

Drugs practice questions

7 questions • 18 marks • mark scheme at the back

For Cambridge IGCSE Combined Science 0653. **Supplement** is Extended content, only examined on Papers 2 and 4.

Name

Total / 18

1 Which statement describes a drug? [1 mark]

- A. ☐ A substance that provides energy for respiration
- B. ☐ Any substance taken into the body that modifies or affects chemical reactions in the body
- C. ☐ A substance that kills all microorganisms outside the body
- D. ☐ Any substance made by the body to fight disease

2 A patient has influenza, which is caused by a virus. Why would a doctor not prescribe an antibiotic? [1 mark]

- A. ☐ Antibiotics do not affect viruses
- B. ☐ Antibiotics kill only fungi
- C. ☐ Viruses are too small to be seen
- D. ☐ Antibiotics cause influenza to spread

3 Penicillin is an antibiotic. (a) State the type of infection that penicillin is used to treat. [1] (b) [3 marks] State what penicillin does to the pathogen. [1] (c) State one type of pathogen that penicillin does not affect. [1]

4 A doctor treats a patient with an antibiotic, but the infection does not improve. Suggest [2 marks] what has happened to the bacteria.

- 5** A student says: 'Antibiotics are drugs that cure all infections.' (a) State why the statement is incorrect for infections caused by viruses. [1] (b) Describe what is meant by the term drug. [2] (c) State what is meant by bacteria being resistant to an antibiotic. [1] **[4 marks]**

- 6** **Supplement** **[2 marks]**
MRSA is a bacterium that is resistant to many antibiotics. Explain why a doctor should prescribe an antibiotic only when it is essential.

- 7** **Supplement** **[5 marks]**
A population of bacteria contains a few resistant bacteria. A patient is treated with an antibiotic many times, including for minor infections. (a) Explain how the repeated use of the antibiotic increases the number of resistant bacteria. [4] (b) Suggest one way to reduce the spread of resistant bacteria. [1]

Mark scheme

One mark for each point unless a maximum is given. Words in brackets are not needed for the mark.

1. [1]

B B (1)

2. [1]

A A (1)

3. [3]

- (a) bacterial (infection) (1)
- (b) kills (the) bacteria (1) allow kills the pathogen
- (c) viruses (1)

4. [2]

- the bacteria are resistant to the antibiotic (1)
- so the antibiotic does not kill them / is less effective (1) reject 'the patient is resistant / immune'

5. [4]

- (a) antibiotics do not affect / kill viruses (1)
- (b) (any) substance taken into the body (1)
- that modifies or affects chemical reactions in the body (1)
- (c) the antibiotic does not kill the bacteria / is less effective against them (1) reject 'the person is resistant'

6. [2] **Supplement**

- (using antibiotics less gives) fewer chances for resistant bacteria to survive and reproduce (1)
- so resistant bacteria such as MRSA are less likely to develop / spread, or antibiotics stay effective (1) reject 'the body becomes resistant'

7. [5] **Supplement**

- (a) resistance arose by mutation (1)
- the antibiotic kills the non-resistant bacteria (1)
- the resistant bacteria are not killed / survive (1)
- the resistant bacteria reproduce (1)
- and pass on the resistance, so the number of resistant bacteria rises (1)
- Max 4 for (a)
- (b) use antibiotics only when essential / not for viral or minor infections (1)