

Infectious Disease

Question Paper

Level	International A Level
Subject	Biology
Exam Board	CIE
Topic	Infectious Disease
Sub Topic	
Booklet	Multiple Choice
Paper Type	Question Paper

Time Allowed : 35 minutes

Score : / 29

Percentage : /100

Grade Boundaries:

A*	A	B	C	D	E	U
>85%	'77.5%	70%	62.5%	57.5%	45%	<45%

- 1 The first column in the table contains statements about disease. Columns headed 1-4 represent four different named diseases.

statements	1				
infectious disease		✓	✓	✓	
can be treated with antibiotics			✓	✓	
caused by a virus		✓			
degeneration of lung tissue	✓			✓	

key
✓ = true

What is the correct set of column headings for the table above?

	1	2	3	4
A	bronchitis	measles	TB	smallpox
B	emphysema	HIV/AIDS	cholera	TB
C	emphysema	measles	cholera	lung cancer
D	lung cancer	HIV/AIDS	measles	TB

2 How are the diseases cholera, malaria and HIV/AIDS transmitted?

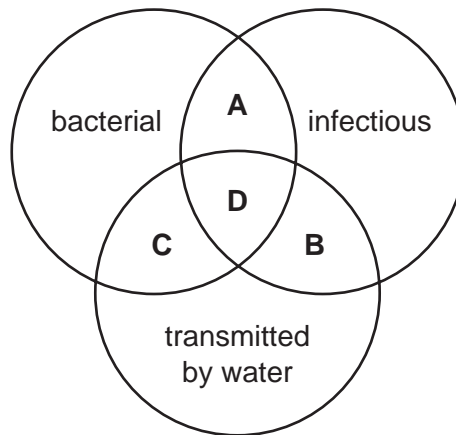
	cholera	malaria	HIV/AIDS
A	air	body fluid	insect
B	body fluid	water	air
C	insect	air	water
D	water	insect	body fluid

3 Which statement explains why people suffering from malaria and people suffering from tuberculosis can both live in northern Europe, but only tuberculosis can be passed on to other people there?

- A *Anopheles* mosquitoes only breed in sub-tropical and tropical areas.
- B Antibiotics can be used to cure people with tuberculosis.
- C Migrant workers can carry the diseases with them.
- D Tuberculosis bacteria cannot survive in sub-tropical and tropical areas.

4 The diagram refers to properties of diseases.

Which area of the diagram refers to properties that are common to **both** tuberculosis and cholera?



5 What do the causative agents of HIV/AIDS, malaria and TB have in common?

	they have a cell surface membrane	they have genes	they have ribosomes	they respire
A	✓	✓	✓	✓
B	✓	x	x	✓
C	x	✓	x	✓
D	x	✓	x	x

6 The antibiotic streptomycin is now proving to be less effective in reducing the incidence of tuberculosis (TB) worldwide.

What is the reason for this observation?

- A** Antibiotics such as streptomycin are not effective as antiviral drugs.
- B** Fewer people are living in isolated rural areas and overcrowding occurs in inner cities.
- C** The incidence of HIV infection is increasing, activating previously inactive *Mycobacterium*.
- D** There is an increase in the number of people infected with drug resistant strains.

7 A village has improved its supply of clean water, sewage treatment, insect control and milk pasteurisation.

Which disease, present in the village, will **not** be reduced by these measures?

- A** cholera
- B** HIV/AIDS
- C** malaria
- D** tuberculosis (TB)

8 What are the causative agent and method of transmission of cholera?

	causative agent	method of transmission
A	bacterium	airborne droplets
B	bacterium	water-borne
C	virus	airborne droplets
D	virus	water-borne

9 The following are all methods of transmission of infectious diseases.

- 1 droplet
- 2 food
- 3 contact
- 4 vector

Which row shows the correct organism and method of transmission of each disease?

	malaria	TB	HIV
A	bacterium 4	virus 1 and 2	virus 3 and 4
B	protocist 4	bacterium 1 and 2	virus 3
C	protocist 3	virus 1	bacterium 3
D	bacterium 3	protocist 1	bacterium 1 and 3

10 40% of the world's population live in an area where malaria is a threat to health. In recent years there have been many more cases of malaria in Africa.

What is the **social factor** that is letting the spread of malaria get out of control?

- A** an increase in drug resistant forms of malaria
- B** climate change
- C** difficulty in producing a vaccine
- D** migration of people because of wars

11 Which statements about people infected with HIV/AIDS are correct?

- 1 They can be treated and completely cured.
- 2 They may live for many years after infection.
- 3 They will have symptoms.

A 1, 2 and 3 **B** 1 and 3 only **C** 2 only **D** 3 only

12 A person who returns home after a visit to a foreign country starts to have fevers at regular intervals. Blood tests taken between the fevers and during the fevers show a decrease in the number of red blood cells (anaemia).

Which disease does this person have?

- A** cholera
- B** HIV/AIDS
- C** malaria
- D** TB

13 Why do people in refugee camps have a high risk of being infected by cholera?

- A** Drinking water is likely to be contaminated with sewage.
- B** People live in close contact, increasing the risk of droplet infection.
- C** There is a shortage of antibiotics.
- D** There is a shortage of food and water.

14 Which is correct for TB, measles and malaria?

	TB		measles		malaria	
	causative agent	transmission	causative agent	transmission	causative agent	transmission
A	bacteria	air-borne	virus	air-borne	protoctist	insect vector
B	bacteria	water-borne	protoctist	air-borne	virus	insect vector
C	virus	air-borne	bacteria	water-borne	protoctist	insect vector
D	virus	insect vector	protoctist	insect vector	bacteria	water-borne

15 What do the causative agents of HIV / AIDS, malaria and TB have in common?

	they have a cell surface membrane	they have genes	they have ribosomes	they respire	key
A	✓	✓	✓	✓	✓ present in each causative agent
B	✓	✗	✗	✓	✗ not present in each causative agent
C	✗	✓	✗	✓	
D	✗	✓	✗	✗	

16 Which row is correct?

	disease	causative agent	method of transmission	method of control
A	AIDS		intimate contact	antibiotics
B	cholera	virus	waterborne	oral rehydration therapy (ORT)
C	malaria	bacterium	insect vector	antimalarial drugs
D	tuberculosis (TB)	bacterium	airborne	vaccination

17 Scientists are concerned that avian (bird) flu caused by the H5N1 virus could infect humans and cause a pandemic.

What could help prevent humans from spreading the disease?

- 1 killing all poultry
- 2 reducing the number of air flights
- 3 taking a course of antibiotics

A 1 only **B** 2 only **C** 3 only **D** 1, 2 and 3

18 An adult human has approximately 5 dm³ of blood, which circulates about once a minute.

100 cm³ of arterial blood carries 19 cm³ of oxygen. 100 cm³ of venous blood carries 12.5 cm³ of oxygen.

What is the approximate volume in cm³ of oxygen taken up per minute in the lungs?

- A** 32.5 **B** 65 **C** 325 **D** 950

19 For some diseases, one of the most effective measures for prevention and control is tracing people who have been in contact with infected people.

For which disease would tracing the contacts of infected people help in its prevention and control?

- A** Cholera, as it can be treated successfully with carefully selected antibiotics.
B Malaria, as it is transmitted by animals, so the transmission cycle of the pathogen can be broken.
C Measles, as it can cause an epidemic and can be controlled by other methods.
D Sickle cell anaemia, as it is genetically inherited, so there is time to act before more individuals are affected.

20 Which details are correct?

	disease	method of controlling spread	treatment	causative agent
A	AIDS	use condoms during sexual intercourse	antibiotics	virus
B	cholera	water treatment	oral rehydration	bacterium
C	malaria	quinine	vaccination	protocist
D	TB	isolate patients	antibiotics	virus

- 21 The data shows how the number of an deaths caused by the bacterium *Staphylococcus aureus* has changed from 1997 to 2005.

Methicillin is an antibiotic used to treat a disease caused by *S. aureus*.
MRSA is methicillin-resistant *S. aureus*.

year	total number of death certificates with <i>S. aureus</i>	total number of death certificates with MRSA
1997	369	355
1999	452	431
2001	456	681
2003	420	890
2005	428	1512

Which statement is **not** supported by this data?

- A More people have MRSA so the disease spreads.
 - B MRSA is more likely to lead to death as there is no treatment.
 - C Resistant strains of MRSA are becoming more common.
 - D *S. aureus* will always cause humans to die.
- 22 Scientists are concerned that avian (bird) flu caused by the H5N1 virus, could infect humans and cause a pandemic.

If this occurs, which factors could help prevent humans spreading the disease?

- 1 killing all poultry
- 2 reducing all air flights
- 3 taking a course of antibiotics

- A 1 only B 2 only C 3 only D 1, 2 and 3

- 23 Which of the following are increasing the spread of malaria?
- 1 continued migration of people due to war and civil unrest
 - 2 increasing carbon dioxide levels causing global warming
 - 3 increasing resistance to antibiotics and other drugs
- A** 1 and 2 only
- B** 1 and 3 only
- C** 2 and 3 only
- D** 1, 2 and 3
-
- 24 Which statement is an example of epidemiological evidence linking smoking to lung cancer?
- A** Chemical analysis of tar from cigarettes shows that it contains carcinogens.
- B** Dogs made to inhale the smoke from cigarettes develop lung tumours.
- C** The incidence of lung cancer increases in a population as more cigarettes are smoked.
- D** When tar from cigarettes is rubbed onto the skin of mice, the mice develop skin tumours.
-
- 25 Which disease is **not** likely to be passed directly from parent to child?
- A** cholera
- B** HIV/AIDS
- C** malaria
- D** tuberculosis

26 The table shows four infectious diseases and the pathogen responsible.

Which row in the table is correct?

	disease			
	cholera	malaria	TB	AIDS
A	bacterium	bacterium	virus	protoctista
B	bacterium	protoctista	bacterium	virus
C	virus	protoctista	protoctista	virus
D	protoctista	virus	bacterium	bacterium

27 What are the causative agent and method of infection for cholera?

	causative agent	method of infection
A	bacterium	direct contact
B	bacterium	food and water
C	virus	inhalation
D	virus	faeces

28 Which disease is least likely to be passed directly from parent to child?

- A** cholera
- B** HIV/AIDS
- C** malaria
- D** sickle cell anaemia

29 What do the causative agents of HIV/AIDS, malaria and TB have in common?

	cell surface membrane	genes	ribosomes	respiration
A	✓	✓	✓	✓
B	✓	x	x	✓
C	x	✓	x	✓
D	x	✓	x	x