Diseases and immunity – 2023 June IGCSE Biology 0610

1. June/2023/Paper_0610/11/No.21

What is an example of good personal hygiene in the kitchen?

A cooking food at a high temperature

B disposing of waste food in sealed containers

C storing uncooked meat in a fridge

D washing hands before eating food

2. June/2023/Paper_0610/11/No.30

Which statements about antibiotics are correct?

1 Antibiotics can be used to treat bacterial infections.

2 Antibiotics can be used to treat viral infections.

3 Antibiotics are **not** effective against resistant bacteria.

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

3. June/2023/Paper_0610/12/No.29

The table shows which antibiotics are effective against different types of bacteria.

The shaded areas show the antibiotic is effective against that type of bacteria.

	type of bacteria			
antibiotic	MRSA	*Streptococcus*	*Pseudomonas*	*Anaerobes*
1				
2				
3				
4				
5				
6				

A person has a disease caused by a type of *Streptococcus* bacteria and a second infection caused by a type of *Pseudomonas* bacteria.

Which antibiotic should be taken?

A 1 or 6 **B** 2 or 4 **C** 3 or 4 **D** 5 or 6

4. June/2023/Paper_0610/13/No.30

Which type of organism causes AIDS?

A bacterium

B fungus

C myriapod

D virus

5. June/2023/Paper_0610/21/No.19

The cholera bacterium toxin causes dehydration and loss of salts from the blood in humans.

Which statement explains the reason for this?

A Chloride ions are secreted into the small intestine where they increase the water potential.

B Chloride ions are secreted into the small intestine which causes water to move into the intestine by osmosis.

C Chloride ions are secreted into the small intestine which causes water to move out of the intestine by osmosis.

D Chloride ions are secreted into the small intestine which causes the water potential of the blood to decrease.

6. June/2023/Paper_0610/21/No.27

What is a correct statement about antibiotics?

A Bacteria may become resistant to antibiotics as a result of artificial selection.

B Bacteria may become resistant to antibiotics as a result of natural selection.

C Viruses may become resistant to antibiotics as a result of artificial selection.

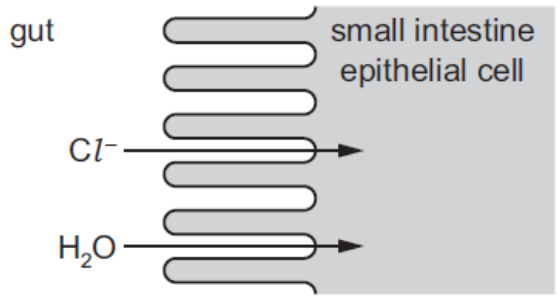
D Viruses may become resistant to antibiotics as a result of natural selection.

7. June/2023/Paper_0610/22/No.19

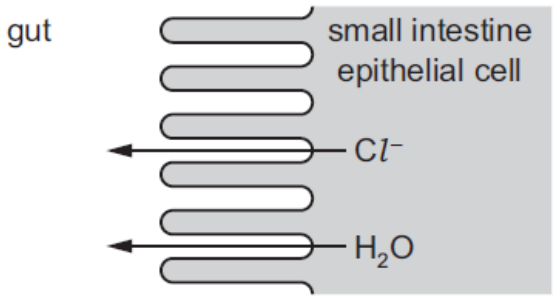
Cholera bacteria in the gut cause secretion of chloride ions which leads to diarrhoea.

Which diagram shows the correct movement of chloride ions (Cl^-) and water (H_2O)?

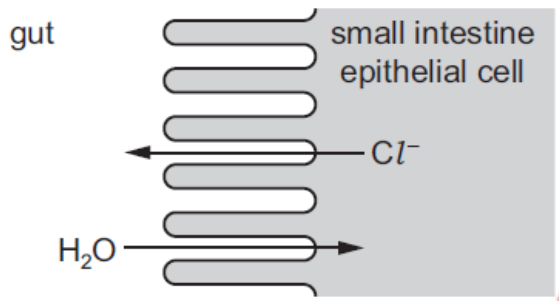
A



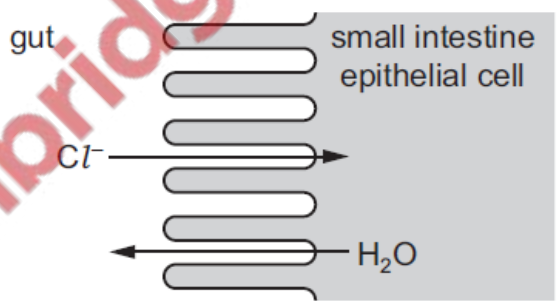
B



C



D



8. June/2023/Paper_0610/23/No.19

When a person is given a vaccine, a harmless pathogen is injected. The pathogen has .....1..... which cause lymphocytes to produce .....2..... . This is an example of .....3..... immunity.

Which words should be used to fill gaps 1, 2 and 3 to complete the sentences?

	1	2	3
A	antigens	antibodies	active
B	antigens	antibodies	passive
C	antibodies	antigens	active
D	antibodies	antigens	passive

(a) Antibiotic resistance is an increasing problem worldwide.

Erythromycin is an antibiotic.

Fig. 3.1 shows the daily doses of erythromycin per 1000 people over a 13-year period.

The number of bacterial infections resistant to erythromycin per 1000 people is also shown.

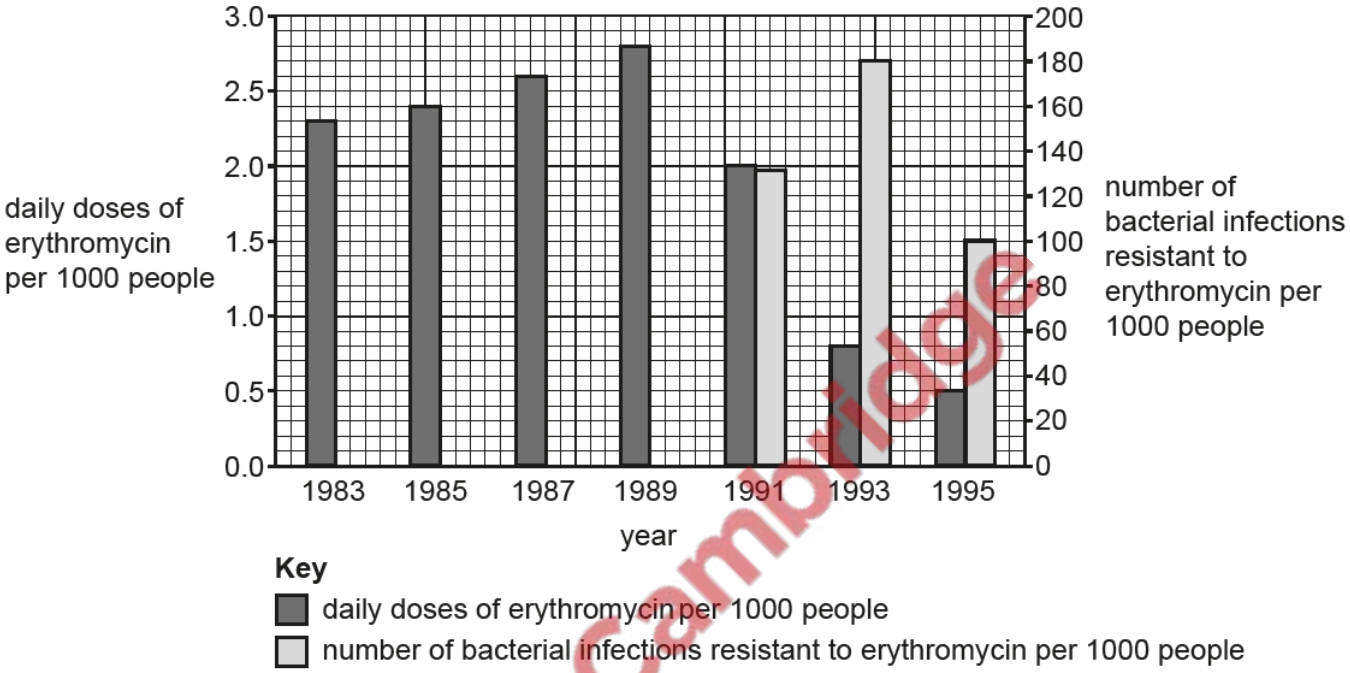


Fig. 3.1

(i) Calculate the percentage change in the number of bacterial infections resistant to erythromycin per 1000 people between 1993 and 1995.

Give your answer to **two** significant figures.

Space for working.

.....%

[3]

(ii) Describe the data shown in Fig. 3.1.

.....

.....

.....

.....

.....

.....

..... [3]

(iii) Suggest reasons for the change in the number of bacterial infections resistant to erythromycin from 1993 to 1995 shown in Fig. 3.1.

.....

.....

.....

.....

..... [2]

(iv) Explain how bacteria become resistant to antibiotics.

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [5]

10. March/2023/Paper_ 0610/12/No.21

What is defined as a disease-causing organism?

A bacterium

B pathogen

C phagocyte

D virus

11. March/2023/Paper_ 0610/12/No.29

Which row shows why only some infections can be successfully treated with antibiotics?

	antibiotics kill		
	bacteria	resistant bacteria	viruses
A	yes	yes	no
B	no	no	yes
C	yes	no	no
D	no	yes	yes

12. March/2023/Paper_ 0610/22/No.19

The sequence of amino acids in antibodies enables them to complete which function?

A bind to a specific antigen

B bind to all pathogens

C perform phagocytosis

D confer passive immunity for all diseases

13. March/2023/Paper_ 0610/22/No.27

Why is an MRSA infection difficult to treat?

A MRSA is a bacterium.

B MRSA is a virus.

C MRSA is resistant to some antibiotics.

D MRSA is resistant to some antibodies.

14. March/2023/Paper_ 0610/32/No.1

(a) The nutrient content of five different foods was analysed.

The mass of each nutrient per 100 g of food was estimated.

Table 1.1 shows the results.

Table 1.1

	mass of nutrient per 100 g of food / g			
food	carbohydrates	fats	protein	fibre
A	12	1	5	6
B	23	8	14	2
C	0	36	25	0
D	7	54	28	7
E	21	7	5	8

The recommended daily allowance for these nutrients for an adult is:

- fat – a maximum of 70 g per day
- protein – 50 g per day.

(i) Identify the food in Table 1.1 which contains the most carbohydrate per 100 g.

..... [1]

(ii) A person eats 200 g of each food.

Using the information in Table 1.1, identify the **two** foods that would provide **more** than the recommended daily allowance of fat.

..... and .....

[2]

(iii) Using the information in Table 1.1, calculate the number of grams of food **C** needed to provide the recommended daily allowance of protein.

..... g [1]

(iv) State **two** groups of nutrients missing from Table 1.1 that are needed as part of a balanced diet.

1 .....

2 .....

[2]

(v) Explain why food **E** is recommended as part of a balanced diet.

.....

.....

.....

.....

.....

.....

..... [3]

(b) Most foods contain some carbohydrates.

State the names of the chemical elements contained in carbohydrates.

..... [1]

(c) Starch is a type of carbohydrate.

Circle the names of **two** other carbohydrates from the list.

amino acids	**amylase**	**cellulose**	**ethanol**
glycogen	**oil**	**protein**	**urea**

[2]

[Total: 12]