4

PEI HWA PRESBYTERIAN PRIMARY SCHOOL

CONTINUAL ASSESSMENT 1

PRIMARY 5

SCIENCE

3rd March 2016

(BOOKLET A)

Name: _____ ( )

Class: Primary 5 Loyalty _____

Additional Material(s): Optical Answer Sheet (OAS)

Total time for Booklets A and B: 1 h 45 mins

INSTRUCTIONS TO CANDIDATES

1. Write your Name, Class and Index No. at the spaces provided above.
2. DO NOT turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answers on the Optical Answer Sheet (OAS) provided.

There are a total of 19 pages in this booklet, excluding the cover page.

For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and shade your answer on the Optical Answer Sheet. (56 marks)

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1. Three classmates, Debbie, Kelvin and Samantha, made some observations about the living things in Group Z.

Debbie : Some of the living things in Group Z can make us sick.

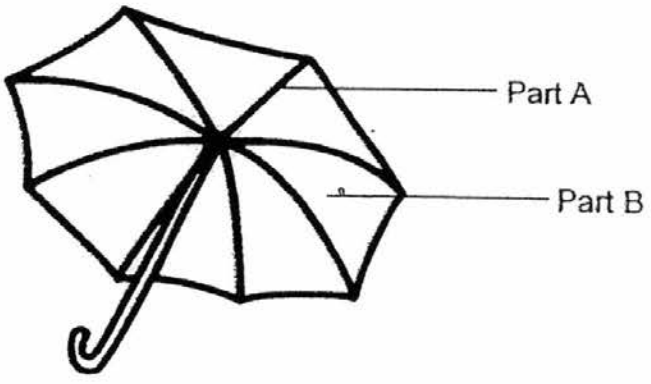
Kelvin : Some of the living things in Group Z can be used to make yoghurt.

Samantha: These living things are very small and can only be seen under a microscope.

What could the living things in Group Z be?

(1) Fungi
(2) Mould
(3) Bacteria
(4) Mushrooms

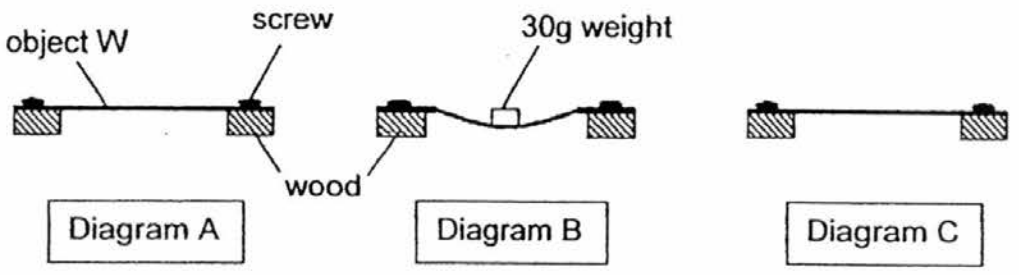
2. The diagram below shows a fully opened umbrella.



The umbrella is able to keep its shape because _____.

(1) both Part A and Part B are soft
(2) both Part A and Part B are hard
(3) Part A is flexible and Part B is strong
(4) Part A is strong and Part B is flexible

3. Pei Ying placed an object W on two blocks of wood and tightened it with screws as shown in Diagram A. She then put a 30g weight at the center of the object W and observed that object W bent as shown in Diagram B. When she removed the 30g weight, object W returned to its original shape as shown in Diagram C.

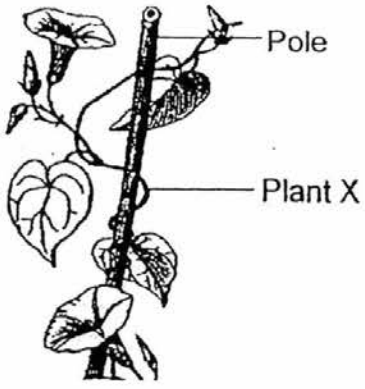


Which property of the material that is used to make object W was Pei Ying trying to find out?

A Strength
B Flexibility
C Waterproof
D Transparency

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

4. Study the picture below.



Which of the following are characteristics of Plant X?

A It has flowers.

B It has a weak stem.

C It can stand upright on its own.

D It has leaves to make food.

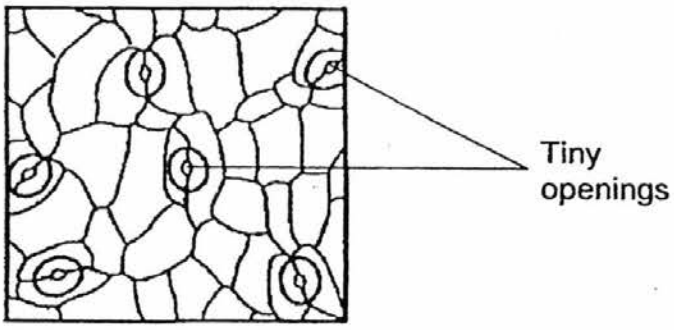
(1) A and B only

(2) A, B and D only

(3) A, C and D only

(4) A, B, C and D

5. The diagram below shows tiny openings found on a plant part.



Which of the following statements about these tiny openings is/are true?

A They are only found in the roots.

B They help plants to take in and give out gases.

C They are found only on leaves that are green in colour.

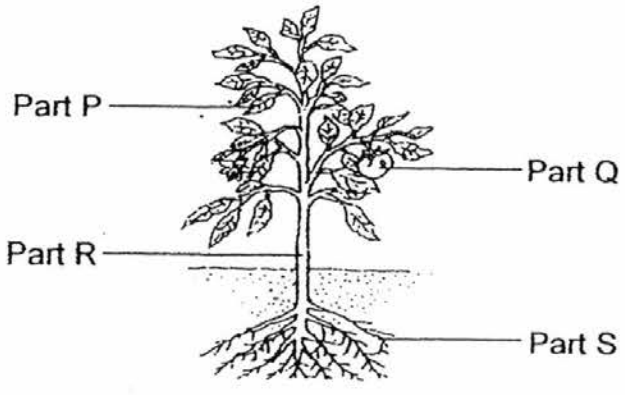
(1) A only

(2) B only

(3) A and B only

(4) B and C only

6. The diagram below shows a plant with parts labelled P, Q, R and S.



Which of the following statements about the plant parts is <u>not</u> correct?

(1) Part Q develops from a flower..

(2) Part P makes food for the plant.

(3) Part R holds the plant firmly to the ground.

(4) Without Part S, the plant will not be able to absorb water and minerals from the soil.

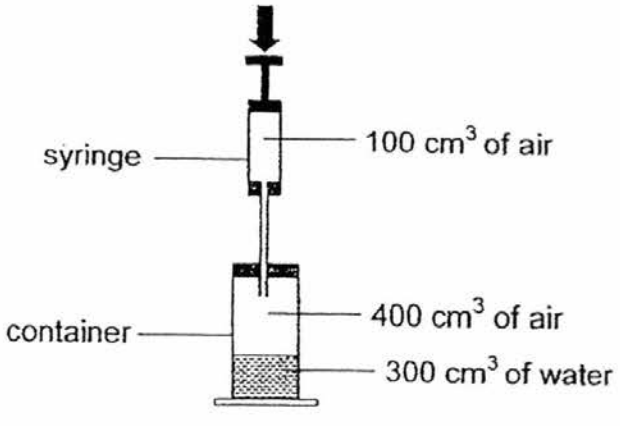
7. The table below shows some of the characteristics of four different animals, C, D, E and F.

	Animal			
Characteristics	**C**	**D**	**E**	**F**
Does it moult?	Yes	No	Yes	No
Does it have a 4-stage life cycle?	Yes	No	No	No
Does their young resemble the adult?	No	No	Yes	Yes

Based on the information in the table, which animal is a beetle?

(1) C
(2) D
(3) E
(4) F

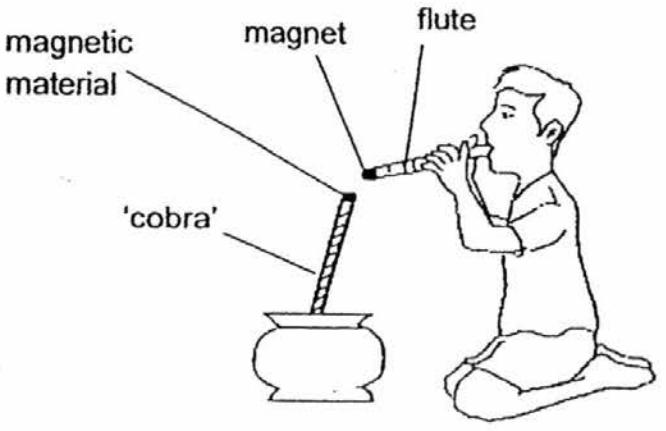
8. Doreen set up an experiment as shown below. She used a container with a volume of 700 cm^3. It contained 300 cm^3 of water. The syringe at the top contained 100 cm^3 of air. When she pushed the syringe down all the way, all the air from the syringe went into the container.



At the end of the experiment, how much air was there in the container?

(1) 100 cm^3
(2) 300 cm^3
(3) 400 cm^3
(4) 500 cm^3

9. Zainal performed a 'magic trick' in front of his schoolmates. He made a flute with a magnet in it and a 'cobra', which is actually a piece of rope with a magnetic material attached to the end of the rope. By blowing a tune on his flute and moving, he made the 'cobra' move along with the music.



Which of the following concepts did Zainal use in his 'magic trick'?

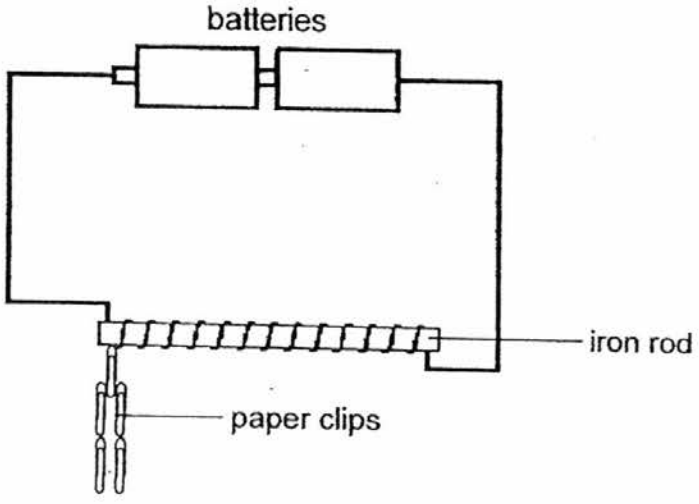
(1) Unlike poles of two magnets attract.

(2) Magnetic forces can act at a distance.

(3) Magnets attract non-magnetic materials.

(4) Magnets always come to rest in a north-south direction.

10. The diagram below shows a set-up with two batteries and an iron rod which became an electromagnet. When the electromagnet is placed near some paper clips, the paper clips are attracted to it.



What can be done to the set-up so that the electromagnet is able to attract **more** paper clips?

A Add another battery

B Remove one battery

C Change the iron rod into a wooden rod.

D Increase the number of turns of wire around the iron rod

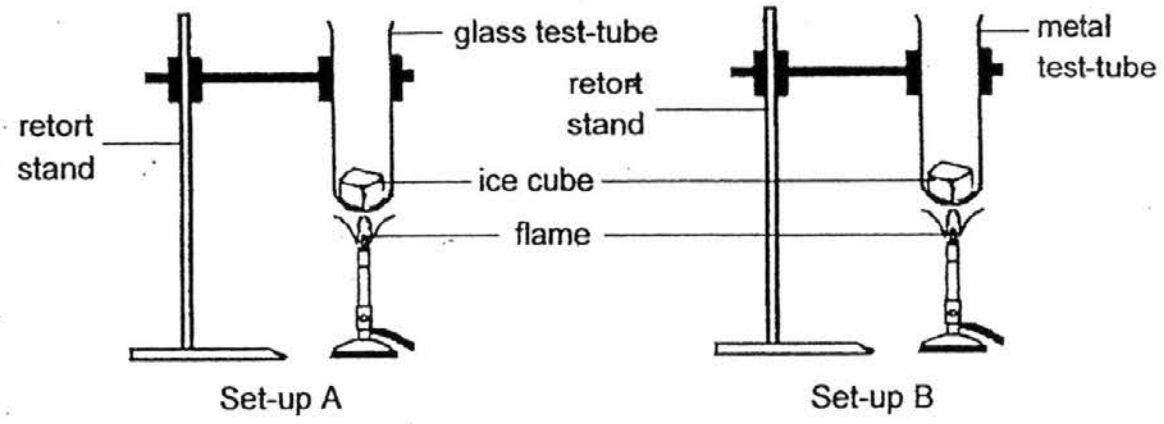
(1) A only

(2) A and D only

(3) B and C only

(4) A, C and D only

11. Sarah set up an experiment as shown below.



After several minutes, she observed that only the ice cube in Set-up B had melted completely. Sarah then concluded that the ice cube in Set-up B melted faster because _____.

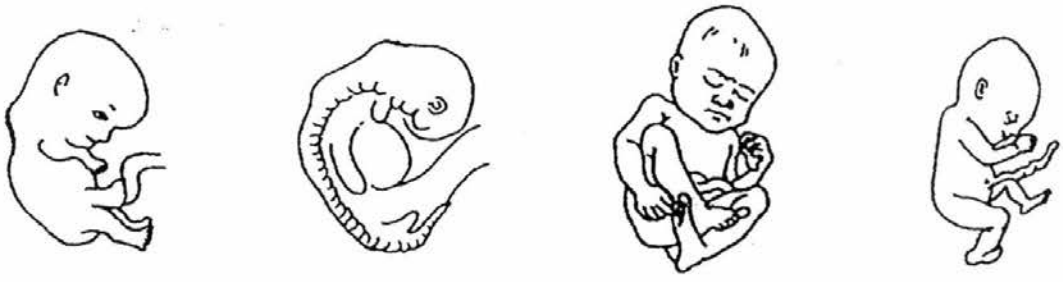
(1) the ice cube lost heat to the surrounding air
(2) glass is a better conductor of heat than metal.
(3) metal is a better conductor of heat than glass
(4) the ice cube gained heat from the surrounding air

12. Which of the statements about a developing baby is/are true?

A It develops from one fertilised egg.
B It contains genetic information from both parents.
C It takes one year for a foetus to fully develop and to be born.
D It receives nutrients from the mother's blood through the umbilical cord.

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

13. The diagrams below show a developing baby at different stages of growth inside the mother's womb.

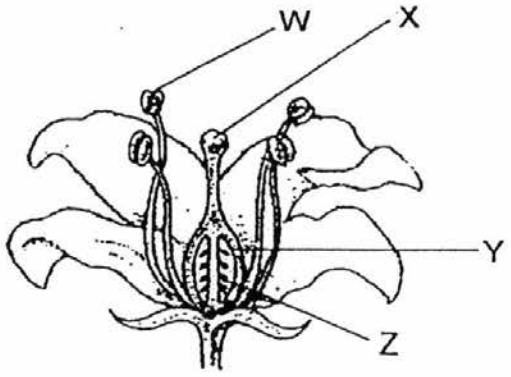


A B C D

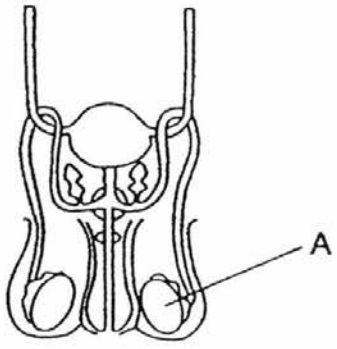
Which of the following shows the correct order of the stages of growth of the developing baby?

	Stages of growth of developing baby			
(1)	A	B	D	C
(2)	A	B	C	D
(3)	B	A	C	D
(4)	B	A	D	C

14. The diagrams below show parts of the reproductive systems of a flower and a human being.



Plant reproductive system



Human reproductive system

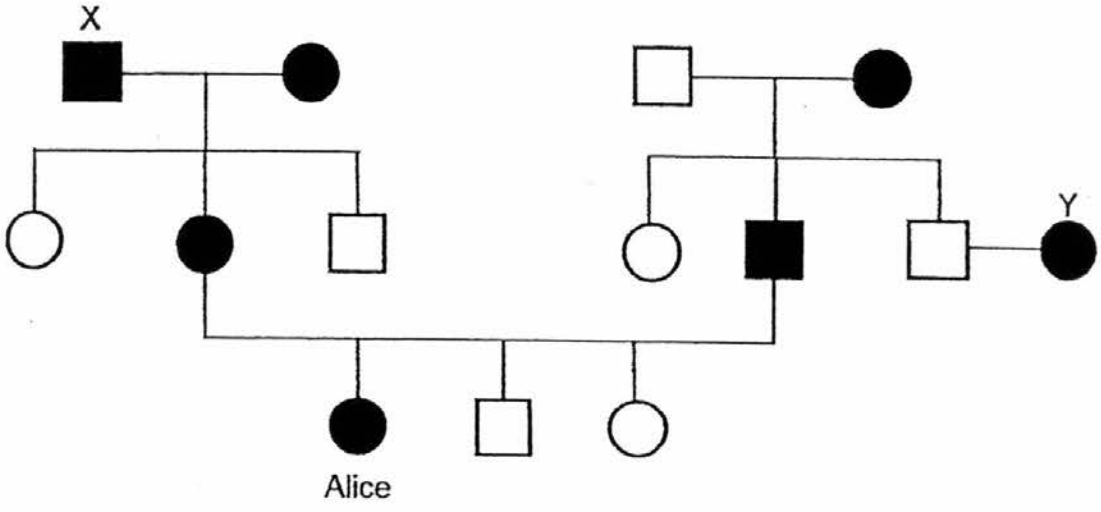
Which part of the flower (W, X, Y or Z) has the same function as the part marked A in the human reproductive system?

(1) W
(2) X
(3) Y
(4) Z

15. Esther observes a plant and concludes that its flowers are pollinated by wind. Which of the following features enables Esther to arrive at her conclusion?

(1) It has a strong smell.
(2) It has large pollen grains.
(3) It has brightly coloured petals.
(4) It has exposed anthers and stigma.

Study Alice's family tree below carefully and answer questions 16 and 17.



Key

- Male with single eyelid
- Male with double eyelid
- Female with single eyelid
- Female with double eyelid

16. Which two of the following statements about Alice's family tree are true?

A Y is Alice's cousin.

B Alice has two sisters.

C Alice's mother has two siblings.

D X is Alice's mother's father.

(1) A and C

(2) A and D

(3) B and C

(4) C and D

17. How many males in Alice's family tree have double eyelids?

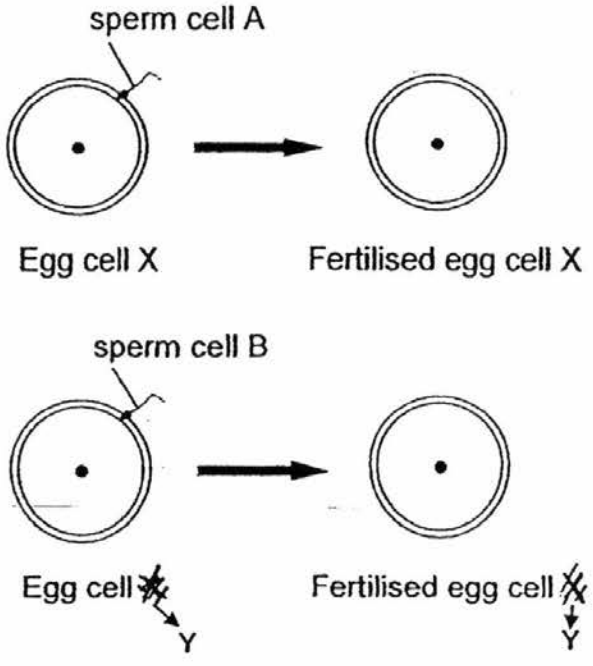
(1) 1

(2) 2

(3) 3

(4) 4

18. Two egg cells, X and Y, were released from the ovary in a female human body. Each egg cell fused with a different sperm cell, A and B, as shown in the diagram below.



Which of the following statements are true?

A Fertilised eggs X and Y develop in the womb.

B Fertilised egg cells X and Y are genetically identical.

C The sperm cell fuses with the egg cell to become a fertilised egg cell.

(1) A and B only

(2) A and C only

(3) B and C only

(4) A, B and C

19. Mr and Mrs Smith have the following features.

	Eyelid	Eyes	Ears	Hair
Mr Smith	Double	Blue	Detached	Short
Mrs Smith	Single	Brown	Detached	Short

There are four children at a party and the table below contains their descriptions.

	Eyelid	Eyes	Ears	Hair
Amy	Single	Blue	Detached	Long
Britney	Double	Green	Attached	Short
Chloe	Double	Brown	Detached	Short
Dylan	Single	Brown	Detached	Short

Who is **most likely** <u>not</u> Mr and Mrs Smith's child?

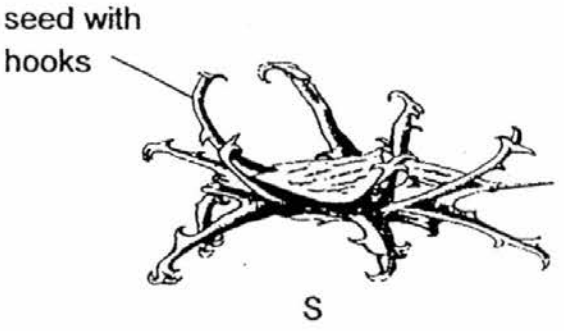
(1) Amy

(2) Britney

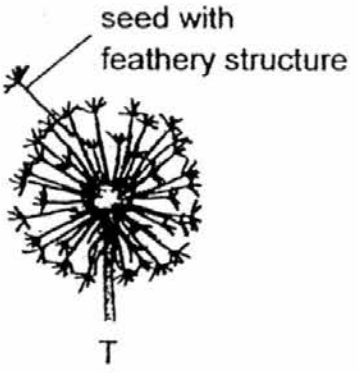
(3) Chloe

(4) Dylan

20. S and T are seeds of different plants.



S



T

Based on the information above, which of the following statements is/are definitely true about seeds S and T?

A Both seeds S and T are dispersed by wind.

B Seed T is dispersed by animals but seed S is dispersed by wind.

C Seed S is dispersed by animals but seed T is dispersed by wind.

D Seed T can be dispersed further from its parent plant than seed S.

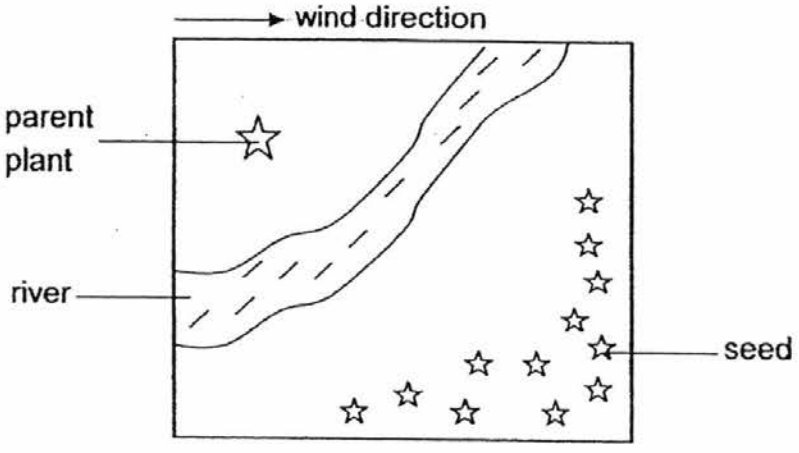
(1) C only

(2) A and D only

(3) B and D only

(4) C and D only

21. The diagram below shows the pattern of how the seeds of a plant are being dispersed within an area of $1km^2$.

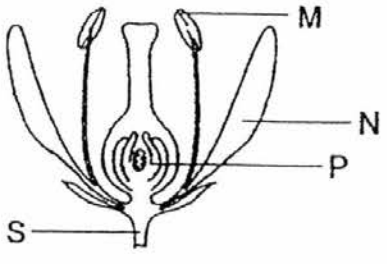


Based on the information above, what kind of characteristics would the seeds most likely possess?

A light
B sweet
C fibrous husk
D wing-like structure

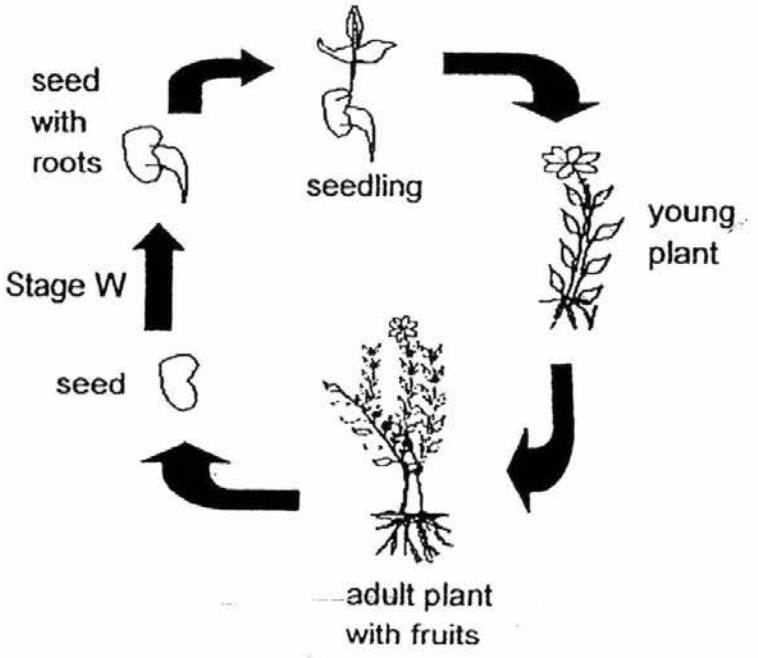
(1) A and B only
(2) A and D only
(3) B and C only
(4) A, C and D only

22. After pollination, two parts of a flower that are not needed for the flower to become a fruit are _____.



(1) M and N
(2) M and P
(3) S and N
(4) S and P

23. The diagram below shows the life cycle of a flowering plant.



What is the process at Stage W?

(1) Pollination
(2) Fertilisation
(3) Germination
(4) Seed dispersal

24. Which one of the following plant parts does not match its function?

	Plant part	Function
(1)	Ovary	Contains the ovules
(2)	Anther	Supports the filament
(3)	Petal	Attracts insects to the flowers
(4)	Stigma	Receives pollen grains from another flower

25. John wanted to find out if a fruit is dispersed by water. Which of the following processes can he carry out?

A Find the mass of the fruit.

B Check if the fruit is able to float on water.

C Examine if the fruit has fibrous husk.

D Observe the pattern of dispersal of the fruits from its parent plant.

(1) B and C only

(2) A, B and C only

(3) B, C and D only

(4) A, B, C and D

26. The following statements describe how sexual reproduction takes place in plants. Arrange the following statements to show the correct sequence of the processes taking place in the flower.

A Both the fruit and seed develop.

B The anther releases pollen grains

C The pollen tube grows towards the ovule.

D Pollen grains are transferred to the stigma.

E The male sex cell fuses with the female sex cell.

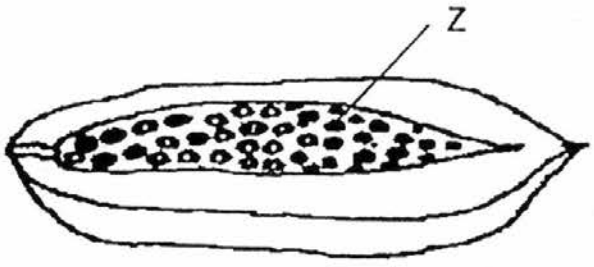
(1) A → C → E → B → D

(2) B → D → C → E → A

(3) B → E → C → A → D

(4) D → B → E → C → A

27. The diagram below shows the fruit of a papaya.



Which two of the following statements about Z are true?

A They can grow into new plants.

B They help in the dispersal process.

C They were the pollen grains of the flower.

D They developed from the ovules of the flower.

(1) A and B

(2) A and D

(3) B and C

(4) C and D

28. Anthony wanted to find out how the wing-like structure of a fruit affects the time taken for it to reach the ground when dropped from a certain height. He used two similar fruits, A and B. Fruit A has a complete wing-like structure and fruit B has the wing-like structure cut off as shown below.

fruit A

fruit B

He repeated the experiment 3 times. The average time taken for the fruit to reach the ground when dropped from a certain height was taken and recorded in the table below. Which set of readings is most likely to be correct?

	Average time taken for the fruit to reach the ground when dropped from a certain height	
	Fruit A	**Fruit B**
(1)	4.8s	2.6s
(2)	2.6s	4.8s
(3)	4.8s	4.6s
(4)	2.6s	6.2s

PEI HWA PRESBYTERIAN PRIMARY SCHOOL

CONTINUAL ASSESSMENT 1

PRIMARY 5

SCIENCE

3rd March 2016

(BOOKLET B)

Name: _____ ( )

Class: Primary 5 Loyalty _____

Parent's Signature

Total time: 1 hour 45 minutes

INSTRUCTIONS TO CANDIDATES

1. Write your Name, Class and Index No. at the spaces provided above.
2. DO NOT turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write all your answers in this booklet.

FOR TEACHER'S USE

Marks (Booklet A) :	56
Marks (Booklet B) :	44
Total Marks (Booklet A & B) :	100

There are a total of 18 pages in this booklet, excluding the cover page.

For questions 29 to 41, write your answers in this booklet.

The number of marks available is shown in brackets [ ] at the end of each question or part question.

(44 marks)

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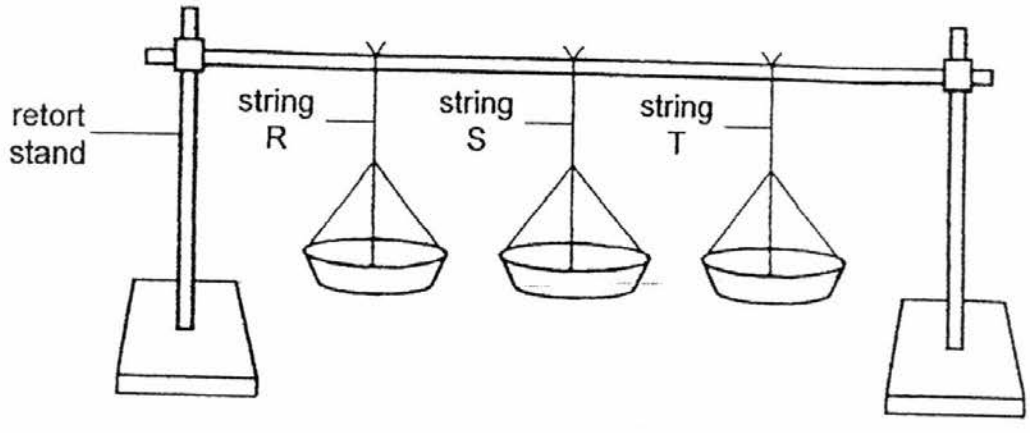
29. Mr Lee set up an experiment in the Science lab to test the strength of three strings of different materials, R, S and T.



When Mr Lee put two similar weights on each pan, string S broke but strings R and T remained intact. Then Mr Lee put one more similar weight on each of the remaining two pans and string T broke.

(a) Arrange the strings, R, S and T from the weakest to the strongest. [1]

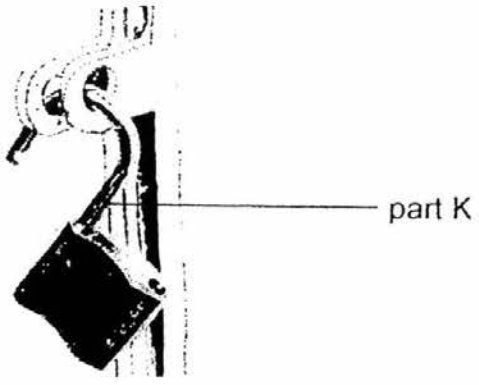
_____

(b) Suggest two other variables which Mr Lee must keep the same throughout his experiment to ensure a fair test. [1]

(i) _____

(ii) _____

30. A padlock is usually used to lock our metal grills at home.



(a) The material that is used to make part K is usually metal. Suggest a property of the material that is used to make part K and explain how this property is suitable for its use as a padlock. [1]

_____

_____

(b) Sandy wanted to buy a plastic plate for her 3-year old boy.
Suggest two advantages of buying a plate made of plastic. [2]

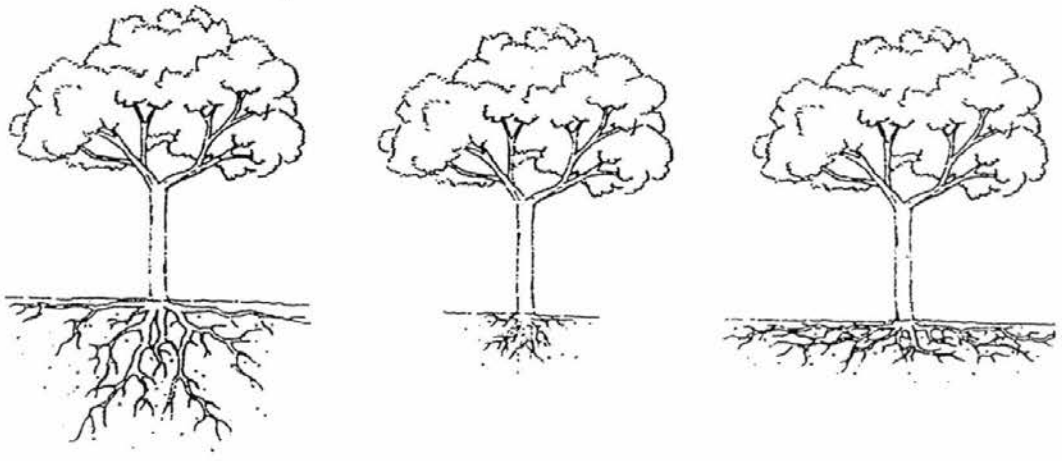
Advantage 1: _____

_____

Advantage 2: _____

_____

31. The diagrams below show three similar trees, X, Y and Z with different patterns of roots extending into the ground.



Tree X Tree Y Tree Z

(a) Based on the diagrams above, which of the trees, X, Y or Z would most likely be able to withstand a thunderstorm? Explain your answer. [2]

_____

_____

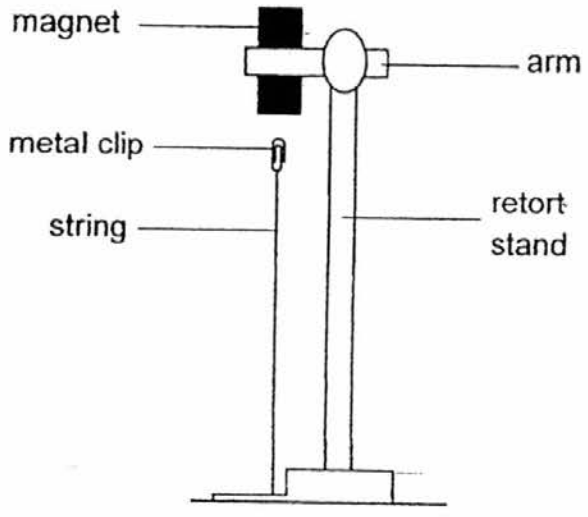
_____

(b) Tree Z is normally found in areas where there are light showers. How does the pattern of the roots of Tree Z help the plant obtain water? [1]

_____

_____

32. Pauline set up the following experiment. She clamped a magnet to the arm of a retort stand as shown. A metal clip, tied to the base of the retort by a string, remained in the air when it was brought near to the magnet.



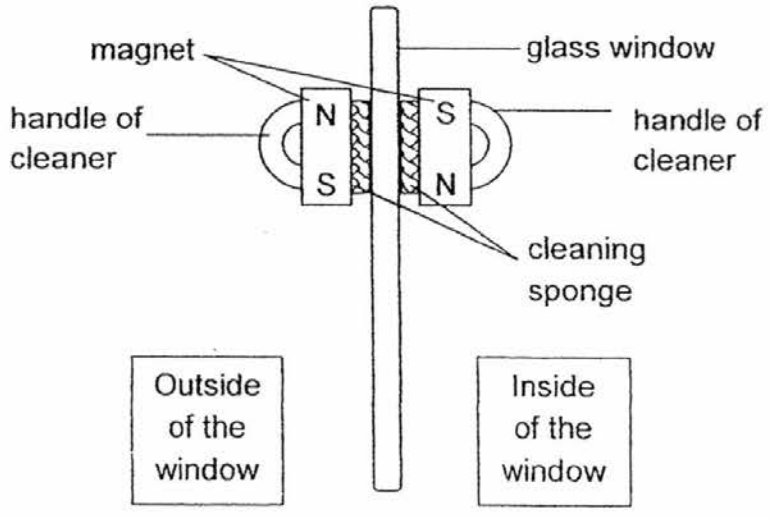
(a) Explain why the metal clip was suspended in the air. [2]

(b) Pauline then applied heat to the magnet for a few minutes. After that, she observed that the metal clip was not able to remain suspended in the air. Other than increasing the length of the string, what can she do so that the metal clip is able to remain in the air <u>without</u> adding or removing items from the above set-up? [1]

Question 32c continues on Page 24

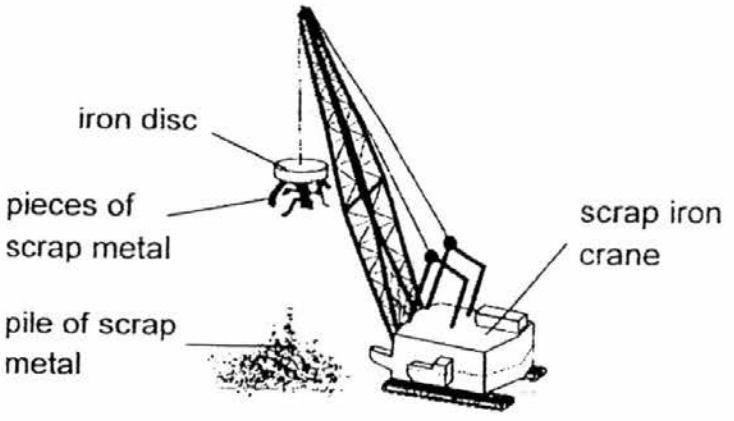
(c) Pauline then wanted to clean the outside of her glass windows. She bought a cleaning device designed to clean the outer surface of windows from the inside. The device uses two magnets as shown in the diagram below.

In order to use the cleaning device, Pauline has to hold the handle of the cleaner that is on the inside of the window and slide it up and down. The two cleaning sponges will move together.



Explain why the cleaning sponges will move together, even though they are separated by the glass. [2]

33. A scrap iron crane uses an electromagnet for moving scrap (unwanted) metals from one place to another in junk yards and recycling plants. The crane driver lowers the iron disc onto a pile of scrap metals and switches on the electricity. This causes the iron disc to become a powerful electromagnet and the scrap metals are attracted to the disc as shown below.



(a) After the crane driver moves the attracted metals to the new location within the junk yard, he switches off the electricity and this causes the pieces of scrap metal to fall onto the ground. Why did the scrap metal fall onto the ground? [1]

_____

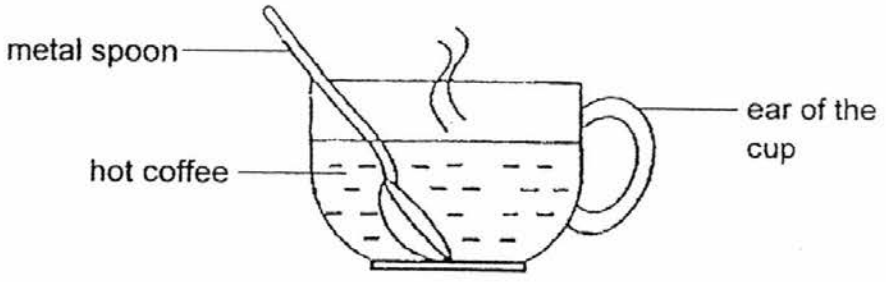
_____

(b) Can the iron disc be replaced by a permanent magnet? Explain your answer. [1]

_____

_____

34. Adrian put a metal spoon into a cup of hot coffee.



(a) Will the metal spoon feel hotter, colder or the same as the surrounding temperature when he touches the spoon with his hand a few minutes later? Explain your answer. [1]

_____

_____

(b) What will happen to the temperature of the metal spoon and the coffee after 1 day? [1]

_____

_____

(c) He realised he could hold the ear of the cup even when other parts of the cup were still hot. Suggest a reason and explain why he could hold the ear of the cup. [1]

_____

_____

35. Diagram X shows the structure of the female reproductive organ of a plant and Diagram Y shows the structure produced by the male reproductive organ of an animal.

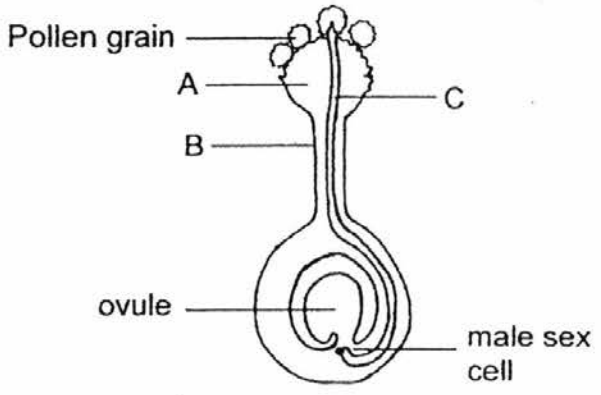


Diagram X

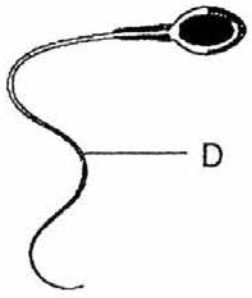


Diagram Y

(a) Identify Parts A and B. [1]

Part A: _____

Part B: _____

(b) Explain how parts C and D enable reproduction to take place in each of these structures. [2]

Part C: _____

_____

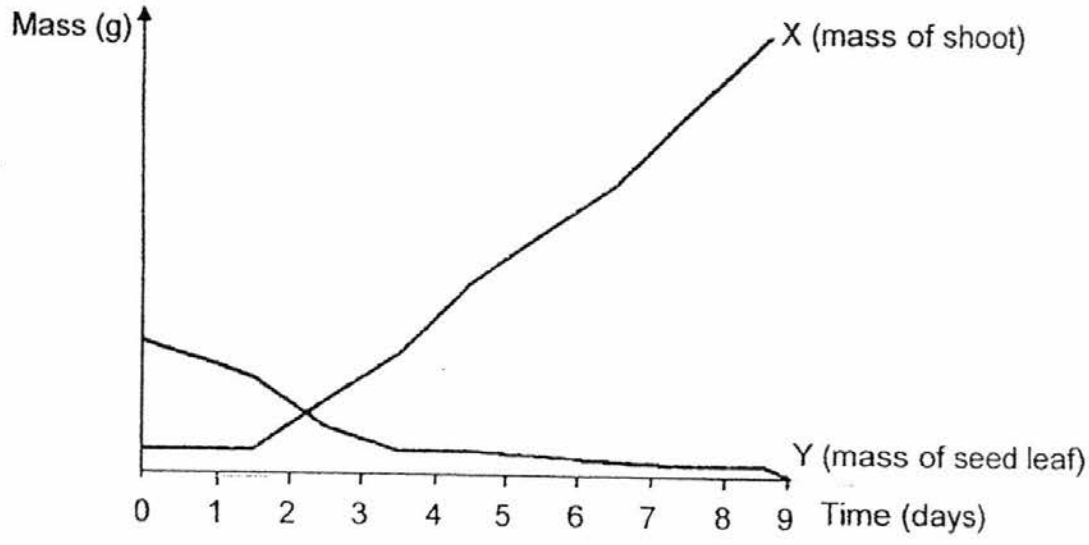
_____

Part D: _____

_____

_____

36. Jordan grew a seed as part of his Science project. He observed its progress over a period of 9 days and plotted the following graph showing the changes in the mass of the shoot and the seed leaf during the experiment



(a) What are the three conditions required for the process responsible for the change in mass shown by line X from day 1 to day 3? [1]

_____

_____

(b) Explain why there is a change in mass shown by line Y. [1]

_____

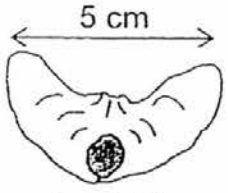
_____

(c) How did the seedling get its food from day 9 onwards? [1]

_____

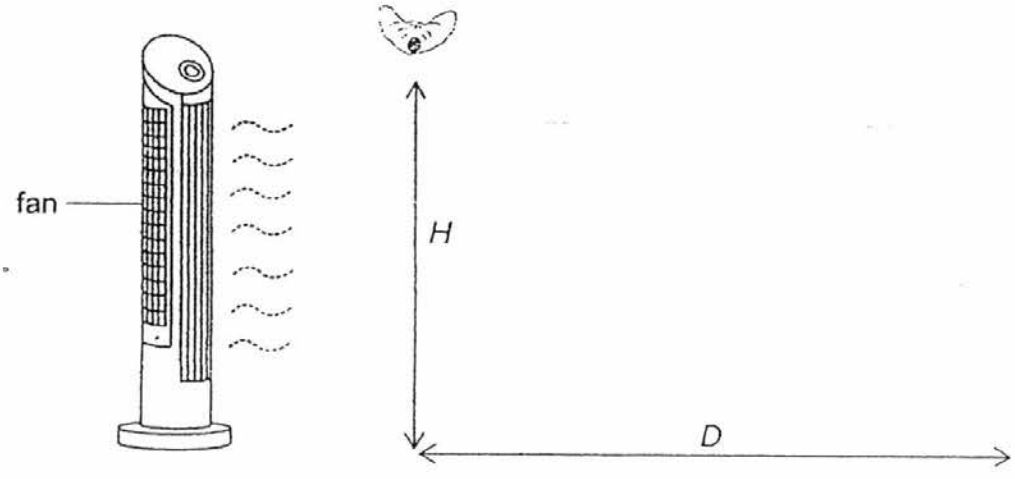
_____

37. Fernando conducted an experiment to find out how the height at which seed X is dropped affects the distance it travels. Seed X has a 5 cm wing as shown below.



Seed X

He dropped seed X from a height (*H*) in front of a fan as shown below. He measured the distance (*D*) travelled by seed X.



Seed X was dropped from different heights and Fernando's readings are shown below.

***H* (cm)**	110	90	70	50
***D* (cm)**	52	43	30	17

(a) Based on the information in the table above, what can Fernando conclude from his experiment? [1]

_____

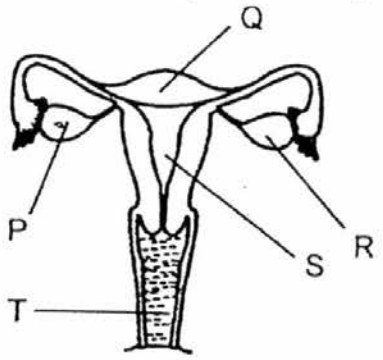
_____

Question 37b continues on Page 30

(b) Put a tick (√) in the boxes below to show the variables that need to be changed and those that should not be changed so that the experiment is a fair one. [3]

Variables	**Changed**	**Not Changed**
Type of seed		
Height at which seed is dropped		
Type of fan		
Wind speed of the fan		
Size of the wing		
Location of the experiment		

38. Study the diagram of the female reproductive system in a human.



(a) State the parts (P, Q, R, S or T) of the female reproductive system from which eggs are released. [1]

_____

(b) What would happen if two eggs are fertilised at the same time? [1]

_____

_____

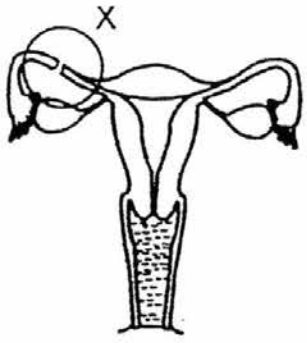
(c) Explain how Part S plays an important role after the eggs have been fertilised in the female reproductive organ. [1]

_____

_____

Question 38d continues on Page 32

(d) The diagram below shows the reproductive system of a female patient after she had undergone an operation. In this operation, the tube near the ovary was cut at **X.**



Can fertilisation still take place? Explain your answer. [1]

_____

_____

39. Benny conducted an experiment to find out how the surrounding temperature affects the splitting of 5 similar fruits, E, F, G, H and J. He placed the dried fruits in different rooms with different temperatures and recorded the results in the table below.

Dried Fruit	**E**	**F**	**G**	**H**	**J**
Temperature in the room	16°C	22°C	28°C	32°C	37°C
Time taken for fruit to split	Did not split	2 days	16 hours	8 hours	4 hours
Distance the seeds are scattered after splitting	No results	20cm	30cm	42cm	53cm

(a) Based on the results above, what can Benny conclude about the relationship between the temperature in the room and the distance the seeds are scattered after splitting? [1]

_____

_____

_____

(b) Why do fruits need to disperse their seeds? [1]

_____

_____

_____

Question 39c and d continues on Page 34

(c) Give an example of a fruit that has its seeds dispersed by the above method. [1]

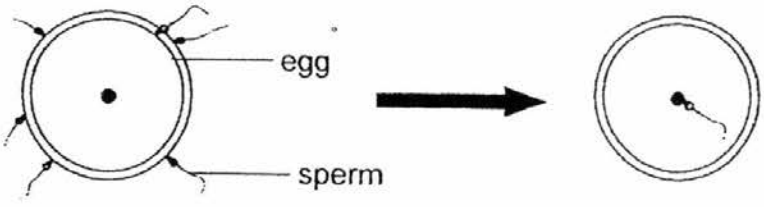
_____

(d) He also wanted to find out if the size of the fruit affects the time taken for the fruit to split. Suggest two variables that he has to keep constant when conducting this experiment. [1]

(i) _____

(ii) _____

40. The diagram below shows the fusion between two sex cells in a human.



(a) State the process that is taking place. [1]

_____

(b) What is formed after the process in (a) has taken place? [1]

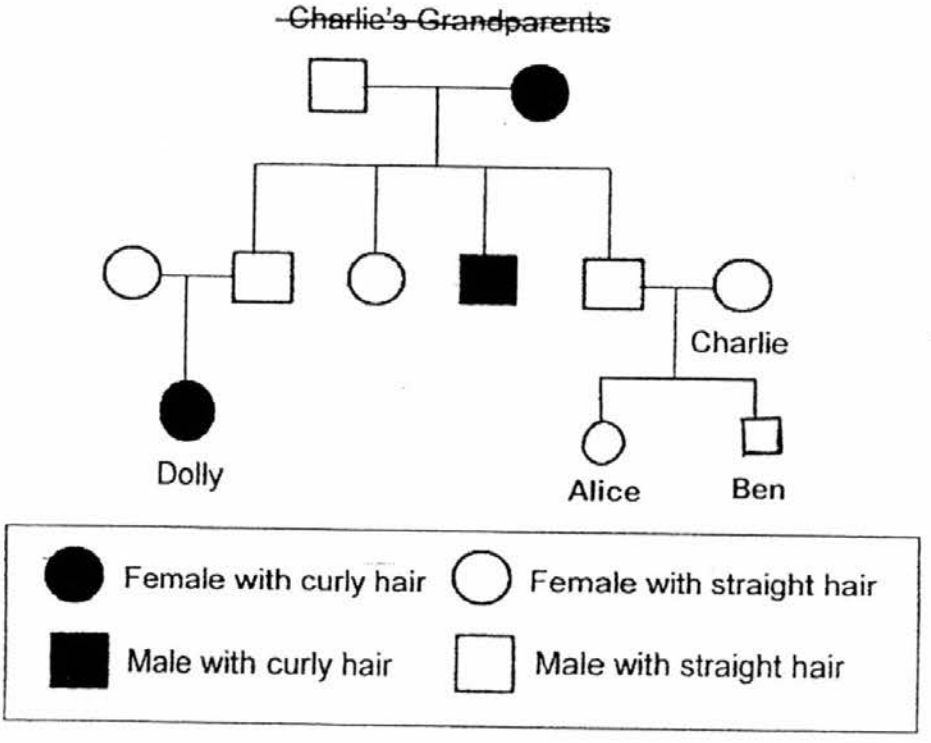
_____

(c) Which of the two sex cells above contains genetic information from the male human? [1]

_____

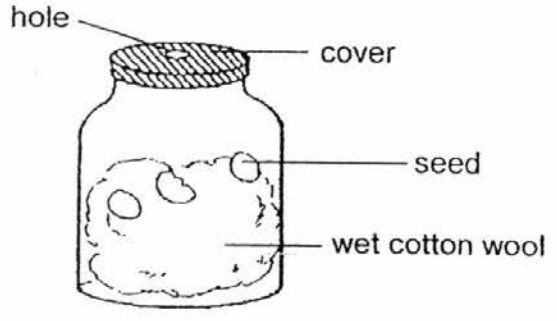
Question 40d continues on Page 35

(d) The diagram below shows Charlie's family tree.

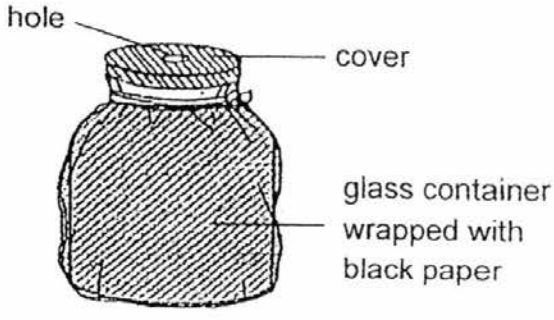


Charlie has a son and a daughter, Ben and Alice. Both Ben and Alice have straight hair. Complete Charlie's family tree by drawing and labelling in the diagram to show Charlie's son and daughter. [1]

41. Charlton carried out an experiment on the germination of seeds as shown below. In both of the set-ups, he lined two similar glass containers with cotton wool and poured equal amounts of water onto the cotton wool. He also cut a similar sized hole in the cover for each container and then wrapped the container in Set-up B with black paper. He placed 3 similar seeds onto the cotton wool in each container and left the two containers on the table for a few days.



Set-up A



Set-up B

(a) What was the aim of Charlton's experiment? [1]

_____

_____

(b) What do you think was the reason for having a hole in the cover? [1]

_____

_____

(c) After five days, Charlton noticed the seeds in Set-up A started to germinate. Would the seeds in Set-up B be able to germinate? Explain your answer. [1]

_____

_____

Question 41d continues on Page 37

(d) State **another** variable that Charlton must keep **constant** to ensure that his test is a fair one. [1]

_____

_____

End of Paper

YEAR : 2016
LEVEL : PRIMARY 5
SCHOOL : PEI HWA PRESBYTERIAN PRIMARY
SUBJECT : SCIENCE
TERM : CA1

Booklet A

Q1	3	Q5	2	Q9	2	Q13	4	Q17	4	Q21	2	Q25	3
Q2	4	Q6	3	Q10	2	Q14	1	Q18	2	Q22	1	Q26	2
Q3	2	Q7	1	Q11	3	Q15	4	Q19	2	Q23	3	Q27	2
Q4	2	Q8	3	Q12	2	Q16	4	Q20	1	Q24	2	Q28	1

Booklet B

Q29a S, T, R

Q29b (i) The thickness of the string.
(ii) The mass of each pan.

Q30a It is strong. It cannot be broken easily.

Q30b Advantage 1: Plastic would not break easily.
Advantage 2: It is light in weight.

Q31a Tree X. Tree X has more roots to hold the tree more firmly to the ground.

Q31b The roots spread out on the surface to collect water when it rains.

Q32a The magnet attracted the metal clip and causes it to be suspended in the air as the string was not long enough.

Q32b Move the magnet closer to the metal clip.

Q32c Unlike poles facing each other, therefore the magnets attracted and the magnetism can pass through the glass.

Q33a The magnetism was off, causing the iron disc to lose the magnetism to attract the metals.

Q33b No. If the permanent magnet attract the metals, it would not be able to release the metals as it cannot be off or on.

Q34a Hotter. The metal spoon has gained heat from the hot coffee.

Q34b The temperature of the metal spoon and the coffee would be the same as the surrounding temperature.

Q34c The ear of the cup was made of a poor conductor of heat and does not allow heat to pass through easily.

Q35a Part A: Stigma
Part B: Style

Q35b Part C: It acts as a channel to transport the male sex cell to the female sex cell.
Part D: It helps the sperm to swim faster to reach the egg.

Q36a Water, oxygen and warmth.

Q36b The seed took the food provided by the seed leaf. Hence, the mass of the seed leaf decreased in mass.

Q36c It has leaves to help it trap sunlight and make food.

Q37a The higher the height at which seed X is dropped, the further the distance it travels.

Q37b

Variables	Changed	Not Changed
Type of seed		✔
Height at which seed is dropped	✔	
Type of fan		✔
Wind speed of the fan		✔
Size of the wing		✔
Location of the experiment		✔

Q38a Parts P and R.

Q38b There would be a pair of twins.

Q38c It keeps the developing baby safe.

Q38d Yes. Only one tube was cut so the other tube can continue fertilisation.

Q39a The higher the temperature in the room, the distance the seeds are scattered after splitting would be further.

Q39b It is to ensure that there is no competition for space, sunlight, water and nutrients.

Q39c Rubber

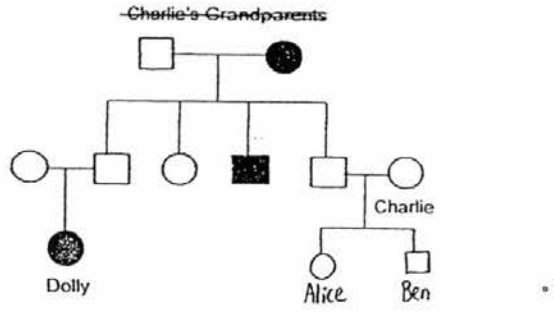
Q39d (i) The temperature of the room.
(ii) Type of fruit.

Q40a Fertilisation

Q40b A foetus

Q40c The sperm

Q40d



Q41a He wanted to find out if seeds need light to germinate.

Q41b To allow air to enter for the seed to germinate.

Q41c Seeds need only air, warmth and water to germinate.

Q41d The location of his experiment.

End