



UNIVERSITI KUALA LUMPUR  
INSTITUTE OF MEDICAL SCIENCE TECHNOLOGY

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**FINAL EXAMINATION**  
**MARCH 2025 SEMESTER**

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COURSE CODE : HDB20403  
COURSE TITLE : PATHOGENIC MICROBIOLOGY  
PROGRAMME NAME : BACHELOR OF BIOMEDICAL SCIENCE (HONOURS)  
DATE : 21 JUNE 2025  
TIME : 9:00AM - 12:00PM  
DURATION : 3 HOURS



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**INSTRUCTIONS TO CANDIDATES**

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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*

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THERE ARE 14 PAGES OF QUESTIONS INCLUDING THIS PAGE

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SECTION A (Total: 40 marks)

Answer ALL questions.

Please use the answer booklet provided.

1. Genital warts are caused by \_\_\_\_\_
  - A. Cowpox
  - B. HIV
  - C. Human papillomavirus
  - D. Moluscum contagiosum
  
2. Which of the following is a major virulence factor of *Cryptococcus neoformans*?
  - A. Hemolysin
  - B. Fimbriae
  - C. Collagenase
  - D. Capsule
  
3. Determine the typical signs and symptoms of *Campylobacter jejuni* infection.
  - I. Fever
  - II. Skin rash
  - III. Bloody diarrhea
  - IV. Colicky lower abdominal pain
  - A. I, III only
  - B. II, III only
  - C. II, IV only
  - D. I, III, IV only

4. The statements below best describes \_\_\_\_\_ infection.
- I. Fried rice is always associated with the pathogen.
  - II. Food poisoning is frequently associated with stored food.
  - III. Clinical symptoms include profuse vomiting and abdominal cramp.
  - IV. Exotoxin is the only type of toxin that is produced by the pathogen.
- A. *Campylobacter jejuni*
  - B. *Salmonella typhi*
  - C. *Bacillus cereus*
  - D. *Clostridium difficile*
5. *Clostridium tetani* produces tetanospasmin, which is a potent \_\_\_\_\_.
- A. neurotoxin
  - B. toxoid
  - C. enterotoxin
  - D. aflatoxin
6. \_\_\_\_\_ should be taken to treat dehydration caused by diarrhea.
- A. Soda drinks
  - B. Fruit juices
  - C. Plain water
  - D. Oral rehydration salts
7. Which of the following diseases does not spread by fomite transmission?
- A. Influenza
  - B. Ringworm
  - C. AIDS
  - D. Common cold

8. Which of the following viral disease is characterized by painful swelling of the parotid gland?
- A. Measles
  - B. Rabies
  - C. Influenza
  - D. Mumps
9. Which of the following diseases is caused by the species of *Mycobacterium*?
- A. Leprosy and Tuberculosis
  - B. Influenza and Leprosy
  - C. Gonorrhoea and Syphilis
  - D. Typhoid and Tetanus
10. Which of the following person was nicknamed as Typhoid Mary?
- A. Mary Mallon
  - B. Mary Yang
  - C. Meredith Mary
  - D. Queen Mary
11. The following is correct regarding lobar pneumonia,:
- i. alveoli is congested with exudate.
  - ii. lungs become liver-like, firm and red.
  - iii. lungs do not return to normal.
  - iv. it is an infection of upper respiratory tract.
- A. i ,ii
  - B. i,ii,iii
  - C. ii, iii
  - D. All the above

12. Pyelonephritis is an inflammation of \_\_\_\_\_.
- A. bladder
  - B. kidney
  - C. pancreas
  - D. liver
13. The characteristic sign for detecting Rabies is \_\_\_\_\_.
- A. observing the symptoms of disease
  - B. testing immunofluorescent antibody
  - C. finding anti-rabies antibodies in the serum
  - D. finding Negri bodies in brain cells
14. Legionella infections is transmitted through \_\_\_\_\_.
- A. inhalation of aerosol from whirlpools and spas
  - B. touching contaminated fomite
  - C. drinking contaminated water
  - D. cough and sneeze from person to person
15. Which of the following option is a set of bacterial diseases?
- A. Plague, Leprosy, Diphtheria
  - B. Malaria, poliomyelitis, mumps
  - C. Measles, Tuberculosis, Tetanus
  - D. Mumps, cholera, typhoid

16. Which of the following is the combined vaccine given to children for protection against Tetanus, Whooping cough and Diphtheria?
- A. TAB vaccine
  - B. BCG vaccine
  - C. HIB vaccine
  - D. DPT vaccine
17. *Streptococcus viridans* found in \_\_\_\_\_ is a major diagnostic criteria used for infective endocarditis.
- A. 2 set of blood cultures
  - B. 3 set of blood cultures
  - C. 3 set of CSF samples
  - D. 2 set of urine samples
18. Appearance of \_\_\_\_\_ stool is characteristic of diarrhea caused by *Vibrio cholera*.
- A. milk tea
  - B. rusty colour
  - C. blood tinge
  - D. rice water
19. A pseudomembrane covering the tonsil is a sign of an infection caused by \_\_\_\_\_.
- A. *Bordetella pertusis*
  - B. Covid-19
  - C. *Haemophilus influenza*
  - D. *Corynebacterium diphtheria*

20. Which characteristic is most important for the diagnosis of a *Mycobacterium tuberculosis* infection?
- A. Rapid growth on blood agar.
  - B. Acid-fast bacilli visible on special stains.
  - C. Green pigment production.
  - D. Formation of diplococci on Gram stain.
21. Which of the following statements regarding *Campylobacter jejuni* is incorrect?
- A. Incubation temperature is 42°C
  - B. It is commonly cultured in antibiotic-containing media
  - C. It is a normal flora of intestine
  - D. It is cultured in an atmosphere containing 5% O<sub>2</sub> and 10% CO<sub>2</sub>
22. Which of the following bacteria is rarely associated with urinary tract infections?
- A. *Proteus spp*
  - B. *E.coli*
  - C. *Shigella spp*
  - D. *Enterobacter spp*
23. Which of the following is incorrect regarding typhoid?
- A. Intestinal perforation and death may occur in severe cases
  - B. *Pseudomonas leprae* causes typhoid
  - C. Infection through contaminated food and water
  - D. Symptoms include high fever, weakness, constipation and loss of appetite

24. Some clinical signs for infective endocarditis include \_\_\_\_\_.
- A. splinter hemorrhages
  - B. diarrheas
  - C. droopy eyelids
  - D. sleepiness
25. Which of the following is a primary prevention method for tetanus?
- A. Muscle relaxants
  - B. Vaccination with tetanus toxoid
  - C. Antibiotic therapy
  - D. Passive immunization with Tetanus Immune Globulin
26. Which of the following pathogens causes pneumonia?
- A. *Myxovirus influenzae*
  - B. *Salmonella typhi*
  - C. *Bordetella pertussis*
  - D. *Haemophilus influenzae*
27. Dysuria means \_\_\_\_\_.
- A. an increased volume of urine produced
  - B. discolored urine
  - C. presents of blood in the urine
  - D. pain during urination

28. A medium used to isolate *Legionella* sp. is\_\_\_\_\_.
- A. BCYE agar
  - B. blood agar
  - C. MacConkey agar
  - D. charcoal broth
29. Which of the following conditions aggravates fungal diseases?
- A. Heat and moisture
  - B. Cold and dry
  - C. Scorching heat
  - D. Humid and cold
30. *Treponema pallidum* is responsible for causing \_\_\_\_\_.
- A. Syphilis
  - B. Herpes
  - C. Chancroid
  - D. Gonorrhoea
31. Which of the following diseases, associated with sexual activity, is caused by yeast?
- A. Scabies
  - B. Candidiasis
  - C. Syphilis
  - D. Enterobiasis

32. Identify incorrect statement regarding multi-drug therapy in tuberculosis infection.
- A. It lengthens treatment duration
  - B. It prevents drug resistance
  - C. It reduces relapse rates
  - D. It shortens treatment duration
33. Which of the following diseases is caused by a protozoan?
- A. Gonorrhoea
  - B. Trichomoniasis
  - C. Genital Warts
  - D. Chancroid
34. Which of the following sentence is incorrect regarding tinea infections?
- A. *Tinea cruris* also known as jock itch.
  - B. *Tinea corporis* is ringworm of the body.
  - C. *Tinea barbae* is ringworm of feet (athlete's foot)
  - D. *Tinea unguium* is ringworm of the nails
35. Enterotoxins can be produced by \_\_\_\_\_.
- A. Rabies virus
  - B. *Clostridium tetani*
  - C. Norovirus
  - D. *Vibrio cholera*

36. Which of the following conditions is most likely to cause pneumonia?
- A. Sinusitis
  - B. Pharyngitis
  - C. Epiglottitis
  - D. Bronchitis
37. Food poisoning is commonly caused by \_\_\_\_\_.
- A. *Clostridium botulinum*
  - B. *Clostridium tetani*
  - C. *Clostridium perfringes*
  - D. *Clostridium butyricum*
38. Which of the following types of Hepatitis cannot be transferred by blood or sexual contact?
- A. Hepatitis D
  - B. Hepatitis A
  - C. Hepatitis B
  - D. Hepatitis C
39. A patient presents with severe watery diarrhea after returning from a trip to Mexico. Which pathogen is the most likely cause of "traveler's diarrhea"?
- A. *Escherichia coli* (ETEC strain)
  - B. *Clostridioides difficile*
  - C. *Salmonella typhi*
  - D. *Shigella dysenteriae*

40. A productive cough with rusty sputum and chest pain are signs of infection caused by \_\_\_\_\_.
- A. *Mycobacterium tuberculosis*
  - B. *Corynebacterium diptheria*
  - C. *Haemophilus influenza*
  - D. *Streptococcus pneumoniae*

**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**

Describe typhoid fever, including its causative agent, transmission, signs and symptoms, treatment, and prevention methods.

(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

- (a) Discuss how *Streptococcus viridans*, a typically non-systemic oral bacterium, can cause infective endocarditis.

In your response, explain the circumstances under which this bacterium enters the bloodstream and the conditions that allow it to cause systemic disease.

(10 marks)

- (b) Why and how do dermatophytes cause common fungal skin infections?

(10 marks)

END OF EXAMINATION PAPER

