
 - PCR for Salmonella typhi
 - X-ray of the abdomen
 - CT scan of the abdomen
- Which of the following infections is associated with incubatory or precocious carriers?
 - Poliovirus
 - Diphtheria

- c. Measles
 - d. Hepatitis B
4. Which of the following is the mainstay of treatment for cholera?
 - a. Antibiotics only
 - b. Fluid and electrolyte replacement
 - c. Surgery
 - d. Antiviral medication
 5. Yellow fever typically has what kind of duration?
 - a. Chronic and long-lasting
 - b. Acute and short
 - c. Latent with no symptoms
 - d. Intermittent with recurrent episodes
 6. What is the typical outcome of Hepatitis A infection?
 - a. Chronic infection with frequent recurrences
 - b. Recovery without sequel or recurrence
 - c. Long-term liver damage
 - d. Persistent joint pain
 7. What is the causative agent of pneumococcal pneumonia?
 - a. Haemophilus influenzae
 - b. Streptococcus pneumoniae
 - c. Mycobacterium tuberculosis
 - d. Klebsiella pneumoniae
 8. Which of the following is a hallmark clinical feature of pneumococcal pneumonia?
 - a. Gradual onset with mild symptoms
 - b. Productive cough with rusty sputum
 - c. Persistent dry cough
 - d. Skin rash and joint pain
 9. Hepatitis B can result in which of the following carrier states?
 - a. Healthy carrier only
 - b. Chronic carrier only
 - c. Both convalescent and chronic carriers
 - d. Incubatory carrier only
 10. What is the most common mode of transmission for Typhoid Fever?
 - a. Airborne transmission
 - b. Direct contact with an infected person
 - c. Contaminated water and food
 - d. Animal bites
 11. Which drug is commonly used for treating carriers or mild cases of Typhoid Fever?
 - a. Ciprofloxacin

- b. Chloramphenicol
 - c. Ampicillin
 - d. Ceftriaxone
12. Where is *Clostridium botulinum* typically found?
- a. Water
 - b. Soil
 - c. Air
 - d. Human skin
13. During which seasons does the greatest incidence of meningococcal meningitis occur?
- a. Summer and fall
 - b. Winter and spring
 - c. Fall and winter
 - d. Summer and winter
14. What is the incubation period for meningococcal meningitis?
- a. 1-2 days
 - b. 2-10 days, commonly 3-4 days
 - c. 10-14 days
 - d. 24 hours
15. Which of the following is NOT a common symptom of pulmonary tuberculosis?
- a. Persistent cough for 3 weeks or more
 - b. Productive cough with or without blood-stained sputum
 - c. Joint pain and swelling
 - d. Night sweats and weight loss
16. A characteristic symptom of pulmonary tuberculosis involving the lungs is:
- a. Skin rashes
 - b. Blood-stained sputum
 - c. Stiffness of joints
 - d. Severe diarrhea
17. Besides mosquito bites, which of the following is NOT a possible mode of malaria transmission?
- a. Blood transfusion
 - b. Hypodermic needles
 - c. Organ transplantation
 - d. Contact with contaminated surfaces
18. What is the causative agent of Bacillary Dysentery?
- a. *Escherichia coli*
 - b. *Shigella* species

- c. Salmonella species
 - d. Vibrio cholerae
19. Strongyloidiasis is most common in:
- a. Cold, dry regions
 - b. Warm and wet tropical and temperate regions
 - c. Desert regions
 - d. Arctic regions
20. What percentage of polio infections are unapparent (asymptomatic)?
- a. Less than 10%
 - b. 50%
 - c. More than 90%
 - d. 30-40%

SECTION B: SHORT ANSWER ALL QUESTIONS (40 MARKS)

- | | |
|--|------|
| 1. Describe epidemiologic triad | 6mks |
| 2. Explain natural history of disease | 6mks |
| 3. Describe three treatment phases from the diseases caused by Treponema pallidum | 4mks |
| 4. Differentiate between incubation period and prodromal period giving one example | 4mks |
| 5. Describe diagnosis goal standard of TB | 6mks |
| 6. State Clinical manifestations of paroxysmal phase of Pertussis | 6mks |
| 7. Explain two clinical manifestation of plague | 4mks |
| 8. State four late complications of HIV infection | 4mks |

SECTION C: LONG ANSWER TWO QUESTIONS (40 MARKS)

- a) A 35-year-old male presents to the clinic with a persistent cough lasting three weeks, accompanied by occasional blood-stained sputum, shortness of breath, and dull chest pain. He reports intermittent fevers, night sweats, significant weight loss, loss of appetite, fatigue, and malaise. Upon further examination, the physician noted swollen lymph nodes in the cervical region that are painless but have started to drain pus.

- | | | |
|------|---|-------|
| i. | Identify the causative agent | 1 mk |
| ii. | Describe the clinical manifestations based on the affected organs | 12mks |
| iii. | Describe two drug regime therapy using in the treatment | 4mks |
| iv. | State three laboratory diagnostic methods | 3mks |
- b) A 45-year-old male presents to the emergency department with a lesion on his right forearm. He works in a livestock handling facility and has reported recent exposure to animal hides. The patient has no significant medical history and is not currently taking any medications. Upon examination, a small red macule is observed on his arm, which has progressed to a papule with surrounding edema. The patient reports that the lesion is pruritic but not painful. He denies fever or systemic symptoms.
- | | | |
|------|--|------|
| i. | Identify the causative agent | 1mk |
| ii. | Describe the modes of transmission with examples | 6mks |
| iii. | Describe four Clinical manifestation phases of the disease | 8mks |
| iv. | Describe two levels of the disease prevention giving one example | 5mks |
- c) Discuss zoonotic diseases stating the infectious agent, mode of transmission and clinical manifestation
- 20mks