



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

AGRICULTURE

0600/01

Paper 1 Multiple Choice

October/November 2011

45 minutes

Additional Materials: Multiple Choice Answer Sheet
Soft clean eraser
Soft pencil (type B or HB is recommended)

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*

READ THESE INSTRUCTIONS FIRST

Write in soft pencil.

Do not use staples, paper clips, highlighters, glue or correction fluid.

Write your name, Centre number and candidate number on the Answer Sheet in the spaces provided unless this has been done for you.

There are **forty** questions on this paper. Answer **all** questions. For each question there are four possible answers **A, B, C** and **D**.

Choose the **one** you consider correct and record your choice in **soft pencil** on the separate Answer Sheet.

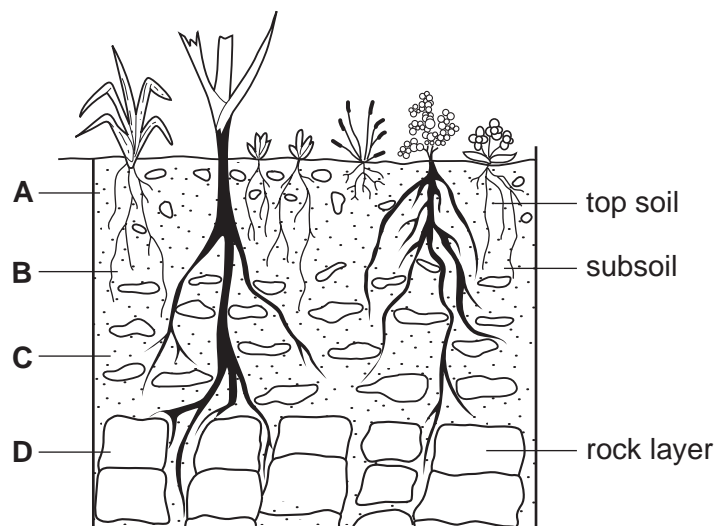
Read the instructions on the Answer Sheet very carefully.

Each correct answer will score one mark. A mark will not be deducted for a wrong answer.
Any rough working should be done in this booklet.

This document consists of **16** printed pages.



- 1 Which form of land use contributes most to world trade in food crops?
- A enclosed grazing land
 - B settled arable land
 - C shifting cultivation
 - D unenclosed grazing land
- 2 Which form of cultivation needs the most chemical fertiliser?
- A crop rotation
 - B mixed farming
 - C monoculture
 - D organic farming
- 3 If a sample of soil is shaken up in a jar of water and left to settle, what will form the bottom layer?
- A clay
 - B humus
 - C sand
 - D silt
- 4 The diagram shows a soil profile.
- Where would most microorganisms be found?



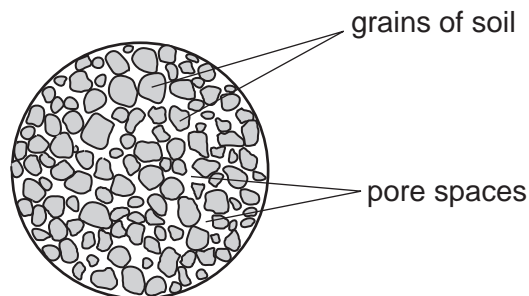
3

- 5 The chart compares soil indicator colours and pH values.

| | | | | |
|------------------|--------|--------|-------------|------------|
| indicator colour | orange | yellow | light green | dark green |
| pH value | 5 | 6 | 7 | 8 |

Which indicator colour would show an alkaline soil?

- A dark green
 - B light green
 - C orange
 - D yellow
- 6 The diagram shows a sample of soil under a microscope.



In a waterlogged soil, the pore spaces are filled with water.

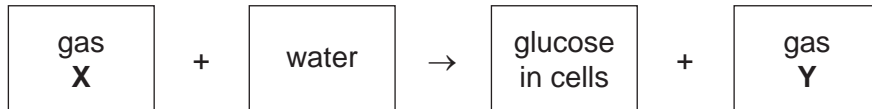
What effect might this have on the plant?

- A It reduces anchorage by the plant roots.
 - B It reduces photosynthesis in leaves.
 - C It reduces respiration in plant roots.
 - D It reduces water uptake by osmosis.
- 7 Which process transports sucrose from the leaf to other parts of the plant?
- A evaporation
 - B respiration
 - C translocation
 - D transpiration

8 What is the function of the stomata in the leaf of a plant?

- A absorption of minerals
- B absorption of water
- C gaseous exchange
- D prevention of infection

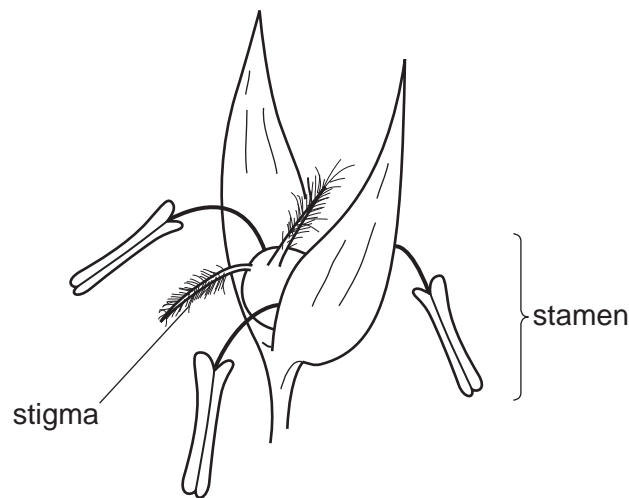
9 The diagram shows an incomplete word equation for photosynthesis.



What are **X** and **Y**?

| | X | Y |
|----------|----------------|----------------|
| A | carbon dioxide | carbon dioxide |
| B | carbon dioxide | oxygen |
| C | oxygen | carbon dioxide |
| D | oxygen | oxygen |

10 The diagram shows a wind-pollinated flower.



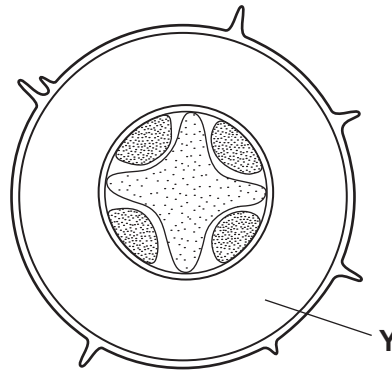
Maize is wind-pollinated but its flowers differ from that shown.

How do they differ?

- A Female parts are outside the flowers, male parts inside.
- B Male and female parts are found in different flowers.
- C Male and female parts are found on different plants.
- D The number of stamens in each flower is more than three.

5

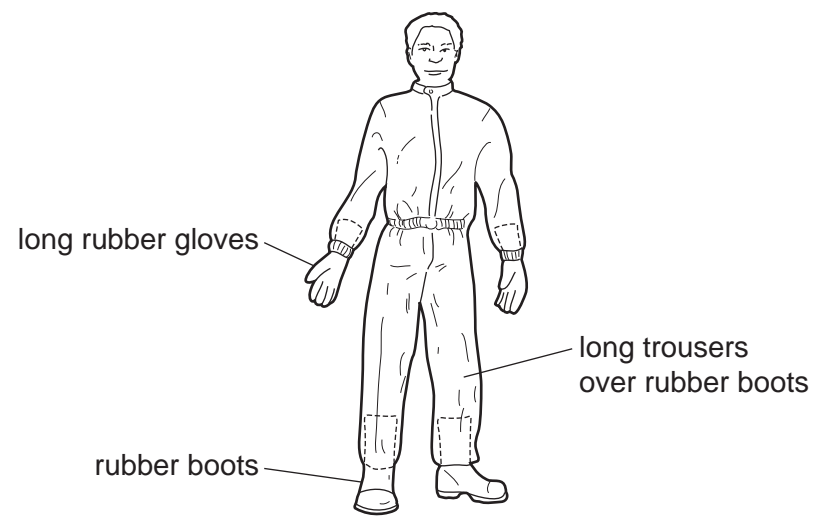
11 The diagram shows the cross-section of a root.



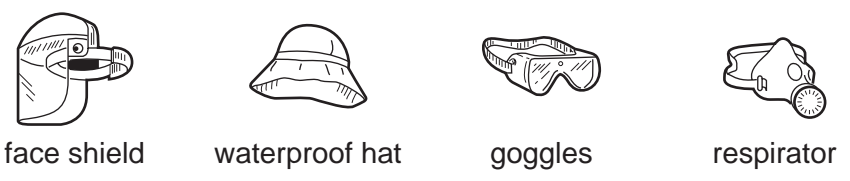
What is tissue Y?

- A cortex
 - B phloem
 - C pith
 - D xylem
- 12 What causes cereal crops to grow rapidly and then fall over?
- A high pH
 - B poor drainage
 - C too little potash fertiliser
 - D too much nitrogen fertiliser
- 13 What is meant by *seed rate*?
- A the amount of seed that germinates
 - B the depth at which seed is sown
 - C the quantity of seed sown over a given area
 - D the time taken for the seed to germinate
- 14 Which grain condition indicates that a cereal crop is mature and ready for harvesting?
- A green
 - B hard
 - C milky
 - D soft

- 15 What may be controlled by spraying a crop with a systemic insecticide?
- A broad-leaved weeds
 - B fungal disease
 - C grass weeds
 - D viral disease
- 16 What would control nematodes (eelworms)?
- A contact insecticide
 - B crop rotation
 - C pesticide bait
 - D systemic fungicide
- 17 The diagram shows the protective clothes worn when using pesticides.

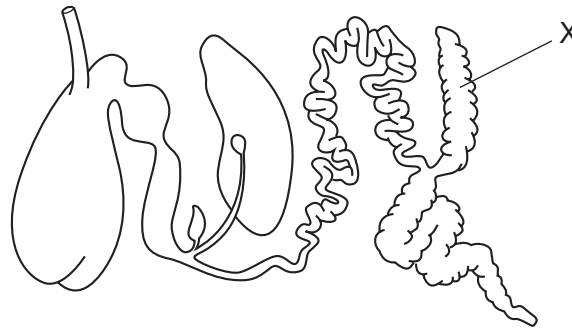


What else should be worn when mixing very toxic fluids?



- A face shield and waterproof hat
- B goggles and respirator
- C goggles and waterproof hat
- D waterproof hat and respirator

18 The diagram shows the digestive system of an animal.

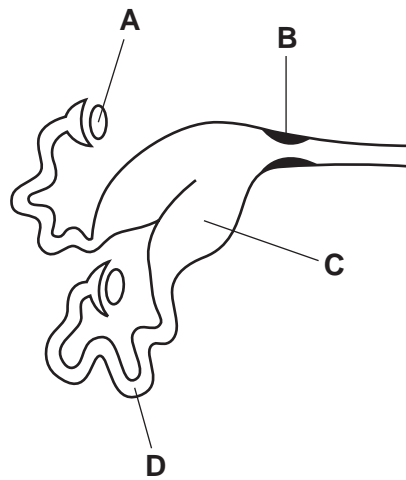


What is the part labelled X?

- A caecum
- B colon
- C duodenum
- D ileum

19 The diagram shows the internal reproductive organs of a female farm animal.

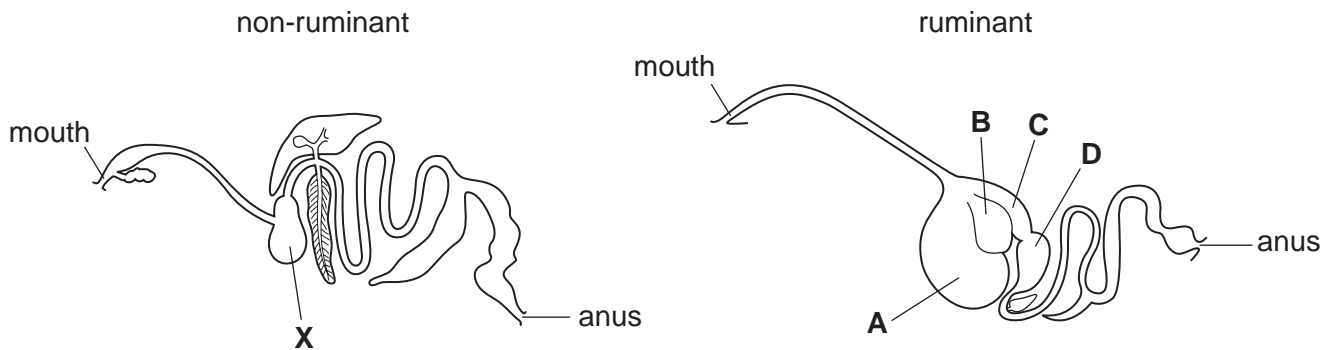
Where is the ovum fertilised by a sperm?



20 The diagrams show the digestive systems of a non-ruminant and a ruminant.

In the non-ruminant, structure **X** carries out an important function.

Which structure carries out the same function in the ruminant?



21 What is a gestation period?

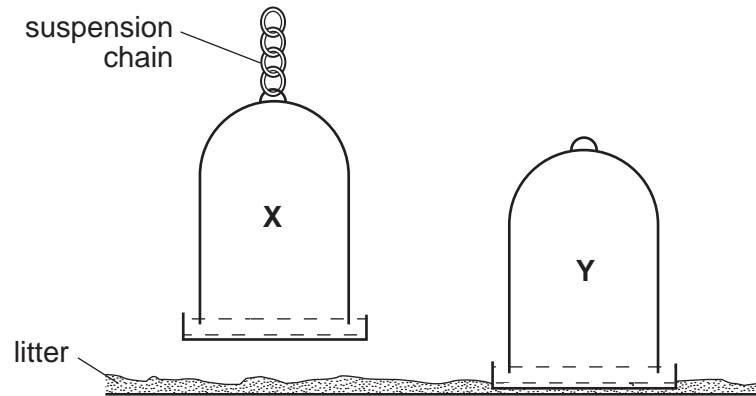
- A the length of time between mating and fertilisation
- B the length of time from birth to sexual maturity
- C the length of time from conception to birth
- D the length of time of the oestrous cycle

22 A veterinary officer is called to inspect a sick animal.

Which symptom would **confirm** the presence of an infection?

- A dull eyes
- B high temperature
- C pale yellow urine
- D rough coat

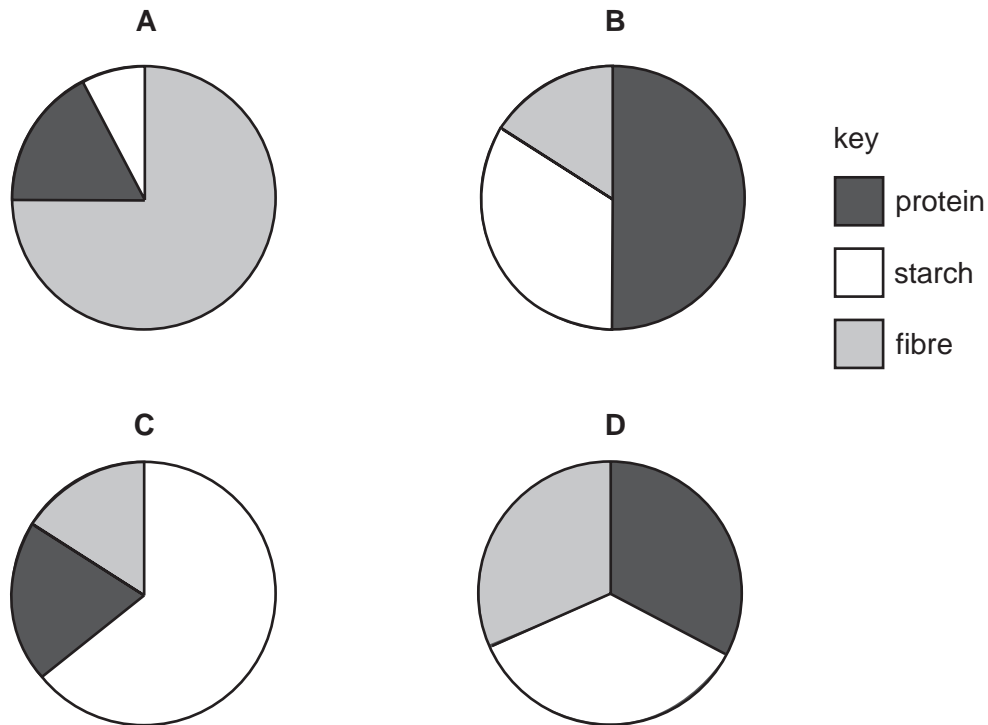
23 The diagram shows two water drinkers, **X** and **Y**, in a poultry deep litter house.



Why is **X** in a better position than **Y**?

- A Chickens cannot perch on **X**.
 - B Filling the drinker is easier.
 - C It is easier for chickens to drink.
 - D Litter is less likely to contaminate the water.
- 24 A daily feed ration is 6 kg hay and 3 kg cereals.
- For which type of farm animal is this suitable?
- A chicken
 - B cow
 - C pig
 - D rabbit
- 25 Which animal would need to be fed a concentrate high in protein?
- A a castrated young male
 - B a mature old male
 - C an infertile old female
 - D a pregnant young female

26 Which pie chart represents the diet of a grazing ruminant?



27 Coat colour in rabbits is controlled by a pair of alleles. Black is dominant to brown.

If two heterozygous animals mate, what will be the predicted ratio of their offspring?

- A** 1 black : 1 brown
- B** 1 black : 3 brown
- C** 3 black : 1 brown
- D** 4 black : 0 brown

28 Which structure is the smallest?

- A** cell
- B** chromosome
- C** gene
- D** nucleus

29 What is the correct order of operations needed to improve an area of wet, neglected grassland?

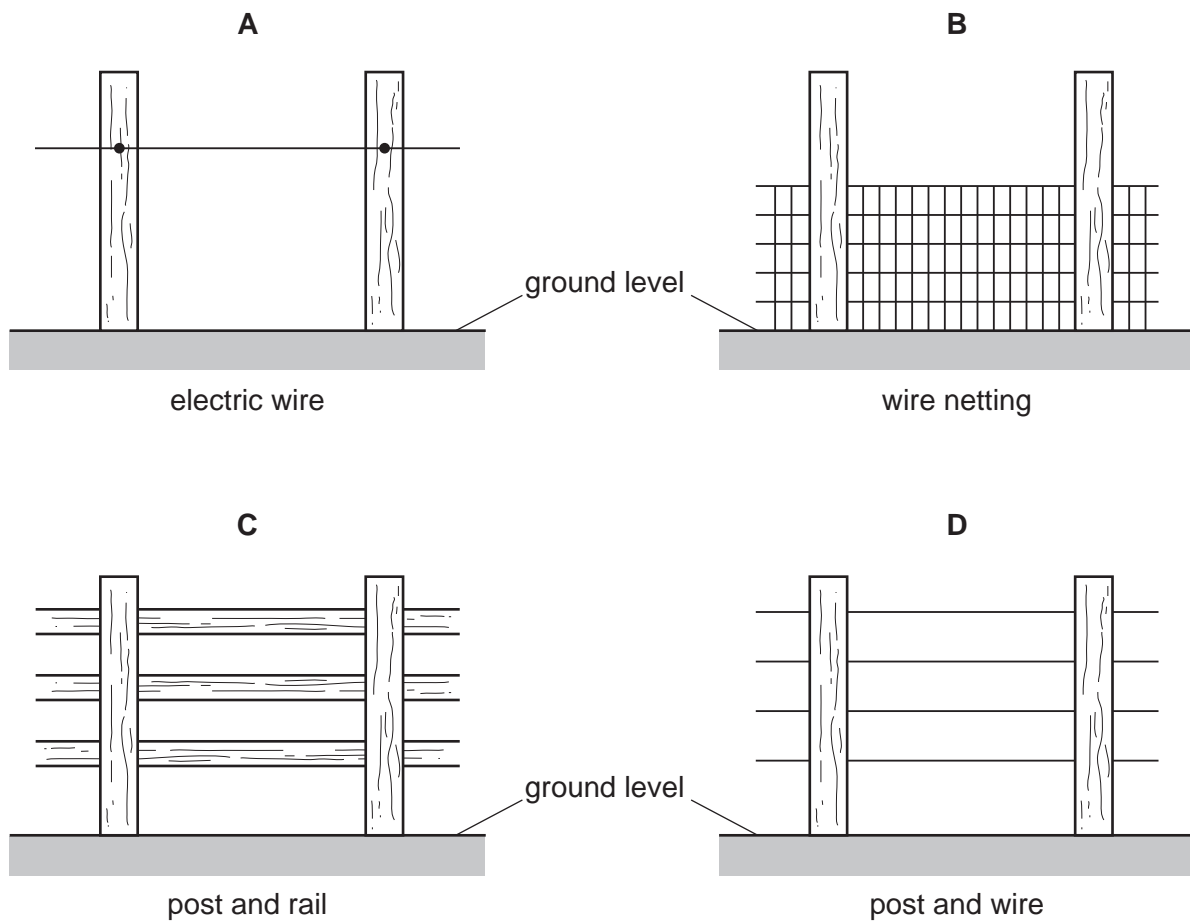
- A** add manure → add lime → drain
- B** add manure → drain → add lime
- C** drain → add lime → add manure
- D** drain → add manure → add lime

30 Which paddock has the highest stocking rate?

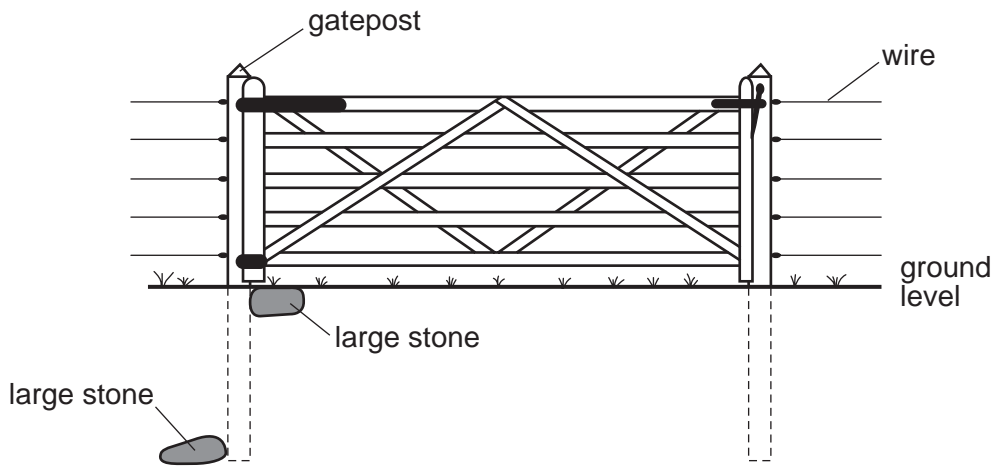
| paddock | number of hectares | number of animals |
|----------|--------------------|-------------------|
| A | 10 | 5 |
| B | 10 | 10 |
| C | 20 | 5 |
| D | 20 | 10 |

31 The diagrams show four types of fence used to keep in livestock.

Which fence requires the most frequent inspection?



32 The diagram shows a gate.

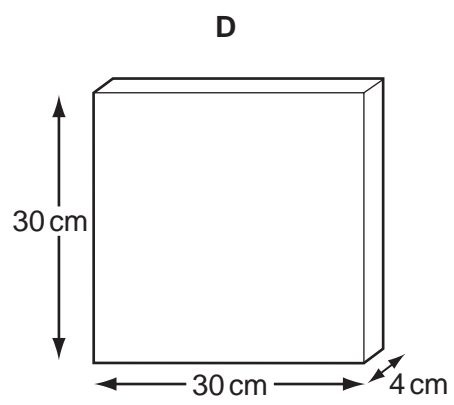
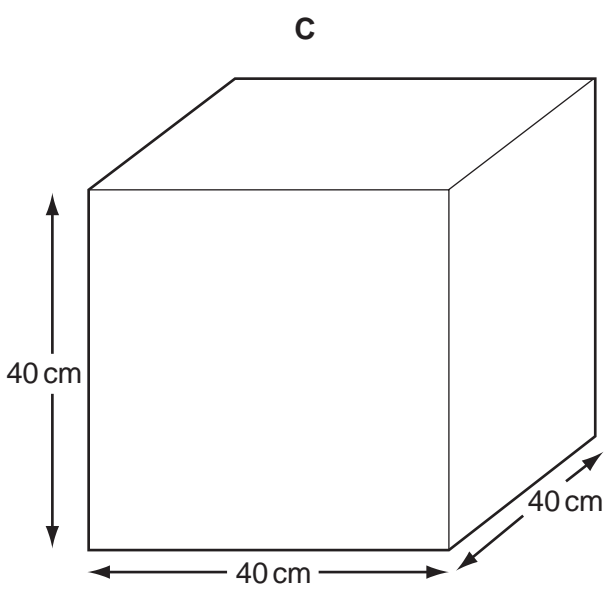
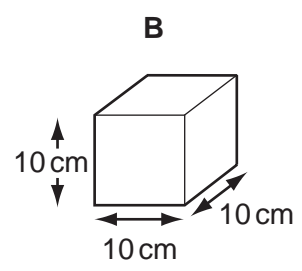
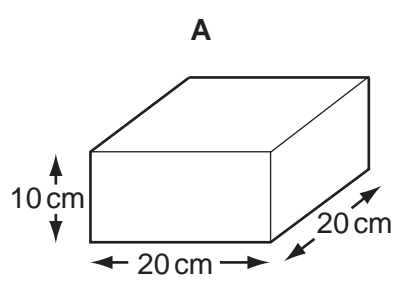


What is the reason for burying the two large stones near the gate post?

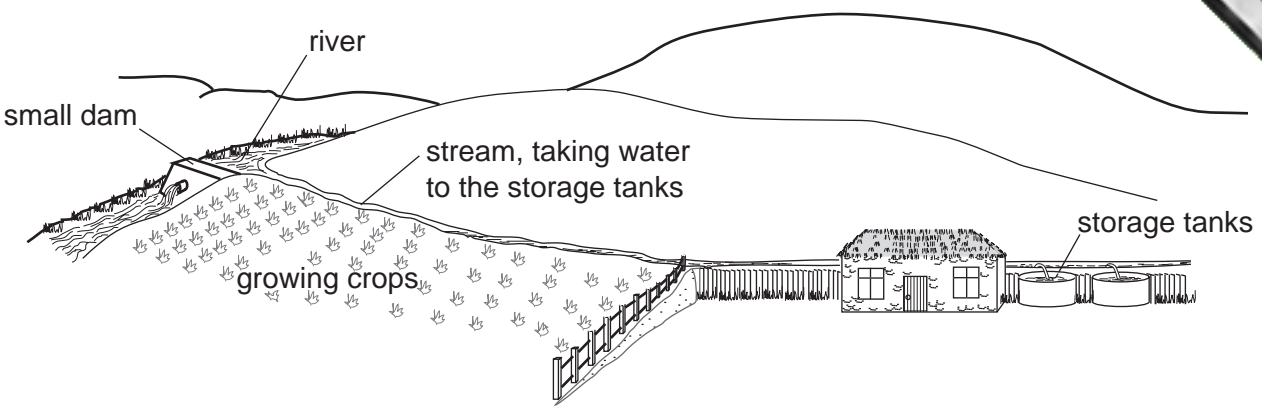
- A to increase drainage at the gate post
 - B to increase tension in the wire
 - C to stop termites eating the gate post
 - D to stop the gate dropping
- 33 Why should the concrete floor in a livestock building have a rough surface?
- A to improve drainage
 - B to make cleaning more efficient
 - C to prevent animals slipping
 - D to reduce wear

34 Earth bricks need to dry out without weakening their structure and be of suitable dimensions for wall building.

Which shape best suits these purposes?



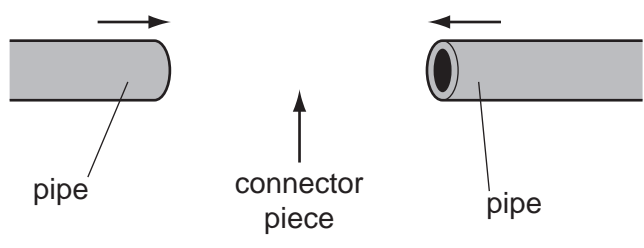
35 The diagram shows water being taken from a small dam on a river to be stored in one of the storage tanks on a farm.



For which use would this water **not** be suitable without further treatment?

- A consumption by farm animals
- B consumption by the farmer's family
- C irrigation of crops
- D washing out animal housing

36 Plastic pipes can be joined by inserting connector pieces.



Which connector piece would provide the most secure joint without reducing the rate of flow?

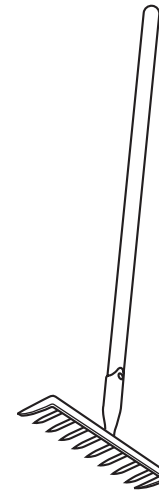
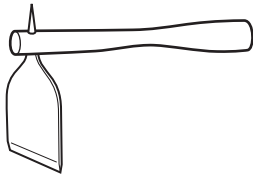
- A
- B
- C
- D

37 The diagram shows three tools used to cultivate a small area of land used for growing vegetables.

X

Y

Z



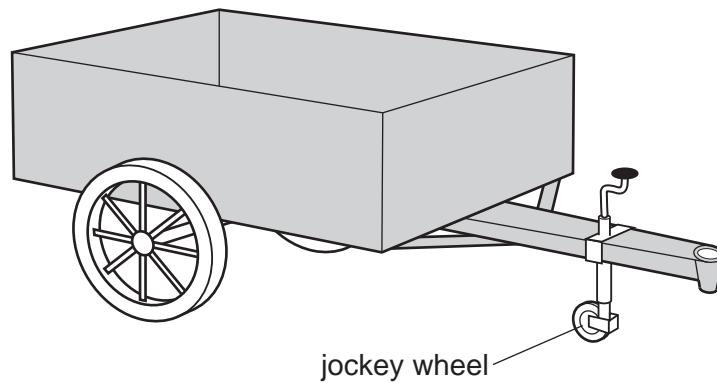
What is the purpose of each tool?

| | cutting down large weeds | digging hard soil and breaking clods | levelling and creating a fine tilth |
|----------|--------------------------|--------------------------------------|-------------------------------------|
| A | X | Y | Z |
| B | X | Z | Y |
| C | Y | X | Z |
| D | Y | Z | X |

38 When using a hand-held sprayer, what can be done to reduce 'spray drift'?

- A Apply a fine spray.
- B Apply spray quickly.
- C Apply spray under high pressure.
- D Apply spray under low pressure.

- 39 The diagram shows a farm trailer with a jockey wheel that can be lowered or raised.



What is the purpose of the jockey wheel on this trailer?

- A It allows more weight to be carried in the front of the trailer.
 - B It allows the trailer to be towed more quickly.
 - C It helps the trailer to brake when it is stopping.
 - D It is used to stop the trailer from tipping forward when unhitched.
- 40 The table shows the records a farmer kept of four crops of wheat.

For which crop was it possible to calculate a profit?

| | date of sowing | seed rate kg per ha | date of fertiliser application | amount of fertiliser kg per ha | date of harvesting | yield tonnes per ha |
|----------|----------------|---------------------|--------------------------------|--------------------------------|--------------------|---------------------|
| A | 4 January | — | 1 January | 300 | 25 August | 5.0 |
| B | 7 January | 140 | — | 325 | — | 4.5 |
| C | — | 135 | 1 January | 375 | 8 September | — |
| D | 8 January | 150 | 2 January | — | 10 September | 4.0 |