



UNIVERSITI KUALA LUMPUR
INSTITUTE OF MEDICAL SCIENCE TECHNOLOGY

FINAL EXAMINATION
MARCH 2025 SEMESTER

COURSE CODE : HDB20404
COURSE TITLE : PATHOGENIC MICROBIOLOGY
PROGRAMME NAME : BACHELOR OF BIOMEDICAL SCIENCE (HONOURS)
DATE : 21 JUNE 2025
TIME : 9:00AM - 12:00PM
DURATION : 3 HOURS



INSTRUCTIONS TO CANDIDATES

1. Please read the instructions given in the question paper CAREFULLY.
2. This question paper is printed on both sides of the paper.
3. This question paper consist of TWO sections.
4. Answer ALL questions for Section A.
5. Section B consist of four questions. Answer THREE (3) questions only.
6. Please write your answer on the answer booklet provided.
7. Please answer all questions in English only.
8. Please answer MCQ/EMQ questions using OMR sheet. *Tick if applicable*
9. Refer to the attached Formula/ Appendies. *Tick if applicable*

THERE ARE 14 PAGES OF QUESTIONS INCLUDING THIS PAGE

SECTION A (Total: 40 marks)

Answer ALL questions.

Please use the answer booklet provided.

1. The characteristic sign for detecting Rabies is _____.
 - A. finding Negri bodies in brain cells
 - B. finding anti-rabies antibodies in the serum
 - C. observing the symptoms of disease
 - D. testing immunofluorescent antibody

2. Legionella infections is transmitted through _____.
 - A. touching contaminated fomite
 - B. inhalation of aerosol from whirlpools and spas
 - C. drinking contaminated water
 - D. cough and sneeze from person to person

3. Some clinical signs for infective endocarditis include _____.
 - A. splinter hemorrhages
 - B. sleepiness
 - C. droopy eyelids
 - D. diarrheas

4. The following is correct regarding lobar pneumonia,:
- alveoli is congested with exudate.
 - lungs become liver-like, firm and red.
 - lungs do not return to normal.
 - it is an infection of upper respiratory tract.
- A. i,ii,iii
B. ii, iii
C. i ,ii
D. All the above
5. Which of the following person was nicknamed as Typhoid Mary?
- A. Mary Yang
B. Mary Mallon
C. Meredith Mary
D. Queen Mary
6. Which of the following option is a set of bacterial diseases?
- A. Measles, Tuberculosis, Tetanus
B. Malaria, Poliomyelitis, Mumps
C. Mumps, Cholera, Typhoid
D. Plague, Leprosy, Diphtheria
7. *Streptococcus viridans* found in _____ is a major diagnostic criteria used for infective endocarditis.
- A. 2 set of urine samples
B. 3 set of blood cultures
C. 3 set of CSF samples
D. 2 set of blood cultures

8. A productive cough with rusty sputum and chest pain are signs of infection caused by _____.
- A. *Corynebacterium diptheria*
 - B. *Streptococcus pneumoniae*
 - C. *Mycobacterium tuberculosis*
 - D. *Haemophilus influenza*
9. *Clostridium tetani* produces tetanospasmin, which is a potent _____.
- A. aflatoxin
 - B. enterotoxin
 - C. neurotoxin
 - D. toxoid
10. _____ should be taken to treat dehydration caused by diarrhea.
- A. Fruit juices
 - B. Soda drinks
 - C. Plain water
 - D. Oral rehydration salts
11. Which of the following diseases does not spread by fomite transmission?
- A. Ringworm
 - B. AIDS
 - C. Common cold
 - D. Influenza

12. Which of the following viral disease is characterized by painful swelling of the parotid gland?
- A. Rabies
 - B. Influenza
 - C. Mumps
 - D. Measles
13. Which of the following diseases is caused by the species of *Mycobacterium*?
- A. Gonorrhoea and Syphilis
 - B. Leprosy and Tuberculosis
 - C. Influenza and Leprosy
 - D. Typhoid and Tetanus
14. Which of the following is the combined vaccine given to children for protection against Tetanus, Whooping cough and Diphtheria?
- A. HIB vaccine
 - B. BCG vaccine
 - C. DPT vaccine
 - D. Covid-19 vaccine
15. Pyelonephritis is an inflammation of _____.
- A. bladder
 - B. pancreas
 - C. kidney
 - D. liver

16. Which of the following is a major virulence factor of *Cryptococcus neoformans*?
- A. Hemolysin
 - B. Capsule
 - C. Collagenase
 - D. Fimbriae
17. Genital warts are caused by _____.
- A. *Human papillomavirus*
 - B. *Moluscum contagiosum*
 - C. HIV
 - D. Cowpox
18. Appearance of _____ stool is characteristic of diarrhea caused by *Vibrio cholera*.
- A. milk tea
 - B. rusty colour
 - C. rice water
 - D. blood tinge
19. Which of the following is a primary prevention method for tetanus?
- A. Vaccination with tetanus toxoid
 - B. Muscle relaxants
 - C. Antibiotic therapy
 - D. Passive immunization with Tetanus Immune Globulin

20. Which of the following pathogen causes pneumonia?
- A. *Haemophilus influenzae*
 - B. *Bordetella pertussis*
 - C. *Salmonella typhi*
 - D. *Myxovirus influenzae*
21. Which characteristic is most important for the diagnosis of a *Mycobacterium tuberculosis* infection?
- A. Acid-fast bacilli visible on special stains.
 - B. Formation of diplococci on Gram stain.
 - C. Rapid growth on blood agar.
 - D. Green pigment production.
22. Which of the following statements regarding *Campylobacter jejuni* is incorrect?
- A. It is commonly cultured in antibiotic-containing media
 - B. Incubation temperature is 42°C
 - C. It is a normal flora of intestine
 - D. It is cultured in an atmosphere containing 5% O₂ and 10%CO₂
23. Which of the following bacteria is rarely associated with urinary tract infections?
- A. *Shigella* sp.
 - B. *E.coli*
 - C. *Proteus* sp.
 - D. *Enterobacter* sp.

24. Which of the following is incorrect regarding typhoid?
- A. Infection through contaminated food and water
 - B. *Pseudomonas leprae* causes typhoid
 - C. Intestinal perforation and death may occur in severe cases
 - D. Symptoms include high fever, weakness, constipation and loss of appetite
25. A pseudomembrane covering the tonsil is a sign of an infection caused by _____.
- A. *Haemophilus influenza*
 - B. Covid-19
 - C. *Bordetella pertussis*
 - D. *Corynebacterium diphtheria*
26. Which of the following best explains why antiretroviral therapy (ART) must be taken consistently and long-term?
- A. It cures HIV by eliminating all virus particles
 - B. It strengthens the immune system to produce more CD8+ cells
 - C. It boosts red blood cell production to fight infection
 - D. It suppresses viral replication and prevents the emergence of resistance
27. The primary target cells for HIV infection in the human body are _____.
- A. Macrophages
 - B. CD4+ T helper cells
 - C. B lymphocytes
 - D. Cytotoxic T cells

28. Which of the following types of Hepatitis cannot be transferred by blood or sexual contact?
- A. Hepatitis B
 - B. Hepatitis D
 - C. Hepatitis A
 - D. Hepatitis C
29. Food poisoning is commonly caused by _____.
- A. *Clostridium tetani*
 - B. *Clostridium perfringes*
 - C. *Clostridium botulinum*
 - D. *Clostridium butyricum*
30. Enterotoxins can be produced by _____.
- A. Rabies virus
 - B. *Vibrio cholera*
 - C. Norovirus
 - D. *Clostridium tetani*
31. Which of the following sentence is incorrect regarding tinea infections?
- A. *Tinea cruris* also known as jock itch.
 - B. *Tinea unguium* is ringworm of the nails
 - C. *Tinea corporis* is ringworm of the body.
 - D. *Tinea barbae* is ringworm of feet (athlete's foot)

32. Which of the following diseases is caused by a protozoan?
- A. Genital Warts
 - B. Gonorrhoea
 - C. Trichomoniasis
 - D. Chancroid
33. Which of the following conditions aggravates fungal diseases?
- A. Cold and dry
 - B. Humid and cold
 - C. Scorching heat
 - D. Heat and moisture
34. Dysuria means_____.
- A. discolored urine
 - B. pain during urination
 - C. presents of blood in the urine
 - D. an increased volume of urine produced
35. Which type of vaccine contains a weakened form of the pathogen that is still capable of replicating?
- A. Toxoid vaccine.
 - B. Inactivated vaccine.
 - C. Live attenuated vaccine.
 - D. Subunit vaccine.

36. Which of the following diseases, associated with sexual activity, is caused by yeast?
- A. Enterobiasis
 - B. Syphilis
 - C. Candidiasis
 - D. Scabies
37. A patient presents with severe watery diarrhea after returning from a trip to India. Which pathogen is the most likely cause of "traveler's diarrhea"?
- A. *Shigella dysenteriae*
 - B. *Clostridioides difficile*
 - C. *Escherichia coli* (ETEC strain)
 - D. *Salmonella typhi*
38. A medium used to isolate *Legionella* sp. is_____.
- A. blood agar
 - B. charcoal broth
 - C. BCYE agar
 - D. MacConkey agar
39. Identify incorrect statement regarding multi-drug therapy in tuberculosis infection.
- A. It prevents drug resistance
 - B. It reduces relapse rates
 - C. It shortens treatment duration
 - D. It lengthens treatment duration

40. *Treponema pallidum* is responsible for causing _____.
- A. Herpes
 - B. Gonorrhoea
 - C. Chancroid
 - D. Syphilis

SECTION B (Total: 60 marks)

Answer THREE (3) questions only.

Please use the answer booklet provided.

Question 1

Describe five virulence factors that increase the pathogenicity of bacteria, and give one example of each.

(20 marks)

Question 2

Discuss with example, the conditions under which pathogens can cause significant infections in cerebrospinal fluid (CSF) and blood.

(20 marks)

Question 3

(a) Briefly describe five (5) factors that can contribute to urinary infections.

(10 marks)

(b) Mahjanah took her small children with her when she went to help her parents. Her mom has shingles and needed some help around the house. In the third week of their visit the children developed chicken pox. Would you have expected this? Why?

(5 marks)

(c) Explain why there are cases of STDs in children.

(5 marks)

Question 4

Answer the following questions related to microbial diseases of the reproductive tract.

- (a) List five common pathogens that cause reproductive tract infections and briefly describe the disease each causes.

(10 marks)

- (b) Outline prevention and control measures for reproductive tract infections.

(10 marks)

END OF EXAMINATION PAPER

