

Sexual reproduction in plants: practice questions

4 questions • 14 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 / 14

1 Which statement describes pollination? [1 mark]

- A. ☐ The fusion of a pollen nucleus with a nucleus in an ovule
- B. ☐ The transfer of pollen grains from an anther to a stigma
- C. ☐ The growth of a seed into a new plant
- D. ☐ The production of pollen in an ovary

2 Name the part of an insect-pollinated flower that: (a) produces pollen grains [1] (b) receives pollen grains [1] (c) contains the ovules [1] (d) protects the flower when it is in the bud. [1] [4 marks]

3 **Supplement** [4 marks]

A grass flower is pollinated by wind. Describe and explain how the anthers and the stigmas of the flower are adapted for wind pollination.

- 4** A student investigated the conditions needed for seeds to germinate. She set up four tubes, each containing 20 mustard seeds, and left them in the dark for five days. (a) State which tube is the control. [1] (b) Explain what the results show about the conditions needed for germination. [3] (c) Explain why the water in tube C was boiled and cooled before it was used. [1] **[5 marks]**

Germination investigation		
Tube	Conditions	number of seeds germinated
A	Damp cotton wool, air, 20 °C, dark	19
B	Dry cotton wool, air, 20 °C, dark	0
C	Seeds covered with boiled, cooled water and a layer of oil, 20 °C, dark	0
D	Damp cotton wool, air, 4 °C, dark (fridge)	0

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. [4]

- (a) anther (1) allow stamen
- (b) stigma (1)
- (c) ovary (1) allow carpel
- (d) sepal(s) (1)

3. [4] **Supplement**

- anthers hang outside the flower / on long filaments (1)
- so the wind can blow the pollen away (1)
- stigmas are large / feathery / hang outside the flower (1)
- to catch pollen grains from the air / give a large surface area (1)

4. [5]

- (a) A (1)
- (b) water is needed: B has no water and none germinated (1)
- oxygen is needed: boiling removes dissolved oxygen / the oil stops air entering in C and none germinated (1)
- a suitable (warm) temperature is needed: D is too cold and none germinated (1) allow low temperature stops germination
- (c) to remove dissolved oxygen (1) ignore cooled so the seeds are not killed / to keep the temperature the same