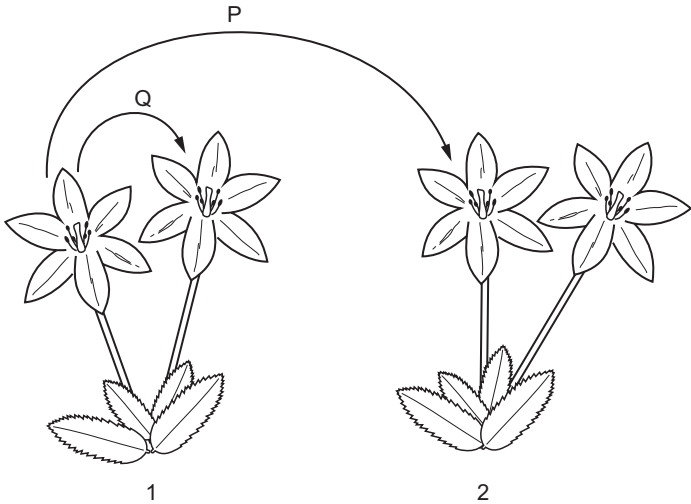


- 24 Where does fertilisation occur in a plant?
- A ovule
 - B pollen grain
 - C pollen tube
 - D stigma

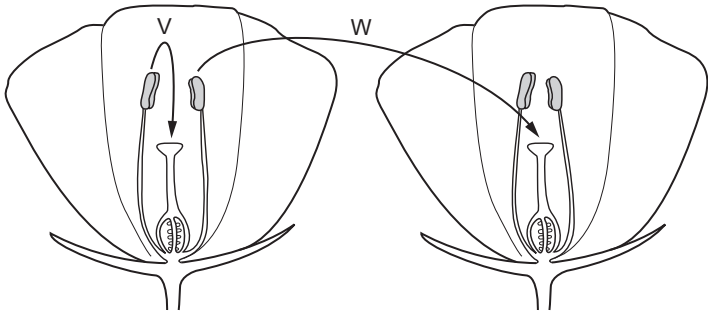
- 24 The diagram shows parts of two different plants, 1 and 2, of the same species.
- The transfer of pollen between the flowers of these two plants is shown by the arrows labelled P and Q.



Which arrows show cross-pollination, and which transfer of pollen would produce the most variation in the offspring?

	cross-pollination	transfer of pollen that produces the most variation in the offspring
A	P only	P
B	P only	Q
C	P and Q	P
D	P and Q	Q

- 27 The diagram shows two methods of pollination, V and W. The two flowers are on different plants of the same species.



- A student made three conclusions about these two methods of pollination.
- 1 Method V will produce genetically identical offspring.
 - 2 Method W will produce genetically different offspring.
 - 3 Method W increases the ability of the species to adapt to its surroundings.

Which conclusions are correct?

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

A black and white photograph of a bee on a flower. A line points from the word 'pollen' to a small, light-colored grain on the bee's leg.

Fig. 4.1

- 1.....
- 2.....
- 3.....

[3]

- [1]

- 1
- 2

[2]

-
- A detailed black and white line drawing of a flower, likely a lily, shown from a top-down perspective. The flower has six large, pointed petals with wavy edges. In the center, there are six stamens with long filaments and oval anthers. The central pistil has a large, oval ovary with three distinct lobes and a long, slender style extending upwards. The drawing is clean and uses simple black lines on a white background.

Fig. 4.2

- the structure that supports an anther
- a structure that protects the flower bud
- an ovule.

[3]

- [illegible]

(e) Sexual reproduction also occurs in humans.

(i) State the name of the male gamete in a human.

..... [1]

(ii) State where gametes are formed in the human male reproductive system.

..... [1]

(iii) Human male gametes are haploid.

State the name of the process that produces haploid male gametes.

..... [1]

(iv) Describe the function of the prostate gland in the male reproductive system.

.....

 [1]

[Total: 18]

29 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

28 Which statement about pollination is correct?

- A Self-pollination increases the ability of the population to respond to changes in the environment by increasing variation.
- B Self-pollination increases the ability of the population to respond to changes in the environment by reducing variation.
- C Self-pollination reduces the ability of the population to respond to changes in the environment by increasing variation.
- D Self-pollination reduces the ability of the population to respond to changes in the environment by reducing variation.

3 (a) Fig. 3.1 shows one stage involved in plant reproduction after pollination.

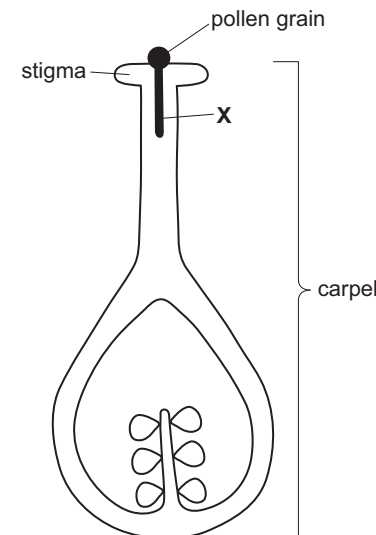


Fig. 3.1

(i) State the name of the part labelled X in Fig. 3.1.

..... [1]

(ii) Describe the events that occur after the stage shown in Fig. 3.1 that result in fertilisation.

.....

 [3]

- (b) A species of plant can use self-pollination and cross-pollination.
- (i) Suggest reasons for this species of plant to use self-pollination rather than cross-pollination.
-
-
-
-
-
-
-
-
-
-
- [3]
- (ii) Discuss the potential effects of only using self-pollination in a population of plants.
-
-
-
-
-
-
-
-
-
-
-
- [3]
- (c) Meiosis produces gametes and is a source of genetic variation.
- State **two other** sources of genetic variation in populations.
- 1
- 2
- [2]

- (d) Describe mitosis and its roles in organisms.
-
-
-
-
-
-
-
-
-
-
-
- [4]
- (e) State the name of the unspecialised cells that divide by mitosis.
- [1]
- [Total: 17]

25 Which row describes self-pollination?

	pollen transferred from an anther to the stigma of a different flower on the same plant	pollen transferred from an anther to the stigma of a flower on a different plant of the same species	pollen transferred from an anther to the stigma of the same flower	key ✓ = yes x = no
A	✓	✓	x	
B	✓	x	✓	
C	x	x	✓	
D	x	✓	✓	