

14 Which statements are correct descriptions of methods of preventing pathogens from entering the body?

1 Fibrin is converted to fibrinogen to form a mesh.

2 Phagocytes produce antibodies.

3 Platelets clot blood.

4 Lymphocytes engulf pathogens.

A 1, 3 and 4

B 1 and 3 only

C 2 and 4

D 3 only

26 What can antibiotics treat?

A all diseases caused by pathogens

B cholera

C HIV (human immunodeficiency virus)

D rickets

26 Which statement describes the effect of antibiotics?

A Antibiotics do **not** affect bacteria or viruses.

B Antibiotics kill bacteria but do **not** affect viruses.

C Antibiotics kill both bacteria and viruses.

D Antibiotics kill viruses but do **not** affect bacteria.

17 Which row shows the effects of cholera on the human body?

	movement of chloride ions	effect of a build-up of chloride ions on water potential	effect on volume of water leaving the body through the anus
A	into blood	decreases	increases
B	into blood	increases	decreases
C	into small intestine	decreases	increases
D	into small intestine	increases	decreases

2 Fig. 2.1 is a photomicrograph of human blood.

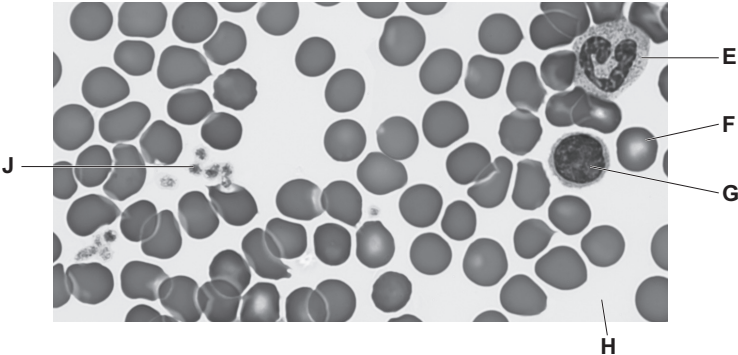


Fig. 2.1

(a) Use the information in Fig. 2.1 to complete Table 2.1.

Table. 2.1

component of blood	letter from Fig. 2.1	function
red blood cell		
		production of antibodies
	H	
		phagocytosis
platelet	J	

(b) Some diseases are transmissible.

(i) State the name of a pathogen that is transmitted by direct contact with blood.

..... [1]

(ii) State **two** ways that a pathogen can be transmitted **indirectly**.

1

2

[2]

(c) Describe the role of antibodies in the defence against pathogens.

.....

 [3]

(d) Explain how active immunity differs from passive immunity.

.....

 [3]

[Total: 14]

5 Penicillin is an antibiotic.

(a) (i) State the type of organism that antibiotics are used to kill.

..... [1]

(ii) It is important to try and limit the development of antibiotic resistance.

Describe ways of limiting the development of antibiotic resistance.

.....

 [2]

(b) Penicillin is produced by an organism called *Penicillium chrysogenum*.

Fig. 5.1 is a diagram of *Penicillium chrysogenum*.

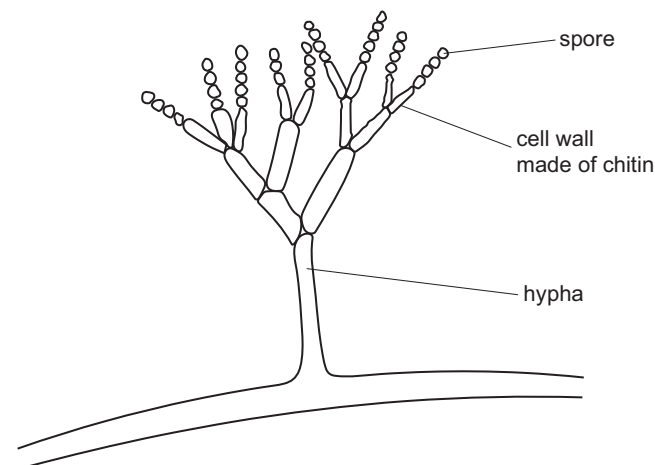


Fig. 5.1

(i) State what *Penicillium* in the scientific name of *Penicillium chrysogenum* represents in the binomial system.

..... [1]

(ii) Using the information in Fig. 5.1, identify the kingdom that contains *Penicillium chrysogenum*.

..... [1]

(c) Penicillin can be made in a fermenter.

(i) State the name of **one other** product made in a fermenter.

..... [1]

Fig. 5.2 shows a fermenter.

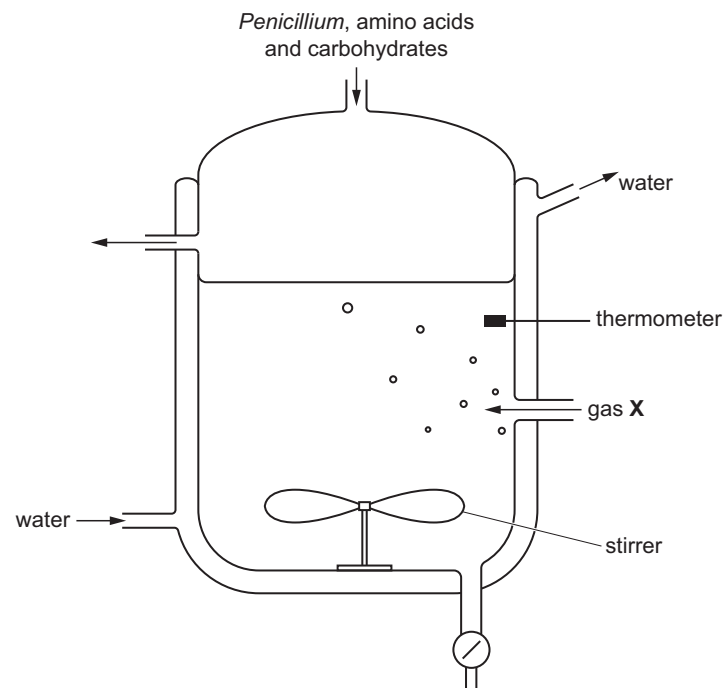


Fig. 5.2

(ii) Gas X in Fig. 5.2 is needed for the production of penicillin.

State the name of gas X.

..... [1]

(iii) The concentration of gas X is one of the conditions that must be controlled to ensure that penicillin is produced.

State the **other** conditions required to produce penicillin **and** describe how they are controlled in the fermenter.

.....

 [5]

(d) State the name of the organism that is used in bread-making **and** in biofuel production.

..... [1]

[Total: 13]

24 What is the reason why antibiotics should be used **only** when essential?

- A It increases the artificial selection of antibiotic resistant bacteria.
- B It increases the natural selection of antibiotic resistant bacteria.
- C It reduces the artificial selection of antibiotic resistant bacteria.
- D It reduces the natural selection of antibiotic resistant bacteria.