

16. Reproduction

16.1 Asexual reproduction

Paper 1 and 2

Question Paper

Paper 1

Questions are applicable for both core and extended candidates

1 Which statement describes asexual reproduction?

- A** the production of genetically different offspring from one parent
- B** the production of genetically different offspring from two parents
- C** the production of genetically identical offspring from one parent
- D** the production of genetically identical offspring from two parents

2 A gardener wants to grow some new plants that are identical to plants that she already has.

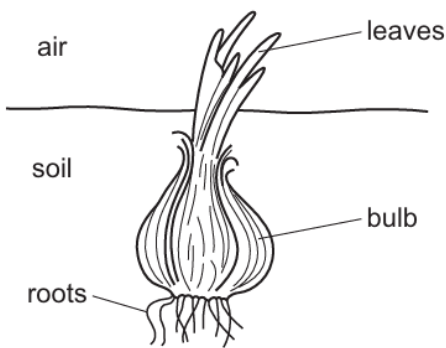
Which method of reproduction is used, and how many parents are needed for her to grow some new identical plants?

	method of reproduction	number of parents needed
A	asexual	one
B	asexual	two
C	sexual	one
D	sexual	two

3 Which statement describes asexual reproduction?

- A** Gametes are involved in this type of reproduction.
- B** Offspring are genetically different from each other.
- C** Offspring are genetically identical to the parent.
- D** Two parents are required for this type of reproduction.

4 Some species of plants can reproduce by producing bulbs. The diagram shows a bulb.



The bulb is produced by one parent plant and will grow into a new plant.

Which statement about the new plant is correct?

- A It is genetically different from its parent and is produced by asexual reproduction.
- B It is genetically different from its parent and is produced by sexual reproduction.
- C It is genetically identical to its parent and is produced by asexual reproduction.
- D It is genetically identical to its parent and is produced by sexual reproduction.

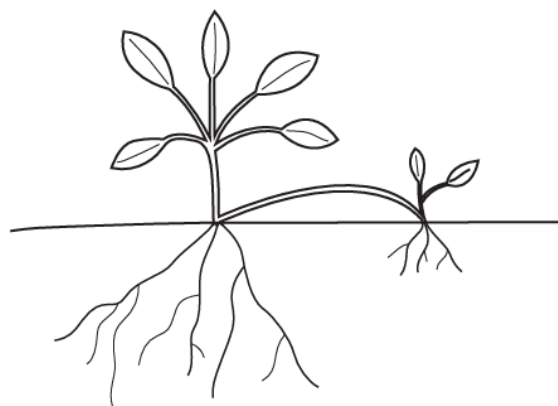
5 Which row is correct for asexual reproduction?

	number of parents	offspring compared with parent or parents
A	one	genetically different
B	one	genetically identical
C	two	genetically different
D	two	genetically identical

6 Which row about asexual reproduction is correct?

	number of parents	offspring identical to parents	offspring identical to each other
A	one	no	yes
B	one	yes	yes
C	two	no	no
D	two	yes	no

7 The diagram shows one way that a plant can reproduce.

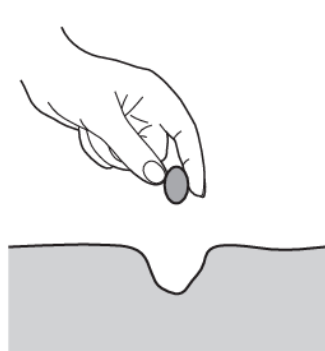


What is a feature of this type of reproduction?

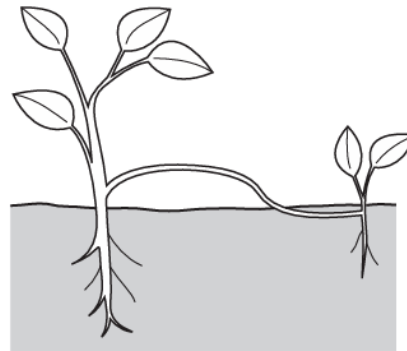
- A** The offspring show genetic variation.
- B** Only one parent is required.
- C** Offspring are easily dispersed over a wide area.
- D** Pollination by insects is required.

- 8 A gardener wants to produce many genetically identical plants from a single plant.

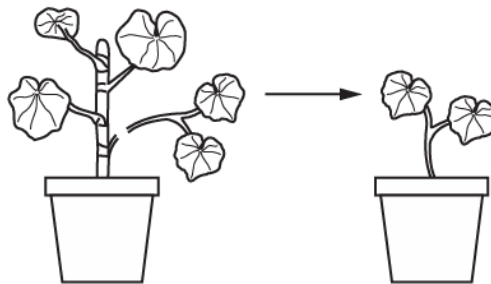
The diagram shows different methods of growing new plants.



1 planting seeds



2 runners



3 stem cuttings

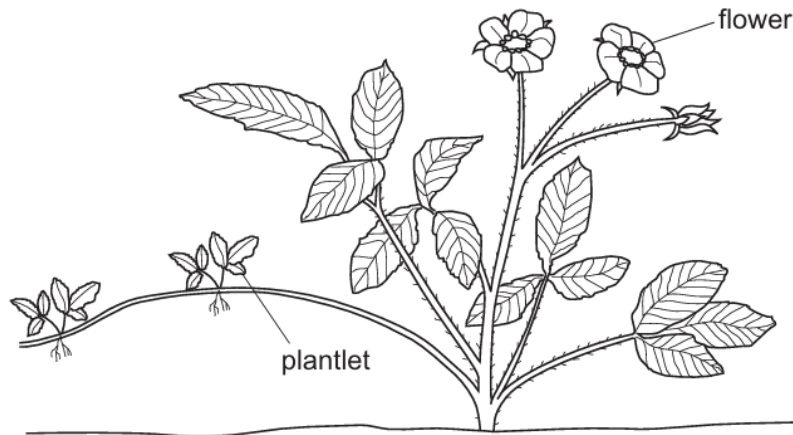
Which methods will produce plants that are genetically identical to the parent plant?

- A** 1, 2 and 3 **B** 1 and 2 only **C** 1 and 3 only **D** 2 and 3 only
- 9 What is an example of asexual reproduction?
- A** a single bacterium dividing to produce two genetically identical bacteria
B a mammal giving birth to four offspring
C a female bird laying six eggs which will hatch into the same species
D a tomato plant producing fruits which contain many seeds

Paper 2

Questions are applicable for both core and extended candidates unless indicated in the question

- 10 The diagram shows a plant that is producing small plantlets.



Which statement about the plantlets is correct?

- A They are genetically different from the parent plant.
 - B They are genetically identical to the parent plant.
 - C They are produced as a result of the fusion of nuclei.
 - D They are produced by fertilising the flowers.
- 11 Which row about asexual reproduction is correct?

	number of parents	offspring identical to parents	offspring identical to each other
A	one	no	yes
B	one	yes	yes
C	two	no	no
D	two	yes	no

12 What is an advantage of asexual reproduction in a wild population? **(extended only)**

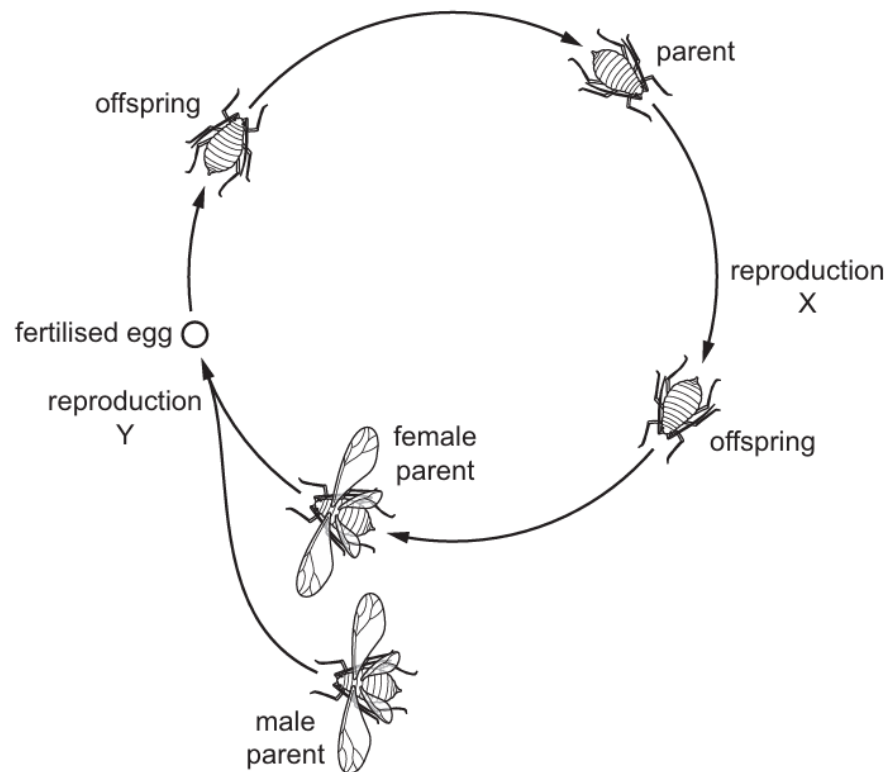
- A The population has reduced ability to respond to changes in the environment.
- B The population can increase rapidly when conditions are suitable.
- C The population shows a lot of variation.
- D The whole population may be killed by a disease pathogen.

13 Commercial plant growers use asexual reproduction to grow coffee plants which produce crops of coffee beans.

What is a disadvantage of asexual reproduction? **(extended only)**

- A The coffee beans produced by all of the plants are identical.
- B Two parent plants are needed.
- C One parent is needed.
- D All plants are equally susceptible to the same disease.

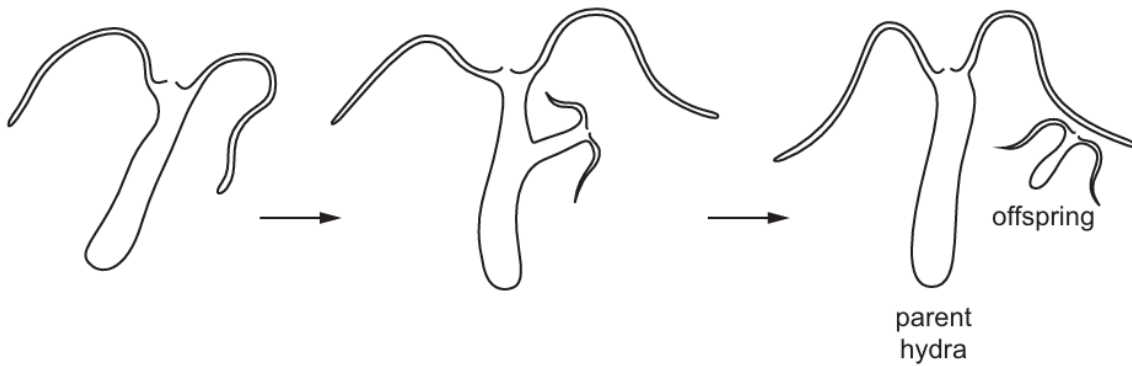
14 The life cycle of aphids includes both sexual and asexual reproduction.



Which statement is correct?

- A** X shows asexual reproduction, which produces genetic variation in the offspring.
- B** Y shows asexual reproduction, which produces genetic variation in the offspring.
- C** X shows asexual reproduction, which produces genetically identical offspring.
- D** Y shows asexual reproduction, which produces genetically identical offspring.

- 15 The diagram shows one parent *Hydra* growing and releasing an offspring from the side of its body.



Which row is correct?

	parent and offspring are genetically identical	involves asexual reproduction
A	✓	✓
B	✓	x
C	x	✓
D	x	x

key

✓ = yes

x = no

- 16 Asexual reproduction can be used to produce crops.

Why might a disease be likely to spread throughout the whole crop?

- A** crop plants are genetically different
- B** crop plants are genetically identical
- C** many offspring are produced
- D** offspring are produced quickly

- 17 Specific grape varieties are maintained using stem cuttings from mature plants that are then planted and cultivated to produce grapes. This is an example of artificial asexual reproduction.

What is a disadvantage of using asexual reproduction to produce fruit? **(extended only)**

- A** An outbreak of disease will affect the whole crop in the same way.
- B** Genetically identical fruit is produced relatively quickly.
- C** No pollination or pollinators are required.
- D** The characteristics of the grapes will vary between plants.

- 18 What is an advantage, for an organism, of using asexual reproduction? **(extended only)**

- A** Disease spreads rapidly.
- B** It does not cause variation.
- C** It easily adapts to environmental change.
- D** Population increases rapidly.