

### 16.3. SEXUAL REPRODUCTION IN PLANTS

01. 0610\_s16\_qp\_23 Q: 27

A teacher said a way to remember the difference between two groups of cells is 'many, minute and motile' or 'few, fat and fixed'

What are the groups of cells?

- A animal and plant cells
  - B male and female gametes
  - C red and white blood cells
  - D xylem and phloem cells
- 

## 16.3 Sexual reproduction in plants

02. 0610\_w21\_qp\_23 Q: 29

Which statement describes a structural adaptation of wind-pollinated flowers?

- A They have long filaments so that the anthers hang outside of the flower.
  - B They have round, sticky sepals to trap pollen grains.
  - C Their large petals protect the stigma.
  - D Their stamens are feathery so there is a large surface area.
- 

03. 0610\_s20\_qp\_21 Q: 28

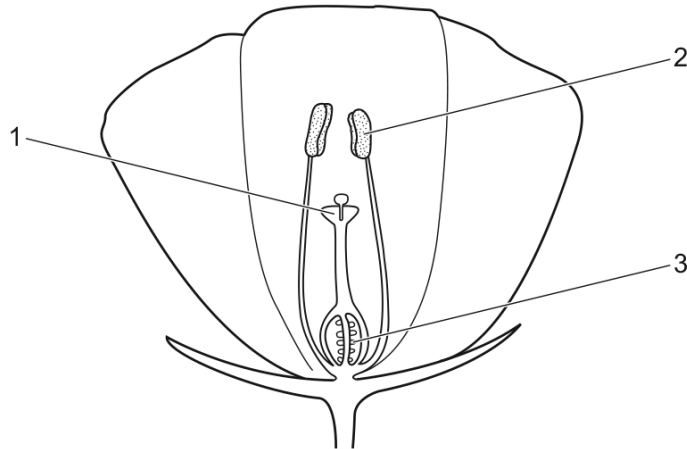
Which description of cross-pollination is correct?

- A the transfer of pollen grains from the anther of one plant to the stigma on a different plant
  - B the transfer of pollen grains from the anther to the stigma on the same plant
  - C the transfer of pollen grains from the stigma of one plant to the anther on a different plant
  - D the transfer of pollen grains from the stigma to the anther on the same plant
- 

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04. 0610\_s20\_qp\_22 Q: 29

The diagram shows half a flower. There is a description of each numbered part.



- 1 the stigma which receives pollen from insects
- 2 the anther which produces smooth and light pollen grains
- 3 the ovule where fertilisation occurs when the male and female nuclei fuse

Which descriptions are correct for an insect-pollinated flower?

- A** 1 only      **B** 1 and 3 only      **C** 2 and 3 only      **D** 1, 2 and 3

05. 0610\_s20\_qp\_23 Q: 27

Which row describes cross-pollination?

	pollen transferred from anther to stigma of		
	a different flower on same plant	a flower on a different plant of same species	a flower on a different plant of a different species
<b>A</b>	✓	✓	✗
<b>B</b>	✓	✗	✓
<b>C</b>	✗	✓	✗
<b>D</b>	✗	✗	✓

16.3. SEXUAL REPRODUCTION IN PLANTS

06. 0610\_w20\_qp\_21 Q: 28

Which row describes self-pollination?

	pollen transferred from anther to stigma of		
	a different flower on the same plant	a flower on a different plant of the same species	same flower
<b>A</b>	✓	✓	x
<b>B</b>	✓	x	✓
<b>C</b>	x	x	✓
<b>D</b>	x	✓	✓

key  
✓ = yes  
x = no

07. 0610\_w20\_qp\_22 Q: 27

Some flowers can only be pollinated by specific insect species.

What will happen if none of these insects are present?

- A** genetically different seed produced
- B** genetically identical seed produced
- C** no seed produced
- D** only small amounts of seed produced

08. 0610\_m19\_qp\_22 Q: 39

What must always be available to allow seeds to germinate?

- A** carbon dioxide
- B** light
- C** mineral salts
- D** water

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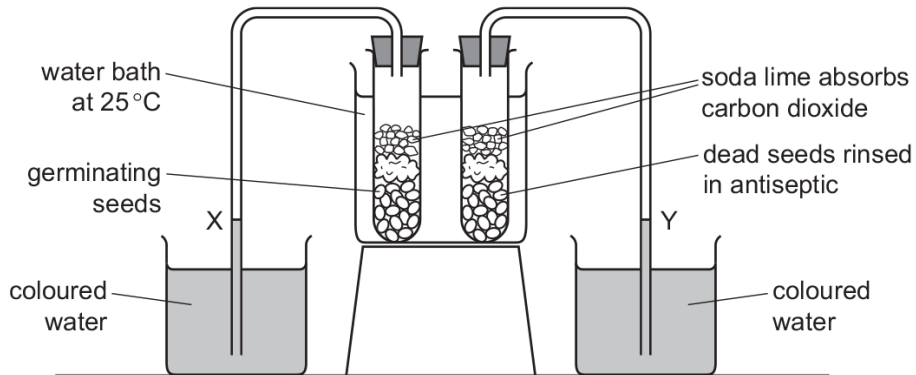
09. 0610\_s19\_qp\_22 Q: 29

What is an advantage of self-pollination?

- A** Evolution is not possible.
- B** Genetic variation cannot occur.
- C** Isolated individuals can reproduce.
- D** It does not require gametes.

10. 0610\_m18\_qp\_22 Q: 17

An experiment is set up to investigate the uptake of oxygen by germinating seeds.



What happens to the levels of the coloured water at X and Y?

	X	Y
<b>A</b>	falls	rises
<b>B</b>	falls	unchanged
<b>C</b>	rises	falls
<b>D</b>	rises	unchanged

11. 0610\_m18\_qp\_22 Q: 23

A wind-pollinated plant has which features?

- A** large anthers, coloured petals and produces nectar
- B** large petals, small anthers and a sticky stigma
- C** small petals, large anthers and a feathery stigma
- D** small petals, produces nectar and has a strong scent

12. 0610\_s18\_qp\_21 Q: 29

Which two statements are correct for the process of cross-pollination in plants?

- 1 increases potential for variation in offspring
- 2 pollen is transferred to a different flower on the same plant
- 3 reduces potential to respond to environmental change
- 4 pollen is transferred to a flower on a different plant of the same species

- A** 1 and 2      **B** 1 and 4      **C** 2 and 3      **D** 3 and 4

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13. 0610\_w18\_qp\_23 Q: 27

Pollen grains are transferred from the anthers to the stigma. The pollen grains adhere to the sticky stigma. The statements describe what happens next.

- 1 The pollen grain grows a pollen tube.
- 2 The pollen tube enters the ovule.
- 3 The pollen tube grows down the style.
- 4 The male nucleus fuses with an egg cell nucleus.

In which order do these stages occur?

- A 1 → 2 → 4 → 3
  - B 1 → 3 → 2 → 4
  - C 2 → 3 → 1 → 4
  - D 3 → 1 → 4 → 2
- 

14. 0610\_m17\_qp\_22 Q: 26

During sexual reproduction in plants, what will give rise to the greatest variation in the offspring?

- A All of the flowers on the same plant have male and female reproductive organs.
  - B The anthers and stigmas on the same plant mature at the same time of year.
  - C There are separate male and female flowers on the same plant.
  - D There are separate male and female plants.
- 

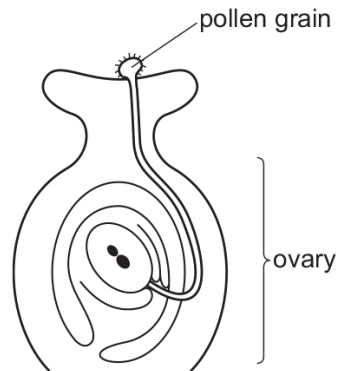
15. 0610\_s17\_qp\_22 Q: 29

What is a feature of self-pollination?

- A It improves the capacity of a species to respond to changes in the environment.
  - B It increases variation in the offspring.
  - C Pollen grains are transferred from the anther of a flower to the stigma of a flower on a different plant.
  - D Pollen grains are transferred from the anther of a flower to the stigma of a flower on the same plant.
-

16. 0610\_s17\_qp\_23 Q: 28

The diagram shows the ovary of a flower.



Which process is shown in the diagram?

- A cross-pollination
- B fertilisation
- C meiosis
- D self-pollination

17. 0610\_w17\_qp\_21 Q: 28

Which environmental factor is **not** always a requirement for seed germination?

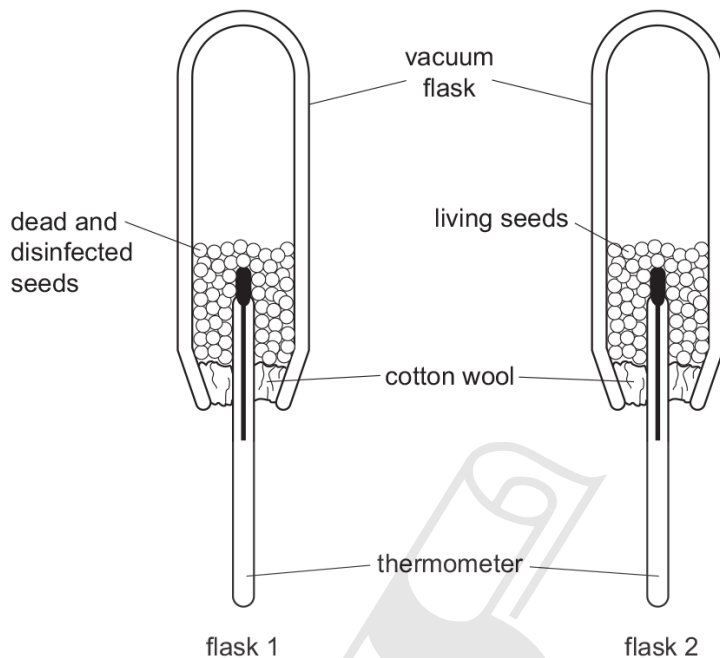
- A light
- B oxygen
- C suitable temperature
- D water

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18. 0610\_w17\_qp\_23 Q: 11

The diagram shows the apparatus at the beginning of an investigation into temperature change during the germination of seeds. The temperature at the start of the investigation was 25°C in both flasks.

After two days the temperature in flask 1 is 25°C. The temperature in flask 2 is 28°C.



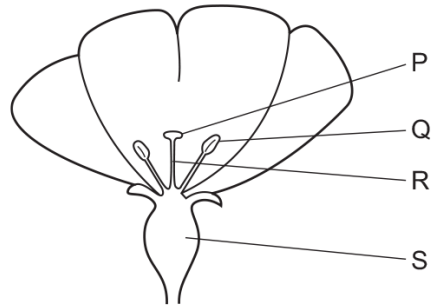
Which characteristic of living organisms is shown in this experiment?

- A excretion
- B growth
- C reproduction
- D respiration

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19. 0610\_w17\_qp\_23 Q: 28

The diagram shows half a flower.



After pollination, where would pollen grains be found?

- A P and Q      B Q and R      C R and S      D S and P

20. 0610\_w17\_qp\_23 Q: 29

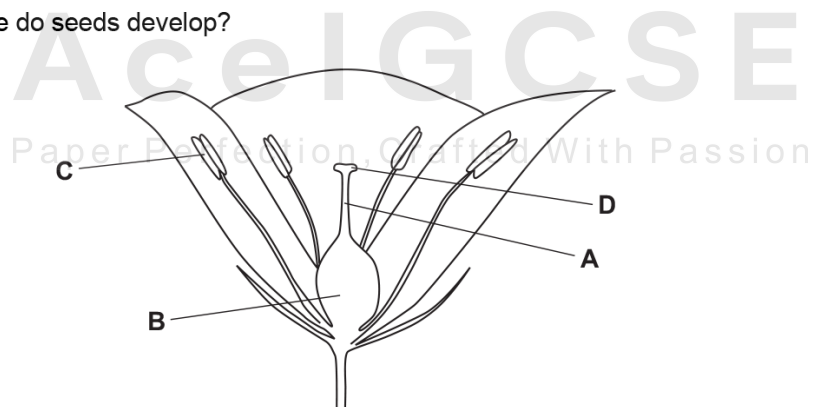
Which environmental factor is **not** always a requirement for seed germination?

- A light  
 B oxygen  
 C suitable temperature  
 D water

21. 0610\_m16\_qp\_22 Q: 31

The diagram shows a flower.

In which structure do seeds develop?



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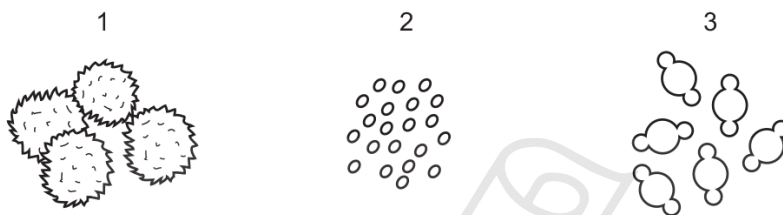
22. 0610\_m16\_qp\_22 Q: 32

In sexual reproduction in humans, why are sperm cells produced in much greater numbers than egg cells?

- A More than one sperm cell fertilises an egg.
  - B Sperm cells are small in size.
  - C Sperm cells live for only a short time.
  - D The chance of one sperm cell reaching an egg is very small.
- 

23. 0610\_s16\_qp\_21 Q: 30

The diagrams show pollen grains from three different species of plant as they appear under the microscope. The diagrams are all to the same scale.



Which pollen grains are involved in insect-pollination?

- A 1 and 2
  - B 1 only
  - C 2 and 3
  - D 3 only
- 

24. 0610\_s16\_qp\_22 Q: 27

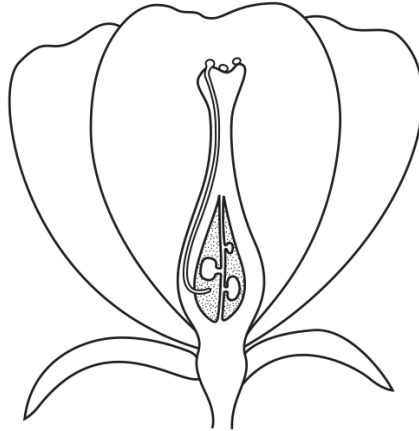
In which conditions will seeds germinate most quickly?

- A dry and cold
  - B dry and warm
  - C wet and cold
  - D wet and warm
- 

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25. 0610\_s16\_qp\_23 Q: 28

The diagram shows a flower.



Which processes have taken place?

	pollination	fertilisation
<b>A</b>	no	no
<b>B</b>	no	yes
<b>C</b>	yes	no
<b>D</b>	yes	yes

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SN	Paper	Q. No.	Answer
01	0610_s16_qp_23	27	B
02	0610_w21_qp_23	29	A
03	0610_s20_qp_21	28	A
04	0610_s20_qp_22	29	B
05	0610_s20_qp_23	27	C
06	0610_w20_qp_21	28	A
07	0610_w20_qp_22	27	C
08	0610_m19_qp_22	39	D
09	0610_s19_qp_22	29	C
10	0610_m18_qp_22	17	D
11	0610_m18_qp_22	23	C
12	0610_s18_qp_21	29	B
13	0610_w18_qp_23	27	B
14	0610_m17_qp_22	26	D
15	0610_s17_qp_22	29	D
16	0610_s17_qp_23	28	B
17	0610_w17_qp_21	28	A
18	0610_w17_qp_23	11	D
19	0610_w17_qp_23	28	A
20	0610_w17_qp_23	29	A
21	0610_m16_qp_22	31	B
22	0610_m16_qp_22	32	D
23	0610_s16_qp_21	30	B
24	0610_s16_qp_22	27	D
25	0610_s16_qp_23	28	C

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