TOPICAL TEST 2A:

30

Section A (10 x 2 marks)

For each question from 1 to 10, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and write the answers in the brackets provided.

1. The diagram below shows part of a flower at one stage during reproduction. What is Structure A?

(1) An ovule before pollination but after fertilization.
(2) An ovule before fertilisation but after pollination.
(3) A pollen grain before pollination but after fertilization.
(4) A pollen grain before fertilisation but after pollination. ( )

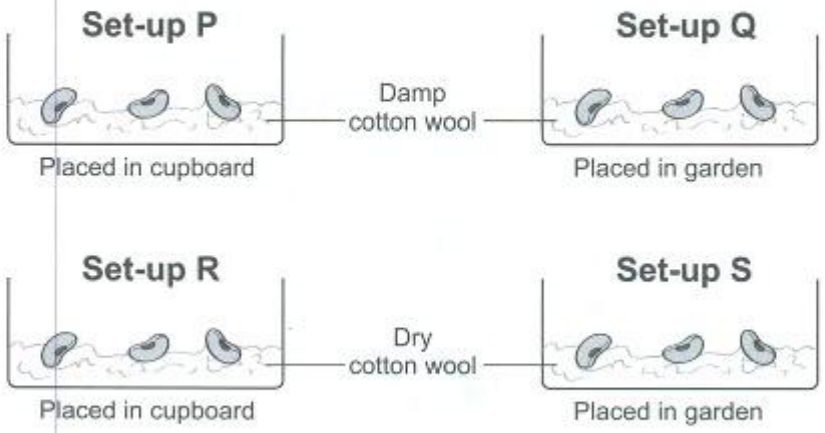
2. Luke conducted an experiment using 4 flowers, A, B, C and D, of the same species growing in a field. Different parts of the flowers, A, B, C and D were removed, as shown in the table below.

Flower	Anther	Petal	Stigma
A	present	removed	present
B	present	removed	removed
C	removed	present	removed
D	removed	present	present

Which flower(s) can still develop into a fruit?

(1) B only
(2) A and C only
(3) A and D only
(4) A, C and D only ( )

3. Nicky set up an experiment as shown in the diagrams below.



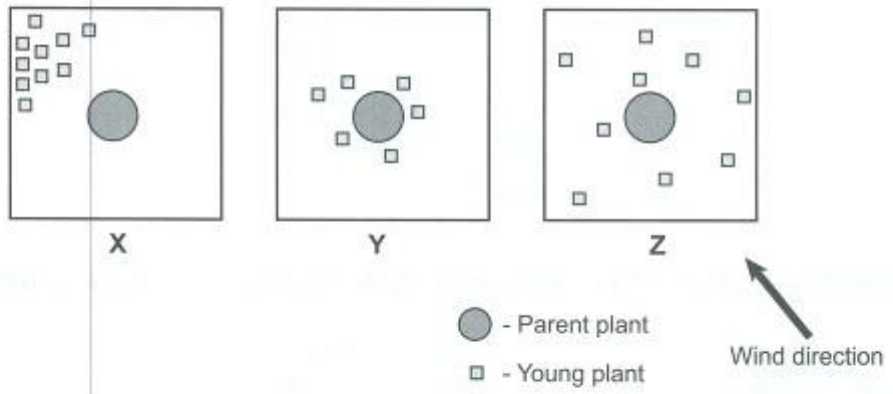
In which set-up(s) did the seeds germinate?

(1) Q only
(2) P and Q only
(3) Q and S only
(4) P, R and S only ( )

4. The diagrams below show the fruits of three different plants.

Fruit A *Fruit B* *Fruit C*

The following diagrams show three possible dispersal patterns, X, Y and Z.

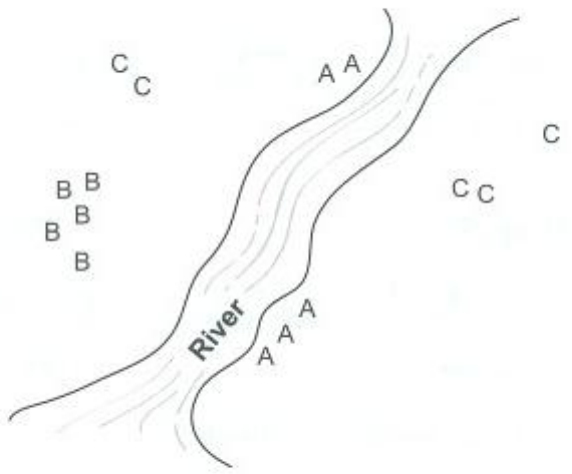


Which one of the following best matches the dispersal patterns to the plants?

	Pattern X	Pattern Y	Pattern Z
(1)	Fruit A	Fruit C	Fruit B
(2)	Fruit B	Fruit C	Fruit A
(3)	Fruit B	Fruit A	Fruit C
(4)	Fruit C	Fruit A	Fruit B

( )

5. The diagram below shows the distribution of three different types of plants, A, B and C in a forest.

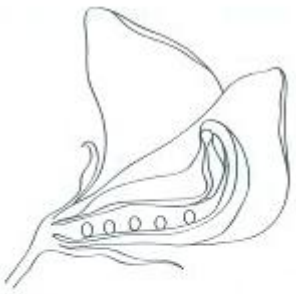


Based on the distribution of the plants, which of the following is most likely to be the methods of dispersal of the seeds of Plants A, B and C?

	A	B	C
(1)	splitting	water	animals
(2)	water	splitting	animals
(3)	water	animals	splitting
(4)	animals	splitting	water

( )

6. Study the cross section of the flower shown below.



After fertilisation, which of the following fruits is likely to develop from this flower?

(1) 

(2) 

(3) 

(4) 

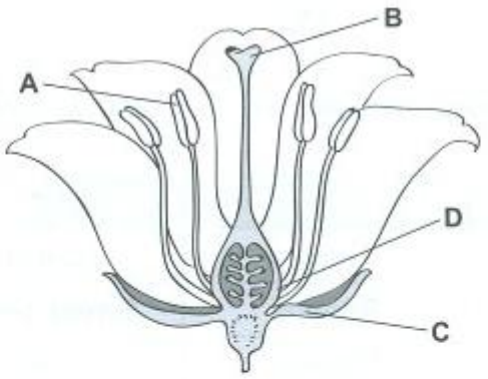
( )

7. Which organisms have been grouped correctly?

	Reproduction Method		
	Spore	**Seed**	**Stem**
(1)	Staghorn fern	Watermelon	Potato
(2)	Toadstool	Apple	Sweet potato
(3)	Grass	Bird's nest fern	Yam
(4)	Angsana	African Tulip	Corn

( )

8. The diagram below shows the various parts of an insect-pollinated flower.



Which part, labelled A, B, C or D, will develop into a fruit?

(1) A
(2) B
(3) C
(4) D
( )

9. Study the pictures below carefully.

Ginger

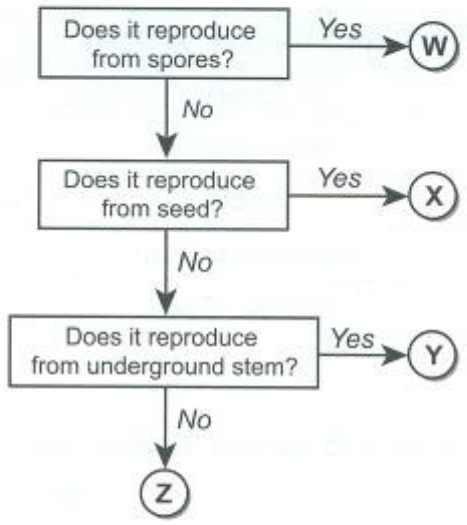
Water chestnut

Based on your observations, how are the plant parts alike?

A: Both are underground stems
B: Both have plant parts which store food
C: Both are used to reproduce new plants

(1) A only
(2) A and C only
(3) B and C only
(4) A, B and C
( )

10. Study the flow chart below.



Which one of the following identifies W, X, Y and Z correctly?

	W	X	Y	Z
(1)	Grass	Guava	Carrot	Ginger
(2)	Bird's nest fern	Banana	Sweet potato	Potato
(3)	Moss	Papaya	Onion	Tapioca
(4)	Pine	Lychee	Turnip	Pineapple

( )

Section B (10 marks)

Read each question carefully and write the answers in the spaces provided.

11. The diagram below shows a flower of Plant X.

(a) Based on the above diagram, state the method of pollination for Flower X. (1m)

_____

_____

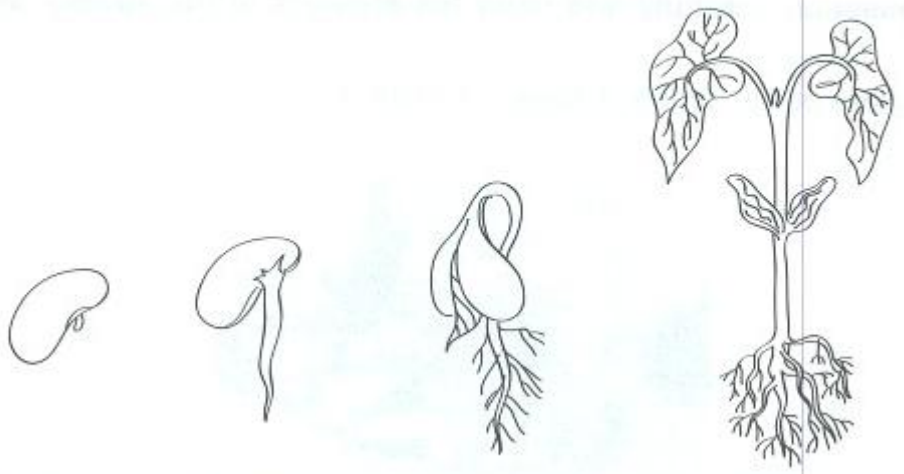
(b) Explain your answer in (a). (1m)

_____

_____

_____

12. The diagram below shows how a seed develops into a young seedling.

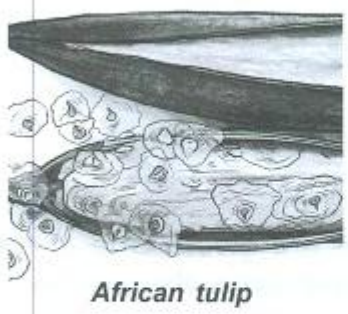


(a) Where does the seedling get its food from at Stage B? (1m)

(b) State the condition(s) that is/are needed for the seed to germinate. (1m)

(c) At which stage, A, B, C or D, would the seedling be able to make its own food? Explain your answer. (1m)

13. The diagram below shows the fruits of the African tulip and the Flame of the forest.



African tulip

Flame of the forest

(a) State one similarity in the way the two plants disperse their seeds. (1m)

_____

_____

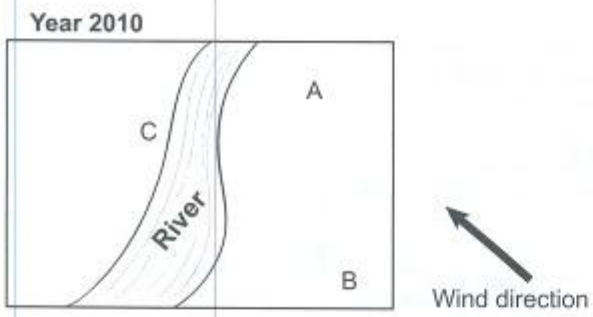
(b) Explain why the seeds of the African Tulip can be dispersed further than those of the Flame of the Forest. (1m)

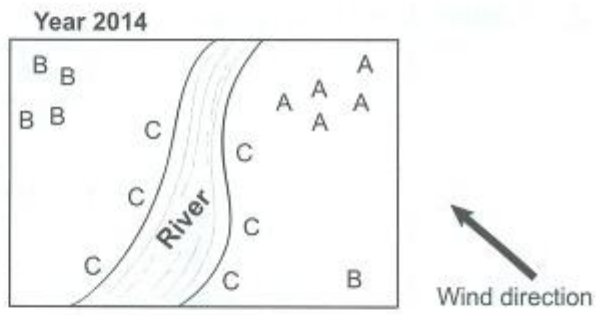
_____

_____

_____

14. The seeds/fruits of Plants A, B and C are dispersed by different methods. The diagrams below show the distribution of the 3 types of plants in 2010 and 2014 respectively.





(a) Identify the dispersal methods for Plants A and B. (1m)

A: _____

B: _____

(b) Describe one likely characteristic of the fruit/seeds of Plant C. Give a reason for your answer. (2m)

_____

_____

TOPICAL TEST 2B:

30

Section A (10 x 2 marks)

For each question from 1 to 10, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and write the answers in the brackets provided.

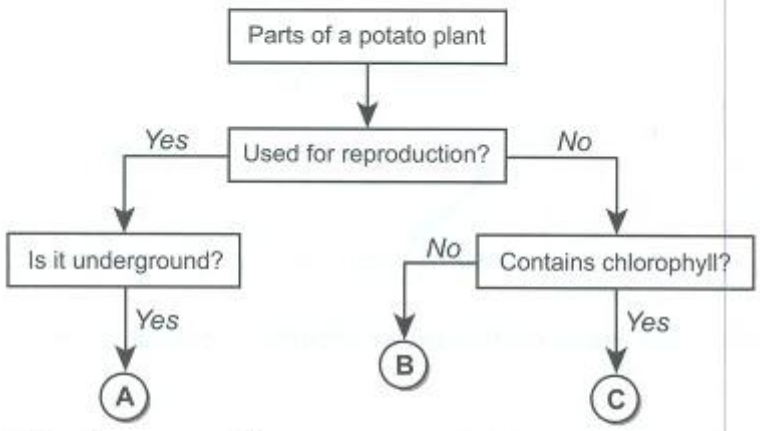
1. Plant X has both the male and female parts found on a single flower. An investigation was carried out on 4 similar flowers growing on the same Plant X to find out whether a fruit can develop when certain parts of the flowers are removed. The table below shows the parts that have been removed from the 4 flowers.

	Flower A	Flower B	Flower C	Flower D
Anther	Removed			Removed
Stigma		Removed		
Petals			Removed	Removed

Based on the information in the table above, which of the flower(s), A, B, C or D can still develop into a fruit?

(1) B only
(2) A and D only
(3) A, C and D only
(4) A, B, C and D ( )

2. Study the chart below.

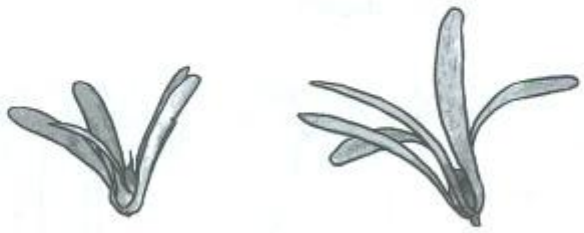


Which of the following correctly represents A, B and C?

	A	B	C
(1)	roots	stem	leaves
(2)	leaves	roots	stem
(3)	roots	leaves	stem
(4)	stem	roots	leaves

( )

3. Jay dropped two shorea fruit, X and Y, from the same height as shown in the diagram below.



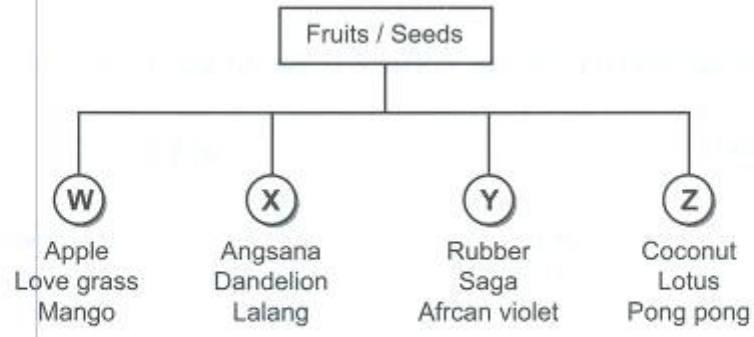
Shorea fruit X *Shorea fruit Y*

He recorded the time taken by each fruit to reach the ground. Which one is most likely to be the correct set of records?

	X	Y
(1)	3.3 s	2.4 s
(2)	4.6 s	4.6 s
(3)	4.6 s	3.3 s
(4)	4.6 s	10.2 s

( )

4. Study the classification chart shown below.

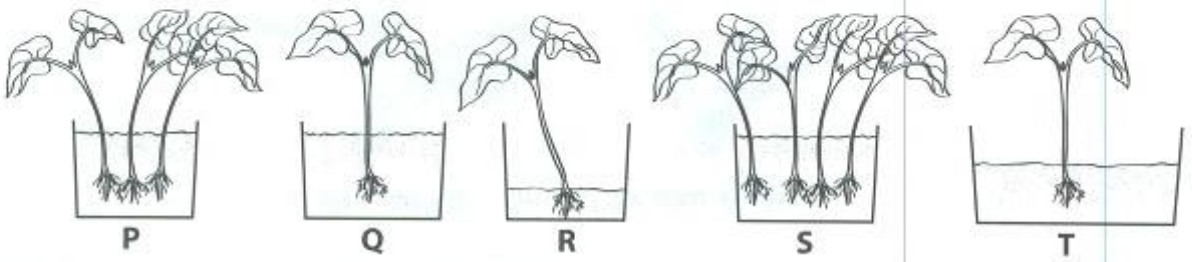


Which one of the following correctly identifies how the fruits/seeds are dispersed?

	W	X	Y	Z
(1)	By animals	By water	By splitting	By wind
(2)	By animals	By wind	By splitting	By water
(3)	By animals	By splitting	By wind	By water
(4)	By animals	By water	By wind	By splitting

( )

5. Bruce wanted to investigate the effect of overcrowding on plants.
He set up 5 pots of plants and allowed them to grow for 4 weeks under the same conditions. The results are as shown.



Which two pots should he compare for a fair test?

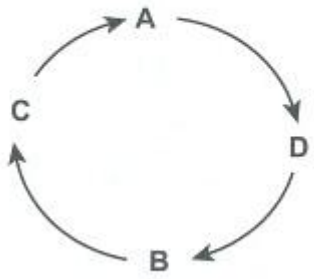
(1) P and Q
(2) Q and S
(3) S and T
(4) R and T

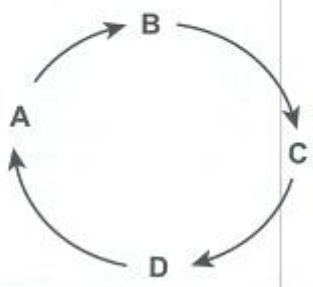
( )

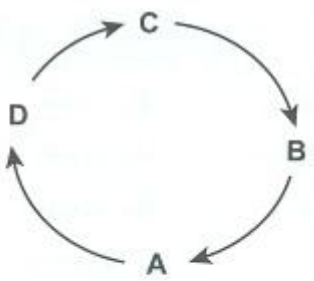
6. A, B, C and D are processes that occur in the life cycle of a plant.

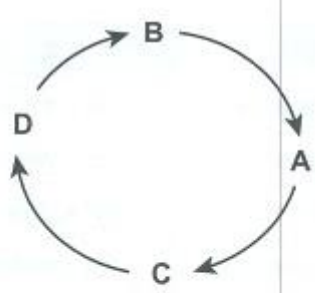
A: dispersal
B: fertilization
C: pollination
D: seed germination

Which of the following shows the correct order of the processes?

(1)


(2)


(3)


(4)


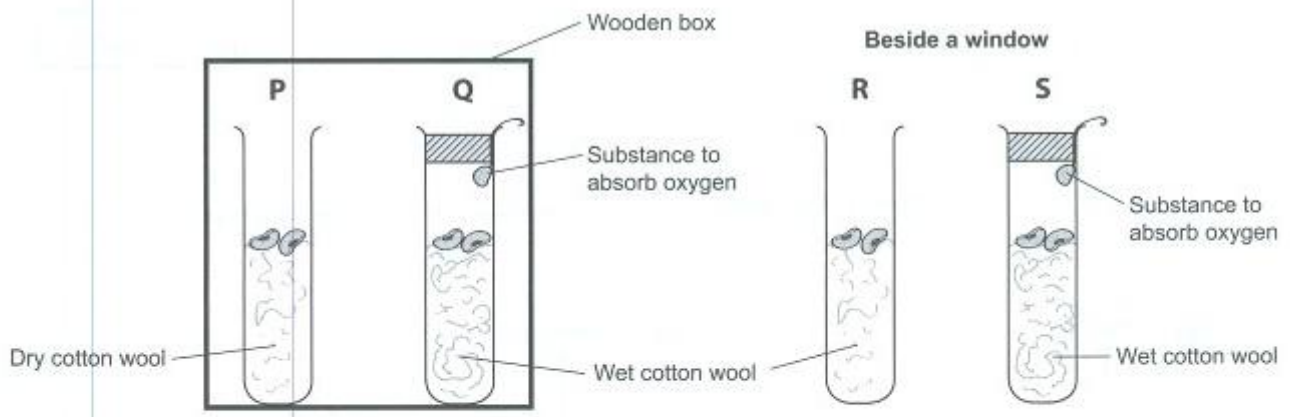
( )

7. Which of the following statements about plants are true?

A: All flowers will develop into a fruit.
B: Some flowers use scent to attract its pollinators.
C: Flowers produce nectar to attract insects and birds.
D: Wind-pollinated flowers are unlikely to have large petals.

(1) A and B only
(2) C and D only
(3) B, C and D only
(4) A, B, C and D ( )

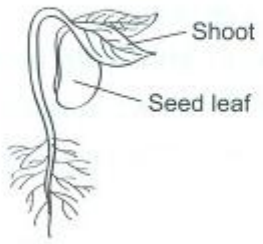
8. An experiment is set up as shown below to investigate the factors that affect germination.



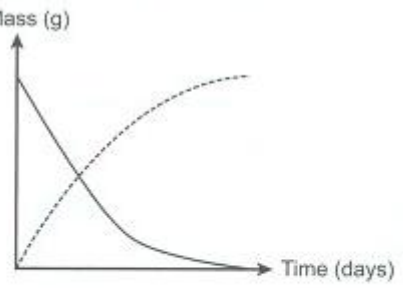
In which of the following set-ups would the seeds germinate?

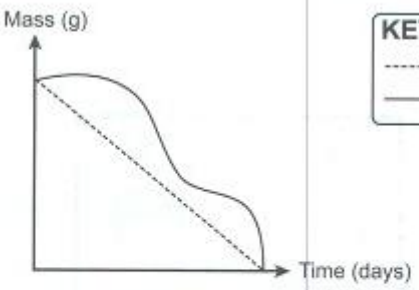
(1) R only
(2) S only
(3) Q and R only
(4) P and R only ( )

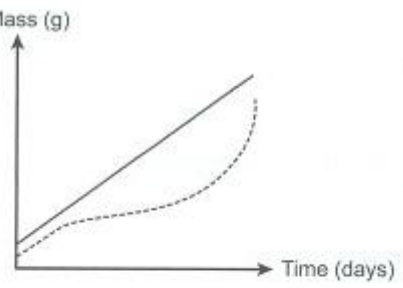
9. Mandy carried out an experiment on a seed growing into a seedling as shown in the diagram below.

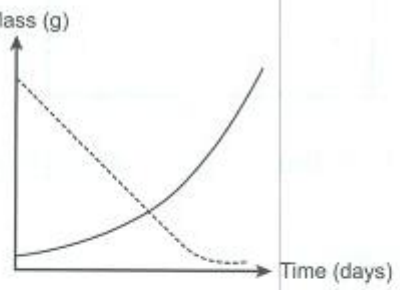


Which one of the following graphs shows the changes in the mass of the shoot and the mass of the seed leaf during the experiment?

(1)


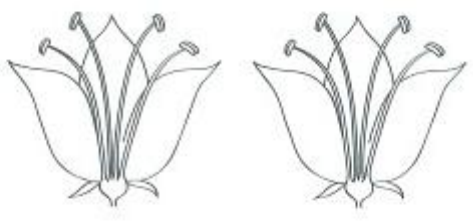
(2)


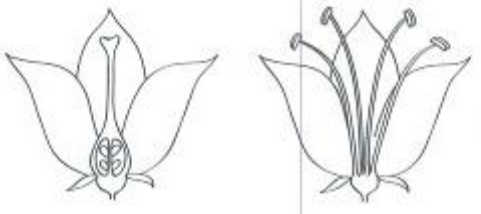
(3)


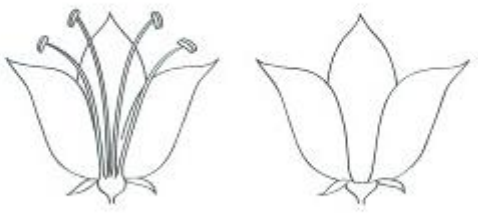
(4)


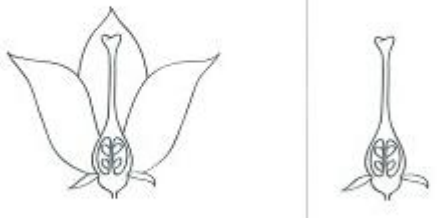
( )

10. Claire has some flowers as shown below. Which pair of flowers will enable pollination to take place?

(1)


(2)


(3)


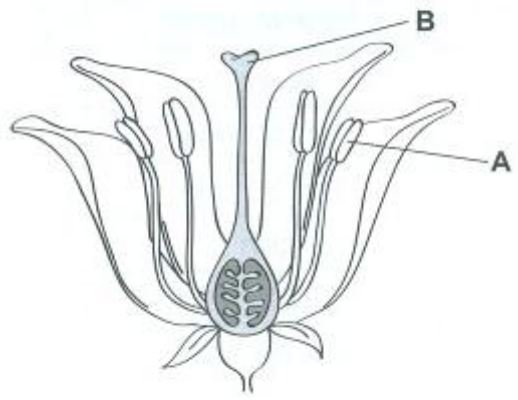
(4)


( )

Section B (10 marks)

Read each question carefully and write the answers in the spaces provided.

11. The diagram below shows the cross-section of a flower.



(a) How would the removal of Part B affect the development of the flower? Explain your answer. (2m)

_____

_____

_____

(b) Name Part A and state its function? (1m)

_____

_____

_____

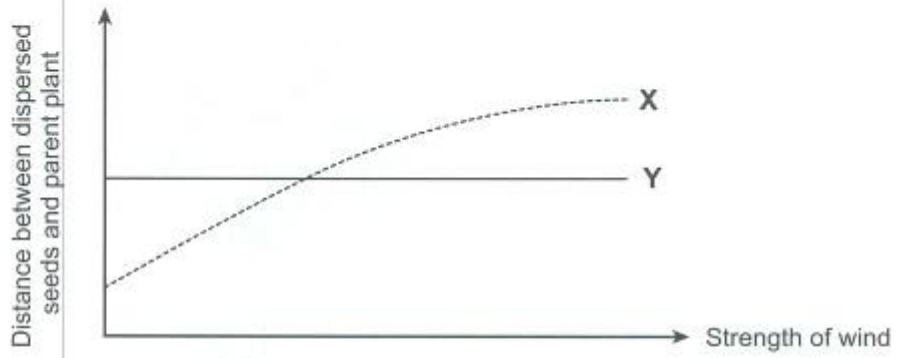
12. Juliana conducted an experiment to find out if temperature affects the splitting of fruits. She exposed six fruits to different temperatures and recorded the results of her experiment in the table below.

Fruit	Temperature (° C)	Time taken for the fruit to split	Distance the seeds are scattered (cm)
L	40	25 min	450
M	34	1 h 40 min	240
N	30	2 h 30 min	180
O	27	5 h	110
P	23	24 h	60
Q	19	Did not split	Not applicable

(a) Based on the results in the table above, what can Juliana conclude about the effect of temperature on the time taken for the fruits to split? (1m)

(b) Which fruit split with the greatest force? Give a reason for your answer. (1m)

13. Study the graph below.



(a) Based on the graph above, describe the relationship between the distance of the dispersed seeds from their parent plant and the strength of wind for Plants X and Y. (2m)

_____

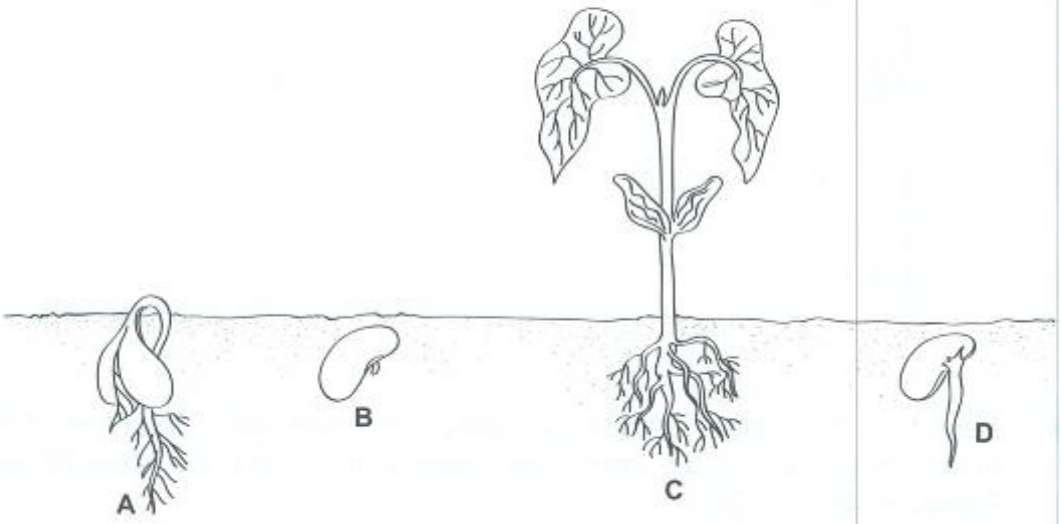
_____

(b) Explain why seeds or fruits need to be dispersed? (1m)

_____

_____

14. The diagrams below show the different stages of seed germination. The stages A, B, C and D are not arranged in order.



(a) At which stage(s), A, B, C, or D, will the removal of the seed leaves **not** affect the growth of the plant? (1m)

(b) Explain your answer in part (a). (1m)