Reproduction – 2022 November IGCSE 0610 Biology

1. Nov/2022/Paper_11/No.31

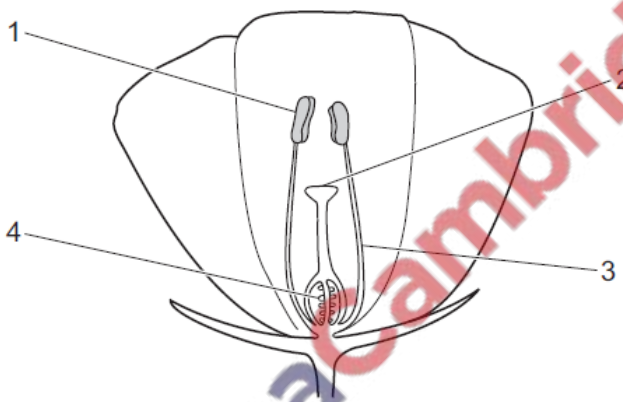
The table shows the conditions that four samples of seeds were kept in.

Which sample would germinate?

	water	oxygen
A	present	absent
B	absent	absent
C	present	present
D	absent	present

2. Nov/2022/Paper_11/No.32

The diagram shows a cross-section of a flower.



During pollination, which labelled structure releases the pollen and which labelled structure receives the pollen?

	releases pollen	receives pollen
A	4	1
B	3	4
C	1	2
D	2	3

3. Nov/2022/Paper_11/No.33

What is a natural method of birth control?

A contraceptive pill

B diaphragm

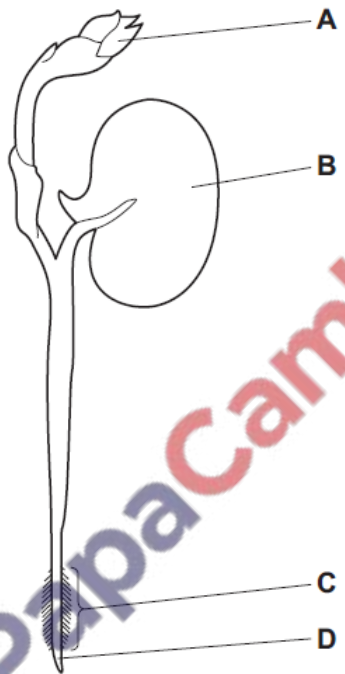
C monitoring cervical mucus

D vasectomy

4. Nov/2022/Paper_12/No.17

The diagram shows a bean seedling soon after it has germinated.

Where is most water absorbed?



5. Nov/2022/Paper_12/No.30

What occurs during fertilisation?

A fusion of two gamete nuclei

B fusion of two zygote nuclei

C splitting of a gamete nucleus

D splitting of a zygote nucleus

6. Nov/2022/Paper_12/No.31

Which hormone causes the development of secondary sexual characteristics in human males?

A adrenaline

B insulin

C progesterone

D testosterone

7. Nov/2022/Paper_12/No.32

The diagrams show four methods of birth control.

1 2 3 4

not to scale

What are barrier methods of birth control?

	1	2	3	4
A	✓	✓	✗	✗
B	✗	✓	✓	✗
C	✗	✗	✓	✓
D	✗	✓	✗	✓

key

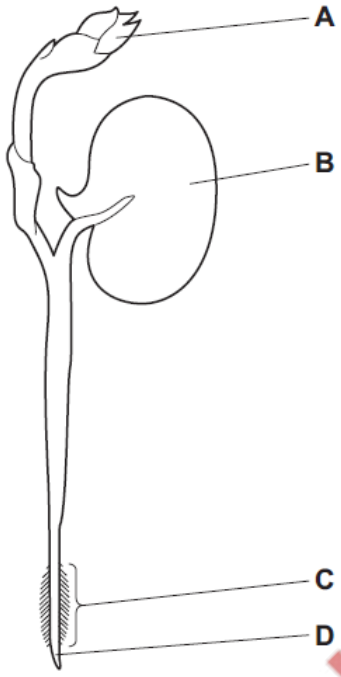
✓ = yes

✗ = no

8. Nov/2022/Paper_13/No.17

The diagram shows a bean seedling soon after it has germinated.

Where is most water absorbed?



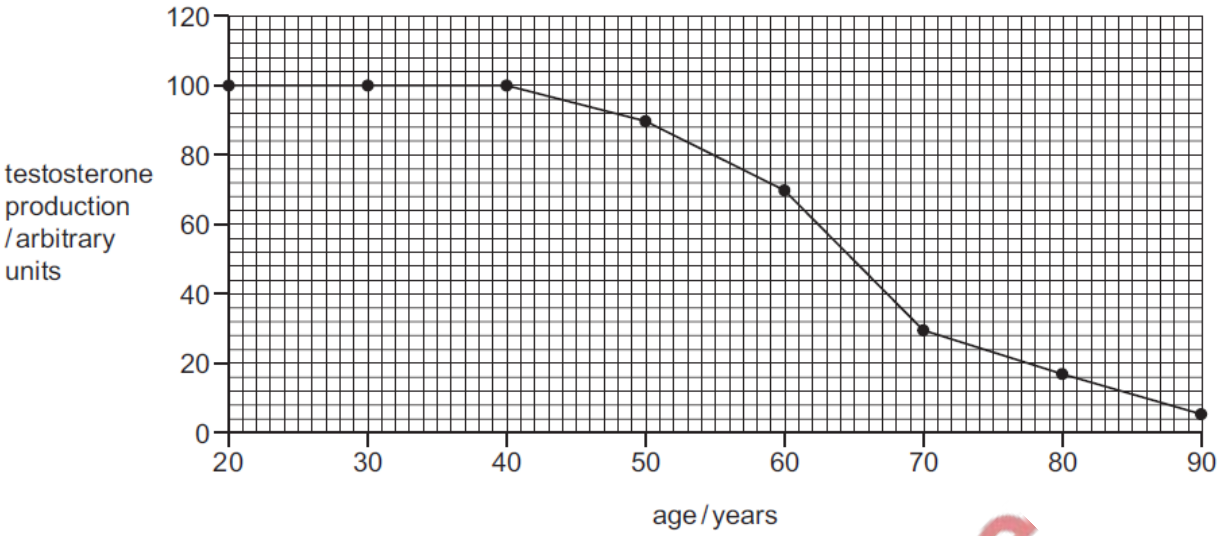
9. Nov/2022/Paper_13/No.30

What is a possible order of events during labour and birth?

	1st	2nd	3rd	4th
A	delivery of the afterbirth	baby passes through the vagina	amniotic sac breaks	cervix dilates
B	baby passes through the vagina	umbilical cord is cut	amniotic sac breaks	uterus muscles begin to contract
C	uterus muscles begin to contract	cervix dilates	amniotic sac breaks	baby passes through the vagina
D	uterus muscles begin to contract	baby passes through the vagina	delivery of the afterbirth	cervix dilates

10. Nov/2022/Paper_13/No.31

The graph shows the decline in testosterone production in some men as they get older.



At which age is testosterone production at 50 arbitrary units?

A 50 **B** 60 **C** 65 **D** 90

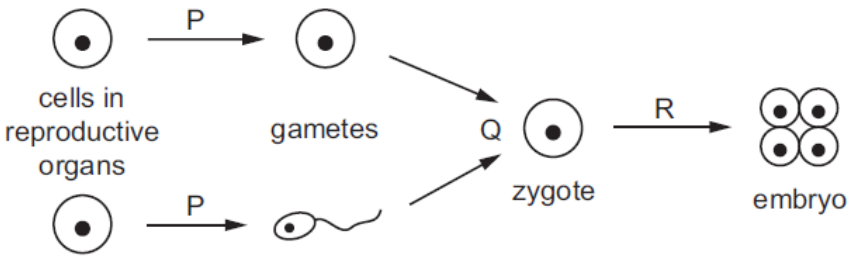
11. Nov/2022/Paper_13/No.32

What is the most effective barrier method of birth control shown in the table?

	method	percentage effectiveness
A	male condom	98
B	diaphragm	95
C	femidom	95
D	vasectomy	99

12. Nov/2022/Paper_13/No.33

The diagram represents processes in sexual reproduction.



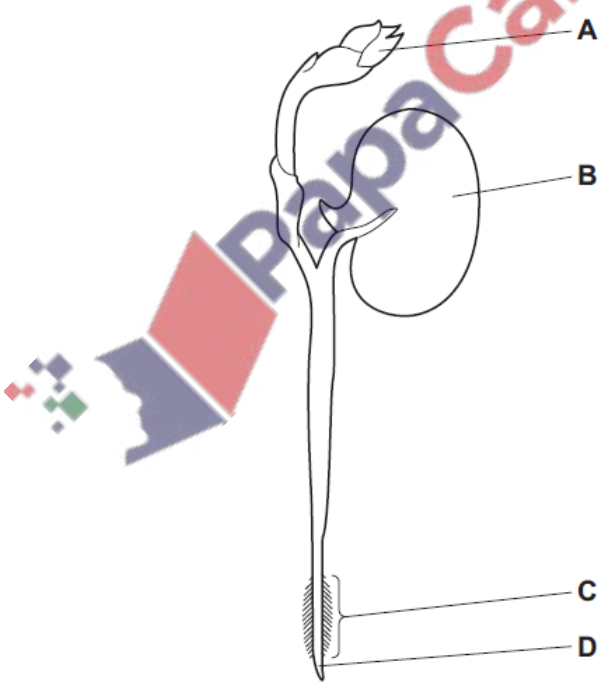
Which processes are represented by the letters P, Q and R?

	P	Q	R
A	meiosis	growth	meiosis
B	meiosis	fertilisation	mitosis
C	mitosis	growth	meiosis
D	mitosis	fertilisation	mitosis

13. Nov/2022/Paper_21/No.15

The diagram shows a bean seedling soon after it has germinated.

Where is most water absorbed?



14. Nov/2022/Paper_21/No.28

The diagram shows a strawberry plant. These plants can reproduce asexually by producing 'plantlets'.

Why is this method of reproduction useful to strawberry farmers?

A Plantlets are produced by meiosis and are genetically different.

B Plantlets are produced by meiosis and are genetically identical.

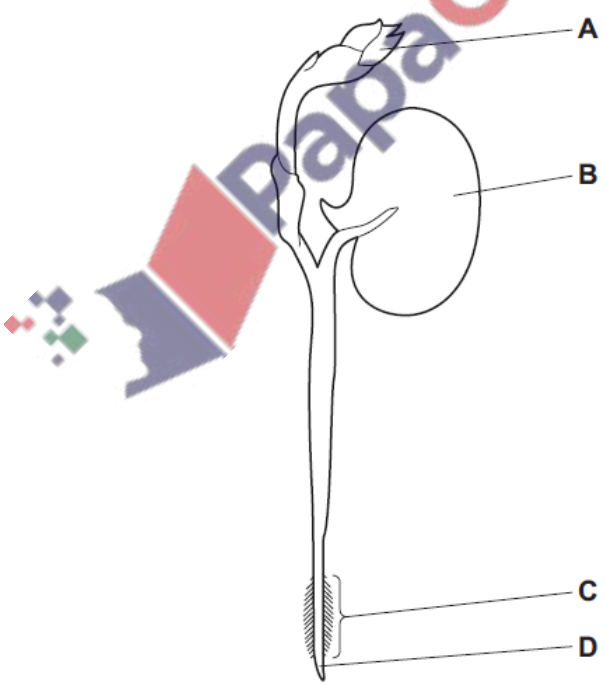
C Plantlets are produced by mitosis and are genetically different.

D Plantlets are produced by mitosis and are genetically identical.

15. Nov/2022/Paper_22/No.15

The diagram shows a bean seedling soon after it has germinated.

Where is most water absorbed?



16. Nov/2022/Paper_22/No.28

What is the sequence of events in sexual reproduction in plants?

A growth of pollen tube → fertilisation → pollination

B growth of pollen tube → pollination → fertilisation

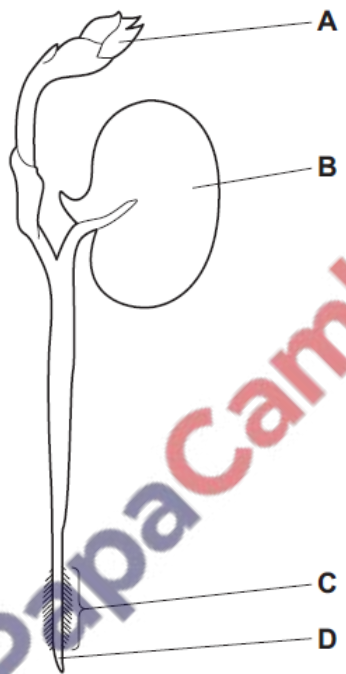
C pollination → fertilisation → growth of pollen tube

D pollination → growth of pollen tube → fertilisation

17. Nov/2022/Paper_23/No.15

The diagram shows a bean seedling soon after it has germinated.

Where is most water absorbed?



18. Nov/2022/Paper_23/No.28

What are advantages of using sexual reproduction to produce crop plants?

1 It produces genetic variation to help breed new varieties of crop plant.

2 It ensures that crops have the identical characteristics.

3 It quickly produces many identical copies of a plant.

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

19. Nov/2022/Paper_23/No.29

Where is the hormone progesterone produced?

1 ovaries

2 placenta

3 uterus

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

20. Nov/2022/Paper_23/No.30

Which row correctly describes mitosis?

	new cells are genetically identical to the parent cell	duplication of chromosomes occurs	number of chromosomes in a daughter cell compared to the parent cell
A	no	before mitosis	same
B	no	during mitosis	halved
C	yes	before mitosis	same
D	yes	during mitosis	halved

(a) Fig. 3.1 shows the human male reproductive system and part of the excretory system.

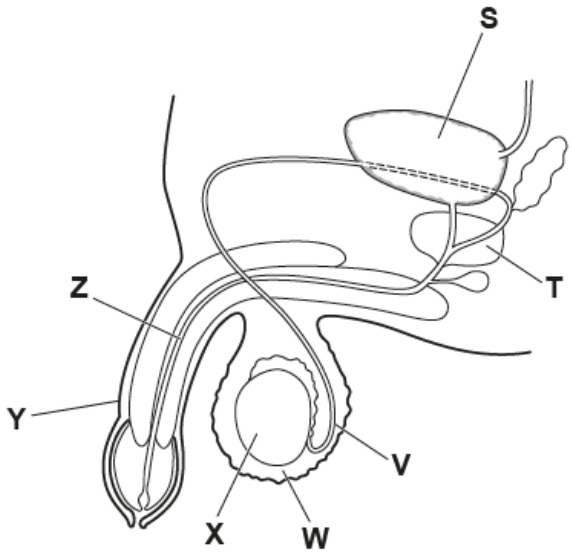


Fig. 3.1

Table 3.1 shows the letters, names and functions of parts from Fig. 3.1.

Complete Table 3.1 using Fig. 3.1.

Table 3.1

letter from Fig. 3.1	name	function
V	.....	carries sperm away from the testis
.....	urethra	carries urine and sperm out of the body
Y	.....	deposits sperm into the vagina
.....	prostate gland	makes the fluid for the sperm to swim in
W	scrotum	....
X	testis	....

[6]

(b) (i) Table 3.2 shows some of the events (**G** to **M**) that can occur after the sperm leaves the male reproductive system.

Table 3.2

G	an embryo is formed
H	nuclei of the sperm and egg cell fuse
J	sperm enters the oviduct
K	sperm passes through the uterus
L	sperm is deposited into the vagina
M	sperm travels through the cervix

Write the letters of the events in the correct sequence, in the spaces provided.

One has been done for you.

L					

[3]

(ii) State all the possible sex chromosomes that can be found in a sperm cell.

..... [1]

(c) When a person approaches sexual maturity, secondary sexual characteristics start to develop.

(i) State the name of the hormone that causes the development of secondary sexual characteristics in boys.

..... [1]

(ii) Place ticks (✓) in the correct boxes to identify **three** secondary sexual characteristics that develop in boys.

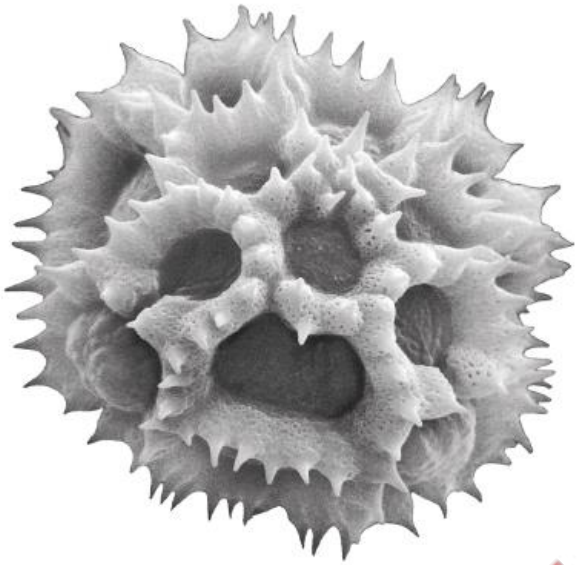
breasts develop	
deepening of the voice	
growth of facial and pubic hair	
menstruation begins	
muscular development	
pelvis widens	

[3]

[Total: 14]

22. Nov/2022/Paper_32/No.7

(a) Fig. 7.1 is a photomicrograph of pollen from an insect-pollinated plant.



magnification ×2500

Fig. 7.1

Describe **two** ways the pollen from a wind-pollinated plant differs from the type of pollen shown in Fig. 7.1.

1 .....

.....

2 .....

.....

[2]

(b) Fig. 7.2 is a diagram of a section through an insect-pollinated flower.

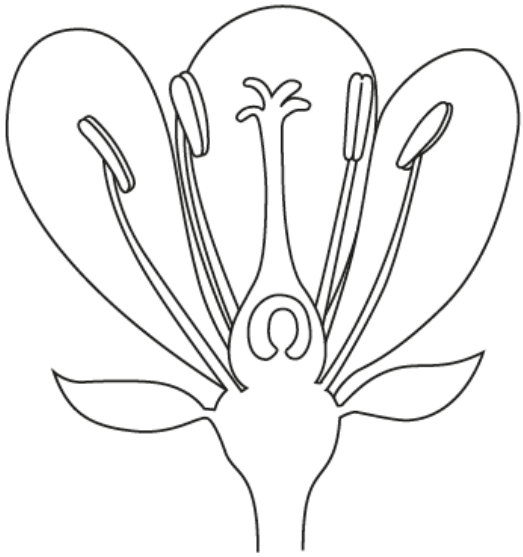


Fig. 7.2

On Fig. 7.2:

- draw an **X** to show where fertilisation occurs
- **circle** the part where pollination occurs
- draw a label line and label the part that produces pollen with the correct name.

[4]

(c) Plants grow from seeds.

State **two** conditions required for the germination of seeds.

1 .....

2 .....

[2]

(d) Xylem tissue is used for transport and support in plants.

Describe how the structure of xylem tissue is adapted for these functions.

.....

.....

.....

.....

.....

.....

..... [3]

[Total: 11]

23. Nov/2022/Paper_43/No.6

Plants can be classified according to the position and shape of the structures in their flowers.

(a) Fig. 6.1 shows sections of flowers from six different plant species.

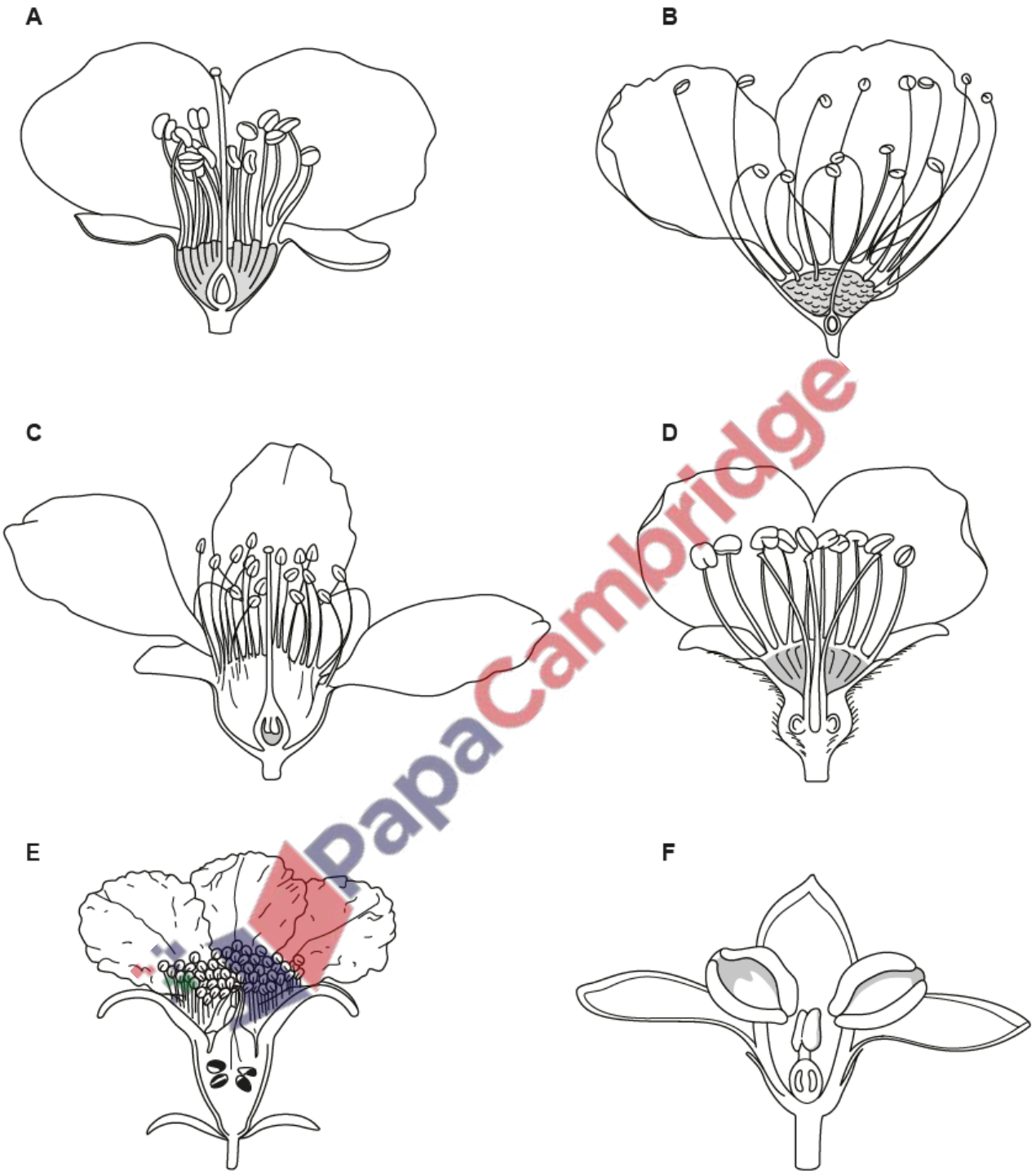


Fig. 6.1

(i) Use the key to identify each species. Write the letter of each species (**A** to **F**) in the correct box in the key.

key

1(a)	two petals visible	go to 2	
(b)	three petals visible	go to 4	
2(a)	one stigma per flower	go to 3	
(b)	more than one stigma per flower	*Pyrus communis*	
3(a)	stigma higher than anther	*Prunus domestica*	
(b)	stigma at same level or lower than anther	*Prunus salicina*	
4(a)	two ovules visible	go to 5	
(b)	more than two ovules visible	*Punica granatum*	
5(a)	anther smaller than carpel	*Prunus amygdalus*	
(b)	anther larger than carpel	*Olea europaea*	

[4]

(ii) The large petals of the flowers shown in Fig. 6.1 indicate that they are pollinated by insects.

List **four** other structural adaptations of insect-pollinated flowers.

1 .....

2 .....

3 .....

4 .....

[4]

(b) Flowering plants are distinguished from ferns because they all produce flowers.

State **one** other morphological feature that can be used to distinguish flowering plants from ferns.

..... [1]

(c) The fruit of a pear tree, *Pyrus communis*, is often used to make juice.

State what protein biotechnologists will use to increase the volume of juice produced from pear fruit.

..... [1]

[Total: 10]