

Past-paper walk-through

Food supply ■ 20.1

eXercise

Questions in this set

- 0610/21 N25 Q38 ■ 1 mark
- 0610/22 N25 Q38 ■ 1 mark
- 0610/42 N25 Q5 ■ 13 marks
- 0610/22 J25 Q39 ■ 1 mark
- 0610/23 J25 Q39 ■ 1 mark

Reading the mark scheme

- **B1** a mark that stands on its own – the point is either made or not.
- **M1** a *method* mark: the right approach, even if the number is wrong.
- **A1** an *answer* mark, and it usually needs its M mark first.
- **C1** a working mark on the way to the answer.
- **//** separates answers the examiner accepts equally.
- **ecf** = error carried forward: a later part is marked on your own earlier answer.
- **owtte** = “or words to that effect” – the wording need not match.

Question 38

0610/21 N25 ■ Q38 ■ 1 mark

38 What are reasons for using chemical fertilisers in food production?

	to reduce the use of herbicides	to increase crop yields	to reduce competition between crops and weeds
A	yes	yes	yes
B	no	yes	no
C	yes	no	no
D	no	no	yes

Question 38

Solution 38

Answer: **B**

Why

- Fertilisers supply the mineral ions a crop needs, so they increase the yield.
- They do nothing about weeds – weeds take up the extra nutrients too.
- Herbicides are what reduce competition from weeds, so only the yield reason is valid.

Question 38

0610/22 N25 ■ Q38 ■ 1 mark

38 What is an **advantage** of large scale monocultures?

- A** increased biodiversity
- B** increased crop yield
- C** increased susceptibility to disease
- D** increased variation in the crop plant

Solution 38

Answer: **B**

Why

- A monoculture grows one crop over a large area, so it can be sown and harvested by machine.
- That makes it efficient and gives a high yield.
- The disadvantages are the *opposite* of the other options – less biodiversity and more disease risk.

Question 5

0610/42 N25 ■ Q5 ■ 13 marks

-
- 5** (a) Discuss the advantages of intensive livestock production.

Question 5

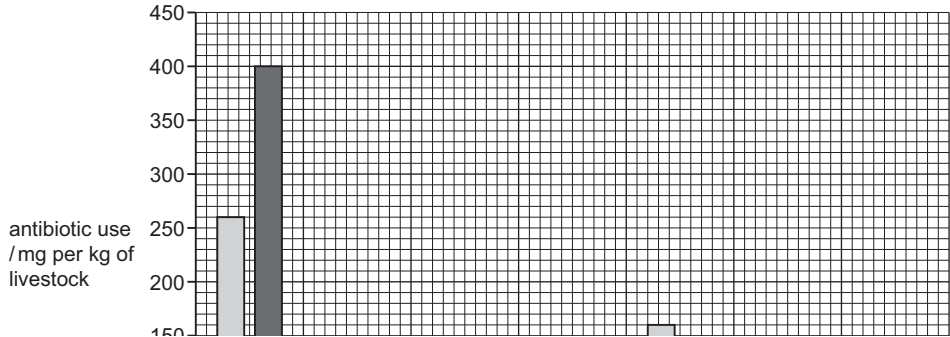
- (b)** One disadvantage of intensive livestock production is that antibiotics are often used.

Suggest why antibiotics are needed in intensive livestock production.

Question 5

- (c) Fig. 5.1 shows the changes in antibiotic use in livestock production in seven countries between 2010 and 2016.

The suggested limit for antibiotic use in livestock is 50 mg per kg of livestock.



Question 5

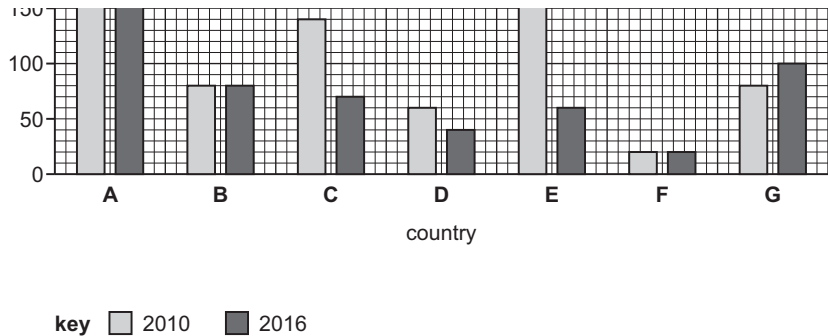


Fig. 5.1

- (i) State the letters of the countries in Fig. 5.1 that used less than the suggested limit of 50 mg of antibiotics per kg of livestock in 2016.

Question 5

Question 5

- (ii) Calculate the percentage increase in antibiotic use in country **A** in Fig. 5.1 between 2010 and 2016.

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

Space for working.

Question 5

- (iii) Explain the development of antibiotic resistance in bacteria.

Question 5

[Total: 13]

Solution 5

(a) Mark scheme

- any three from:
 - 1
 - less land required / AW, (than extensive farming) ;
 - 2
 - (so) fewer trees cut down / less deforestation ;
 - 3
 - more land available for named use ;
 - 4

Solution 5

- improved yield ;
- 5
- more efficient named farming practice ;
- 6
- cheaper (named), products / food / meat / milk ;
- 7
- idea of consistent, quality / growth, of product ;
- 8
- increased food security ;
- 9

Solution 5

- (increased) profits (for farmer) ;
- 10 AVP ;
- 3

Solution 5

(b)

Mark scheme

- any two from:
- treat / prevent, (spread of) bacterial, disease / infection ;
- caused by close proximity / overcrowding / AW ;
- AVP ;
- 2

Solution 5

(c)(i)

Mark scheme

- D and F ;
- 1 A in either order

Solution 5

(c)(ii) Mark scheme

- 54 ;;;
- 3 MP1 correct readings from the graph
- i.e. 400 and 260
- MP2 correct calculation to any number
- of significant figures
- e.g. $(140 \div 260) \times 100 = 53.846$
- MP3 correct rounding to two significant
- figures

Solution 5

- ecf from previous MP
- 0610/42
- October/November 2025
- Guidance

Solution 5

(c)(iii) Mark scheme

- any four from:
- 1
- ref. to (resistance due to) mutation ;
- 2
- antibiotics kill non-resistant bacteria / resistant bacteria survive ;
- 3
- (resistant bacteria / bacteria that survive the antibiotic) reproduce ;
- 4

Solution 5

- passing on alleles (for resistance) ;
- 5
- idea that over time this increases, the proportion of population of bacteria
- that is resistant / frequency of resistant allele ;
- 6
- ref. to natural selection ;
- 7
- AVP ;
- 4
- Guidance

Question 39

0610/22 J25 ■ Q39 ■ 1 mark

- 39** When managing fish stocks as a **sustainable resource**, what is a reason for harvesting only the larger fish of a particular species?
- A** Larger fish are easier to harvest.
 - B** Larger fish sell at a higher price.
 - C** Smaller fish are eaten by predators.
 - D** Smaller fish are too young to breed.

Solution 39

Answer: **D**

Why

- Larger fish are the mature adults that have already had a chance to breed.
- Leaving the smaller, younger fish lets them grow and reproduce first.
- That keeps the breeding population going, which is what makes the harvest sustainable.

Question 39

0610/23 J25 ■ Q39 ■ 1 mark

- 39** What is a **disadvantage** of large-scale monocultures of crop plants?
- A** a decrease in use of insecticides
 - B** a decrease in fossil fuel emissions
 - C** an increase in biodiversity
 - D** an increase in risk of disease destroying the entire crop

Solution 39

Answer: **D**

Why

- A monoculture is a single species grown over a large area.
- One crop supports far fewer other species, so biodiversity *falls*.
- It also encourages pests, so more insecticide is needed rather than less.