

10.1 Infectious diseases

Name: _____ Class: _____ Date: _____ **Total: 27 marks**

KEY WORDS pathogen 病原体 • infectious disease 传染病 • cholera 霍乱 • tuberculosis 结核病
• malaria 疟疾

Objective

Build the skills to answer exam questions on **infectious diseases** — the **pathogens** 病原体 that cause cholera, malaria, TB and HIV, how they are transmitted, and how they are controlled.

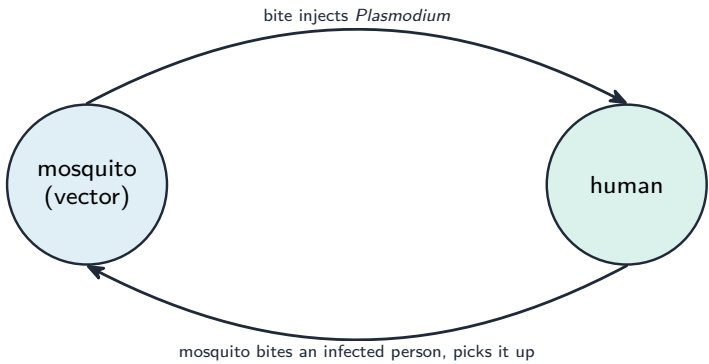
You must be able to:

- name the pathogen and type for cholera, malaria, TB and HIV/AIDS
- explain how each disease is transmitted
- discuss biological, social and economic factors in prevention and control

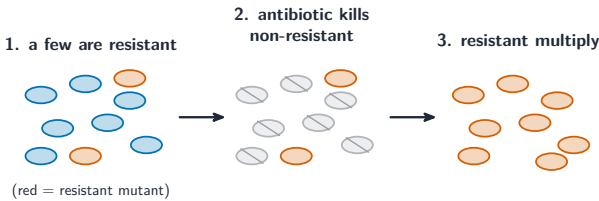
1 Worked examples

■ The four diseases

disease	pathogen (type)	transmission
cholera 霍乱	<i>Vibrio cholerae</i> (bacterium 细菌)	water/food contaminated with faeces
malaria 疟疾	<i>Plasmodium</i> (protoctist 原生生物)	bite of an infected mosquito (vector 媒介); infected blood
TB 结核 病	<i>Mycobacterium</i> (bacterium)	airborne droplets 飞沫 from coughs/sneezes
HIV/AIDS HIV (virus 病毒)		unprotected sex; infected blood; mother to baby



Malaria needs a mosquito vector — which is why control targets the mosquito



Antibiotic resistance complicates treating infectious disease

■ Prevention and control

Control has **biological**, **social** and **economic** sides. Examples: cholera — clean water and sewage treatment; malaria — nets, drain still water, insecticides, drugs; TB — find and treat with antibiotics, BCG vaccine, reduce crowding; HIV — condoms, clean needles, test blood, education (no cure/vaccine yet).

2 Practice

2.1 Name the type of pathogen that causes (a) malaria and (b) HIV/AIDS. [2]

2.2 State how tuberculosis is transmitted from person to person. [1]

3 Exam-style questions

3.1 Which disease is caused by a protoctist and spread by a vector? [1]

- | | |
|---|---|
| A | B |
| C | D |
- A** cholera
B HIV/AIDS
C malaria
D tuberculosis

3.2 Cholera is best prevented by: [1]

- | | |
|---|---|
| A | B |
| C | D |
- A** sleeping under a mosquito net
B providing clean water and treating sewage
C using condoms
D taking a long course of antibiotics

3.3 (a) Explain why providing clean drinking water reduces the spread of cholera. [2]

(b) Discuss **one** social and **one** economic factor that make malaria hard to control in some countries. [2]

3.4 A region recorded 4000 malaria cases in 2015. After a mosquito-net programme, this fell to 1500 cases in 2020.

(a) Calculate the percentage decrease in cases. [2]

(b) Explain why targeting the mosquito reduces malaria. [2]

3.5 The table gives information about four infectious diseases.

Disease	Pathogen	Type of pathogen	Main method of transmission
Cholera	<i>Vibrio cholerae</i>	protocist	
Malaria			
Tuberculosis	<i>Mycobacterium tuberculosis</i>		
HIV/AIDS		virus	

(a) Complete the table. [6]

(b) Explain why cholera is common where there is flooding or a breakdown of sanitation.[3]

(c) Explain why the malarial parasite is difficult to control by vaccination. [2]

(d) Tuberculosis is treated with a combination of antibiotics taken for at least six months. Explain why the course is so long and why more than one antibiotic is used. [3]