

SINGAPORE CHINESE GIRLS' SCHOOL (PRIMARY)

FIRST SEMESTRAL ASSESSMENT 2015

NAME: _____ ()

DATE: _____

CLASS: PRIMARY 6

**SCIENCE
BOOKLET A**

30 questions

60 marks

Total time for Booklets A & B: 1 h 45 min

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

FOLLOW ALL INSTRUCTIONS CAREFULLY.



Part I (60 marks)

For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. Patrick put 10 goldfish in a fish tank and fed them every day. The graph below shows the number of goldfish in the tank over the next few months.



The graph shows that living things _____.

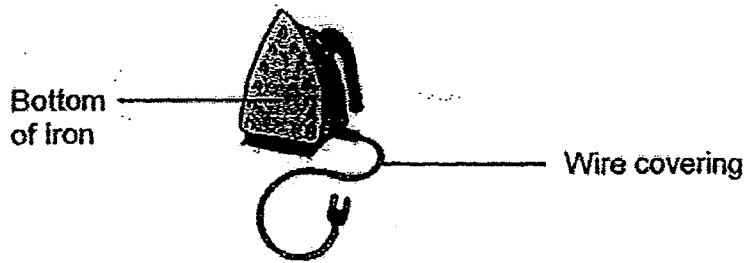
- 1) grow
 - 2) reproduce
 - 3) respond to changes
 - 4) need air, food and water
2. The table below shows information about 2 animals, X and Y.

Animal	Number of legs				Method of reproduction	
	0	2	4	6	Lays eggs	Gives birth
X			✓			✓
Y		✓			✓	

What outer coverings do animals X and Y most likely have?

	Animal X	Animal Y
1)	Feathers	Shell
2)	Scales	Hair
3)	Shell	Scales
4)	Hair	Feathers

3. Below is a picture of an iron.



Which of the following is suitable for making the wire covering and bottom of the iron?

	Bottom of iron	Wire covering
1)	plastic	iron
2)	iron	plastic
3)	glass	cloth
4)	iron	wood

4. Which of the following is not correct?

	System	Parts that belong to the system
1)	Circulatory	heart, blood, blood vessels
2)	Skeletal	skull, ribcage, small intestine
3)	Digestive	large intestine, anus, stomach
4)	Respiratory	lungs, nose, windpipe

5. Four children were shown a picture of a human stomach as shown. They made the following statements about it.



Albert: Saliva is secreted in the stomach.

Betty: The stomach is connected to the small intestine.

Clara: The stomach is partly responsible for food digestion.

Dennis: The stomach lies between the anus and large intestine.

Which of the children have given correct statements about the stomach?

- | | |
|----------------------|---------------------|
| 1) Albert and Betty | 3) Betty and Clara |
| 2) Albert and Dennis | 4) Clara and Dennis |

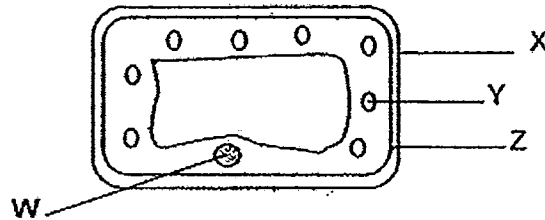
6. Ethan, Francesca, Gail and Henry each received a slide from their teacher to observe under a microscope. They recorded the parts of the cells observed in the following table.

	Parts of cells
Ethan	Nucleus, cytoplasm
Frankie	Nucleus, cell membrane, cell wall
Gail	Cytoplasm, chloroplasts, cell wall
Hallie	Cell membrane, nucleus, cytoplasm

Which pupil/s could most likely have observed plant cells?

- 1) Frankie only
 2) Ethan and Gail only
 3) Frankie and Gail only
 4) Ethan and Hallie only

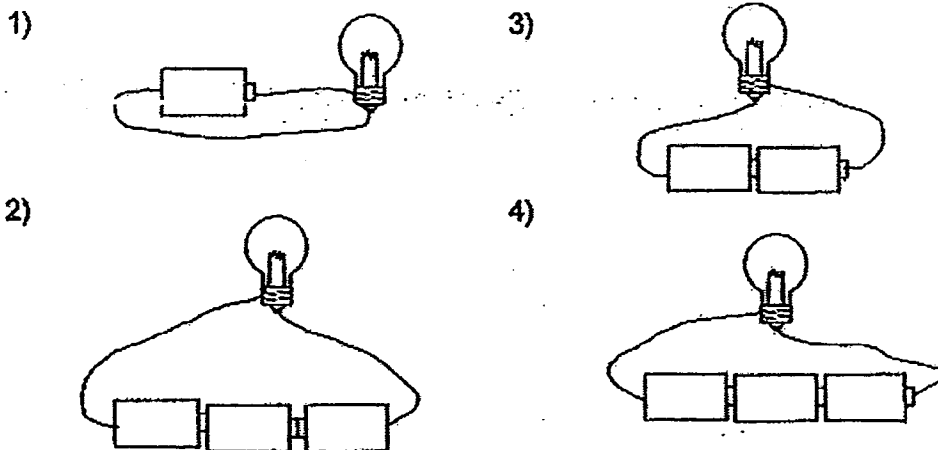
7. The diagram below shows a typical plant cell.



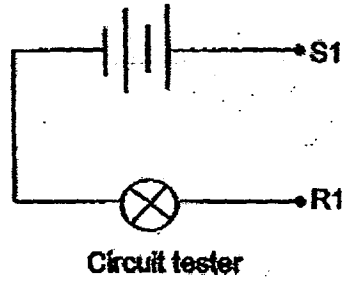
Which of the following matches the parts to the functions correctly?

Parts	Function
1) Z	Controls substances going in and out of cell
2) W	Contains green pigment needed for photosynthesis
3) Y	Contains genetic information and controls all activities
4) X	Most cell activities take place in this jell-like substance

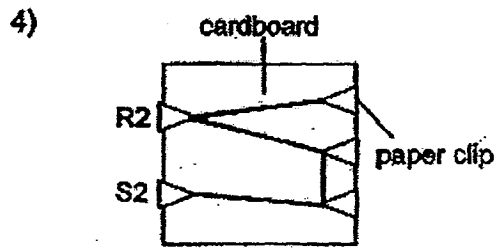
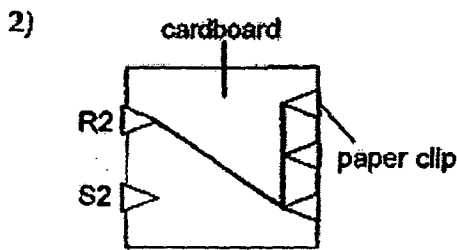
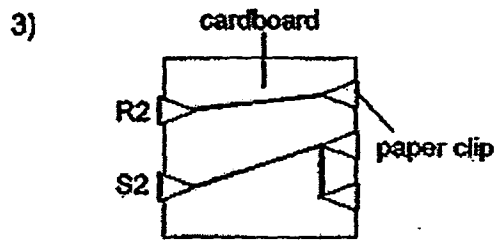
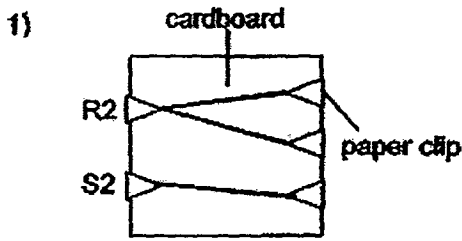
8. Which bulb in the following electric circuits would light up the brightest?



9. Isaac conducted an experiment with a circuit tester and some circuit cards.



When R1 is connected to R2 and S1 is connected to S2, the bulb lit up. Which of the following circuit cards did Isaac use?



10. Study the table below.

	Habitat A	Habitat B	Habitat C	Habitat D
Temperature	26°C	5°C	38°C	29°C
Soil	Garden	Garden	Sand	Clay
Moisture	10%	3%	3%	88%
Sunlight	Moderate	Plenty	Little	Little

In which of the above habitats is the earthworm most likely to be found?

- 1) Habitat A
- 2) Habitat B
- 3) Habitat C
- 4) Habitat D

11. Which of the following animals can be found living in the same community?

- A: Deer C: Mudskipper
B: Hermit crab D: Whale

- 1) A and B 3) B and C
2) A and D 4) C and D

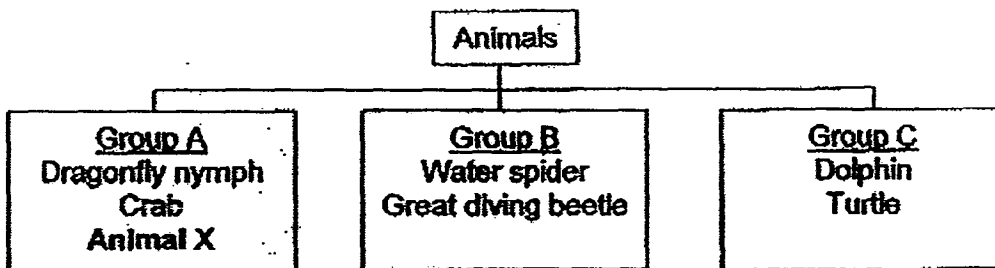
12. Rachael observed 4 living things, W, X, Y and Z and wrote down the following statements.

W feeds on Y.
Z feeds on W.
Y gets food from X.
Z feeds on Y but not X.

Which one of the following classifications is correct?

	Prey	Predator	Prey and Predator	Producer
1)	W	Z	Y	X
2)	X	Y	W	Z
3)	Y	Z	W	X
4)	Z	X	Y	W

13. Study the classification diagram below.



Which one of the following could Animal X be?

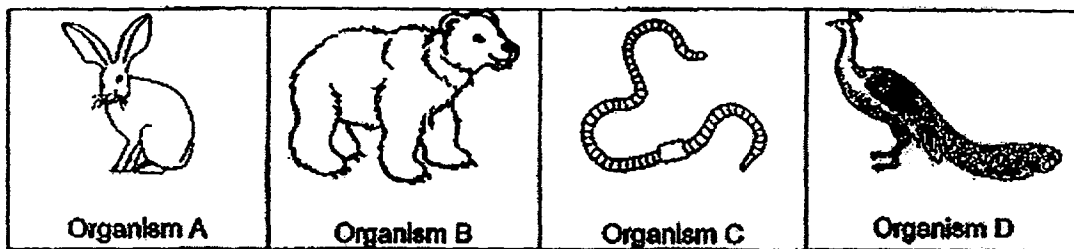
- 1) Tadpole 3) Frog
2) Mosquito larva 4) Crocodile

14. Susan has a papaya tree and 2 apple trees in her garden. There are also a hen and 3 chicks. Recently, she found some caterpillars on the leaves of her trees. There is also a pond in her garden where water hyacinths, tilapia and carps are found.

How many populations of organisms are present in Susan's garden?

- 1) Five
- 2) Seven
- 3) Eight
- 4) Eleven

15. 4 children were given 4 pictures of organisms. They were asked which organism would be able to survive the high temperature in the desert. They were also asked to provide a reason for their answer. Below are the pictures of the organisms and responses of the 4 children.

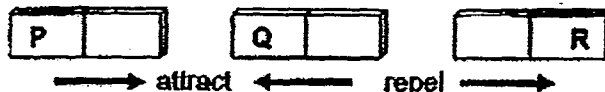


	Organism	Reason
Kelly:	B	It can easily kill its prey with its sharp claws.
Larry:	C	It will hide underground to feed on dead leaves.
Mark:	D	It will fluff up its feathers to trap its body heat.
Nancy:	A	It has more exposed surface area in its ears to lose heat.

Which of the children is correct?

- 1) Kelly
- 2) Larry
- 3) Mark
- 4) Nancy

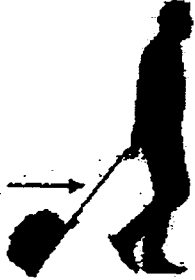
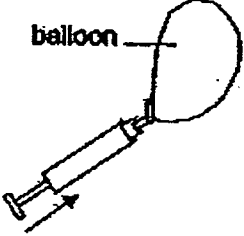

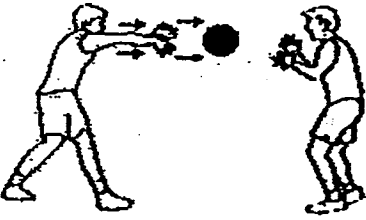
16. The diagram below shows 3 magnets.



What are the poles marked P and R?

	P	Q	R
1)	North pole	North pole	North pole
2)	North pole	South pole	South pole
3)	South pole	South pole	North pole
4)	South pole	North pole	South pole

17. Which of the following is matched wrongly?

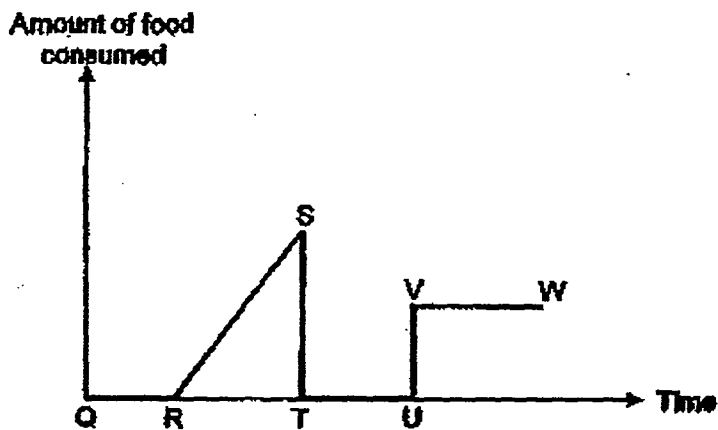
	Action	Pull only	Push only
1)		✓	
2)			✓
3)		✓	
4)			✓

18. A 7-cm spring was stretched when different weights were hung from it. The extensions of the spring were recorded in the table below.

Weight (g)	10	20	30	50
Extension (cm)	2	4	6	10

What would be the total length of the spring when a 40g weight is hung on it?

- 1) 8 cm
 - 2) 13 cm
 - 3) 15 cm
 - 4) 17 cm
19. Faris studied Animal X which ate upon hatching. He observed the amount of food consumed during the different stages of its life cycle. He plotted his observation in the graph below.



Which of the following statements based on the graph are true?

- A: Animal X has 4 stages in its life cycle.
- B: Point Q shows when the young of Animal X has hatched.
- C: Line UV shows when the young of Animal X becomes an adult.
- D: Line RS shows the pupa stage of Animal X.

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

20. Three plants, F, G and H were planted on a piece of land as shown in Diagram M. Diagram N shows the same piece of land a few years later.

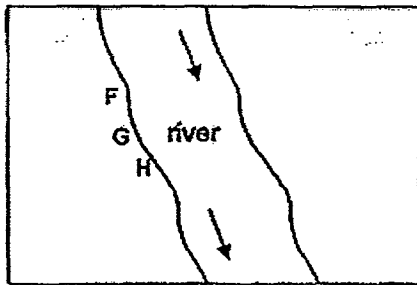


Diagram M

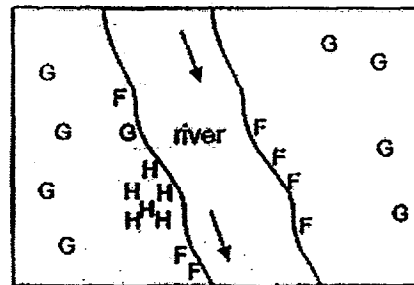
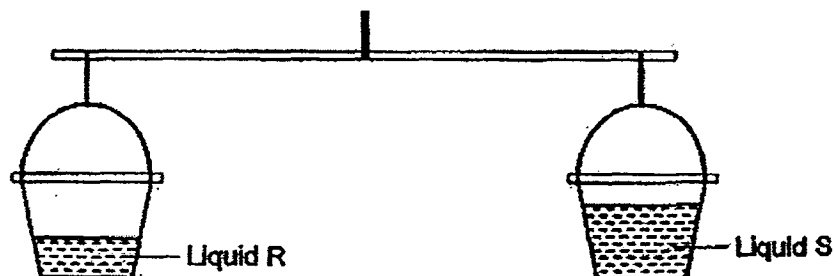


Diagram N

Based on the above diagrams, which of the following characteristics are correctly matched to the fruits or seeds of Plants F, G and H?

	F	G	H
1)	light	hooks	fibrous husk
2)	fibrous husk	wing-like structure	edible
3)	edible	wing-like structure	pod-like
4)	fibrous husk	hooks	pod-like

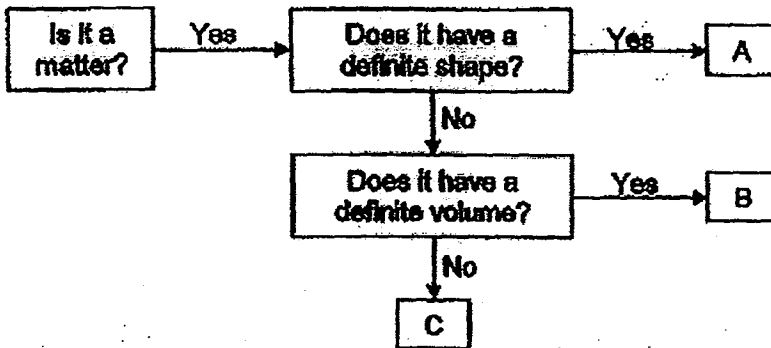
21. Pete was given 2 kinds of liquid, R and S. He filled a bucket with 500ml of liquid R and another with 1000ml of liquid S. He then hung them on a balance rod. The diagram below shows the result he observed.



Which of the following statements is true if equal volumes of liquid R and liquid S are compared?

- 1) Liquid R will have more mass than liquid S.
- 2) Liquid R will have lesser mass than liquid S.
- 3) Liquid R will occupy less space than liquid S.
- 4) Liquid R will occupy more space than liquid S.

22. Study the flow chart below carefully.



milk	vinegar
flour	nitrogen
sponge	petrol

How many of the items in the table above can be placed at B?

- | | |
|------|------|
| 1) 1 | 3) 3 |
| 2) 2 | 4) 4 |

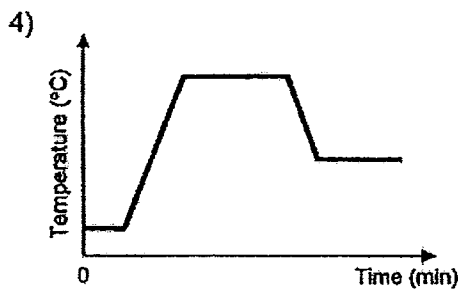
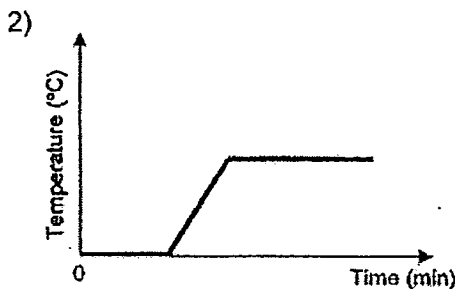
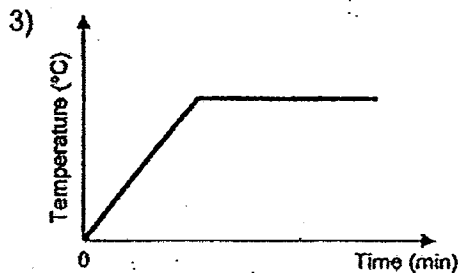
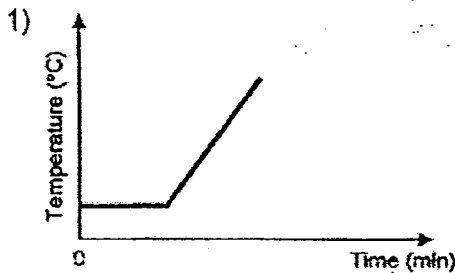
23. Study the table below carefully.

	Substance A	Substance B	Substance C
Melting point	35°C	-10°C	-45°C
Boiling point	120°C	60°C	23°C

Which of the following correctly shows the states of Substances A, B and C at 30°C?

	A	B	C
1)	solid	gas	liquid
2)	solid	liquid	gas
3)	liquid	liquid	solid
4)	liquid	solid	gas

24. Judy melted some ice cubes in a beaker. She left the beaker in the Science room for 90 minutes. She plotted a graph to show her results. Which of the following graphs did she plot?



25. Muthu conducted an experiment with 3 identical containers one day. He poured 250 ml of water into each container and recorded the amount of water left in the table below.

Containers	Location of container	Amount of water left (ml)
A	Science room	158
B	Open field	100
C	Refrigerator	226

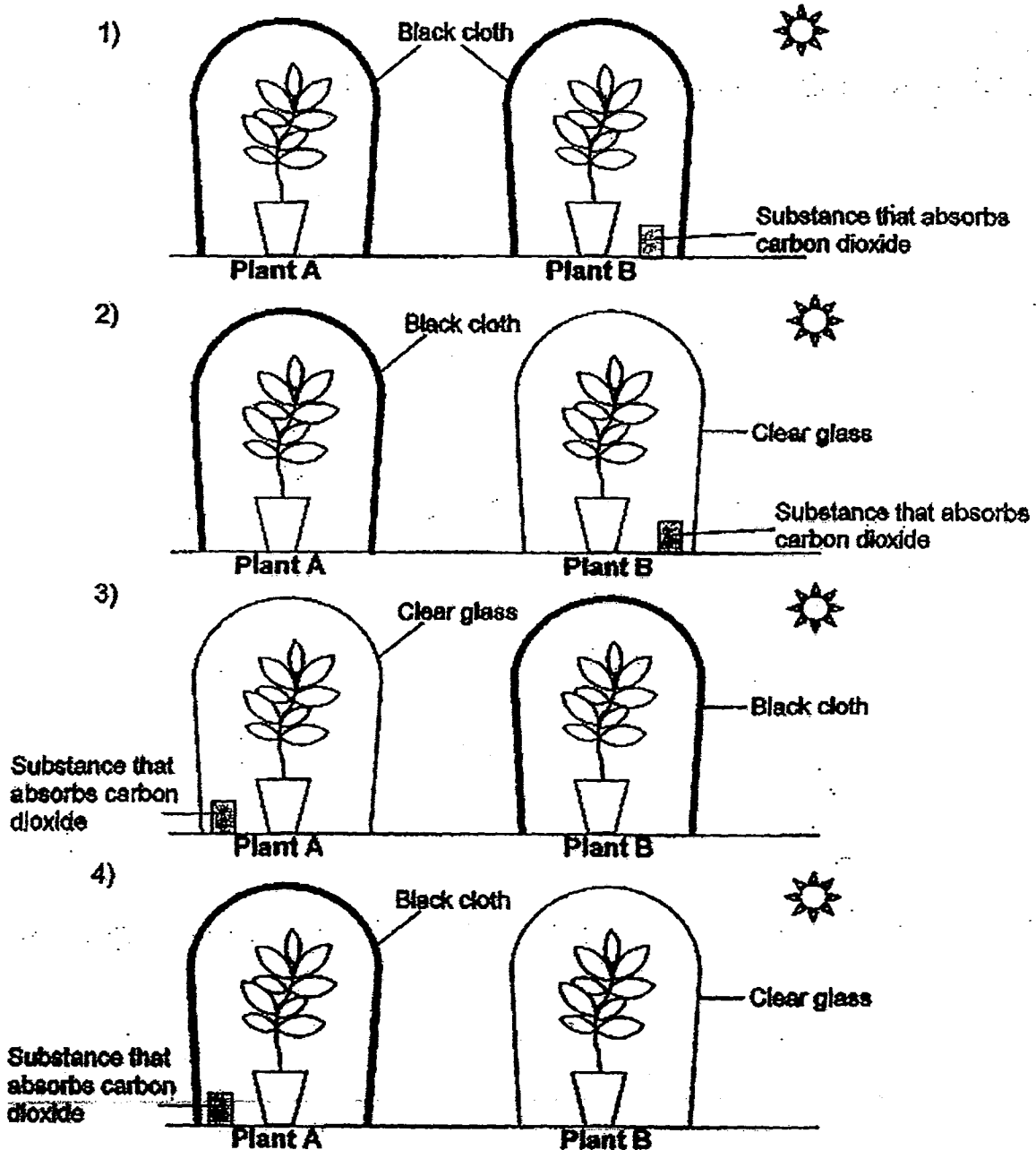
Which of the following correctly shows the aim of Muthu's experiment and the constant variable?

	Aim of experiment	Constant variable
1)	To find out if the amount of exposed surface area affects the amount of water left in the container	Amount of water left
2)	To find if the location of experiment affects the temperature of the surroundings	Duration of experiment
3)	To find out if temperature of surroundings affects the rate of evaporation	Duration of experiment
4)	To find out if the amount of exposed surface area affects the amount of water left in the container	Shape of containers

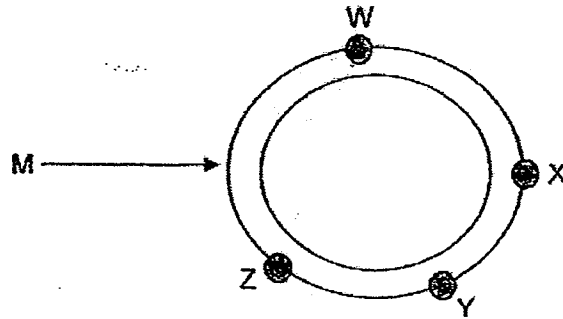
26. Lily dropped a few drops of iodine solution on 2 leaves, each taken from 2 pots of plants, A and B. She observed the colour change of the iodine solution on both leaves and recorded her observations in the table below. Iodine solution changes from brown to dark blue in the presence of starch.

Plant	Results
A	Iodine solution remains brown
B	Iodine solution turns dark blue

Which of the following were the set-ups which Lily had used for her experiment?

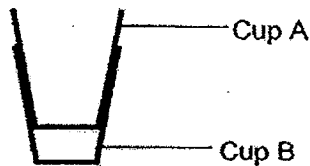


27. Zach set up the following experiment. He placed 4 drops of wax in the positions as shown in the metal ring below. He heated the rings at Position M.



Which of the following shows the correct order of the time taken by the wax to melt in descending order?

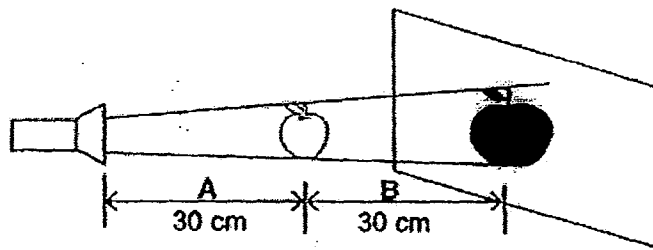
- 1) WXYZ
 - 2) ZWYX
 - 3) XYWZ
 - 4) XWYZ
28. Sammy had accidentally stacked 2 glass cups together. Now, a part of each cup is stuck together. He wants to separate them.



Which of the following methods should Sammy use?

- 1) Put ice in cup A and immerse cup B in ice.
- 2) Fill cup A with hot water and immerse cup B in hot water.
- 3) Fill cup A with hot water and immerse cup B in cold water.
- 4) Fill cup A with cold water and immerse cup B in hot water.

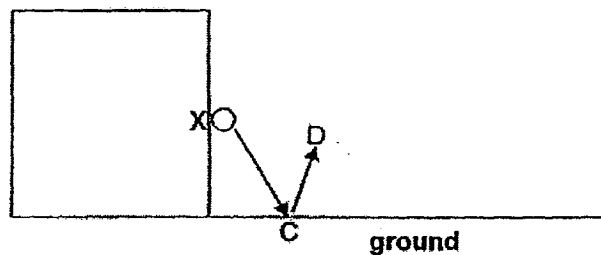
29. Yanti cast a shadow of an apple on a screen.



Which of the following actions would definitely increase the size of the shadow?

	Distance A	Distance B
1)	Increase by 15 cm	Decrease by 5 cm
2)	Increase by 10 cm	Increase 10 cm
3)	Decrease by 15 cm	Increase by 5 cm
4)	Decrease by 15 cm	Decrease by 15 cm

30. Ryan threw a basketball from the second storey of a building. The second storey is marked X. The ball bounced back as shown in the diagram below.



Which of the following describes the changes in the energy from C to D?

	Kinetic energy	Potential energy
1)	increases	increases
2)	increases	decreases
3)	decreases	increases
4)	decreases	decreases

End of Booklet A

SINGAPORE CHINESE GIRLS' SCHOOL (PRIMARY)

FIRST SEMESTRAL ASSESSMENT 2015

NAME: _____ ()

DATE: _____

CLASS: PRIMARY 6

Parent's Signature:

SCIENCE

BOOKLET B

	Total Actual Marks	Total Possible Marks
Booklet A		60
Booklet B		40
Total		100

14 questions

40 marks

Total time for Booklets A & B: 1 h 45 min

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

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Name: _____ ()

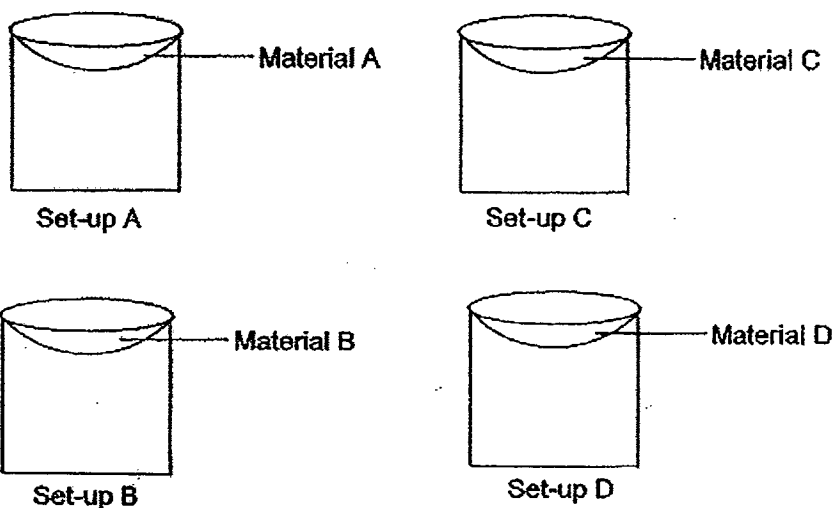
Date: _____

Class: Primary 6

Part II (40 marks)

Answer all the following questions.

31. Jeremy set up an experiment as shown below. He poured the same amount of oil onto each material. Oil was then collected in each container. The materials were of similar mass and size.

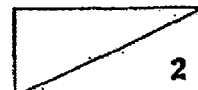


He recorded the mass of the materials at the end of the experiment and tabulated the results in the table below.

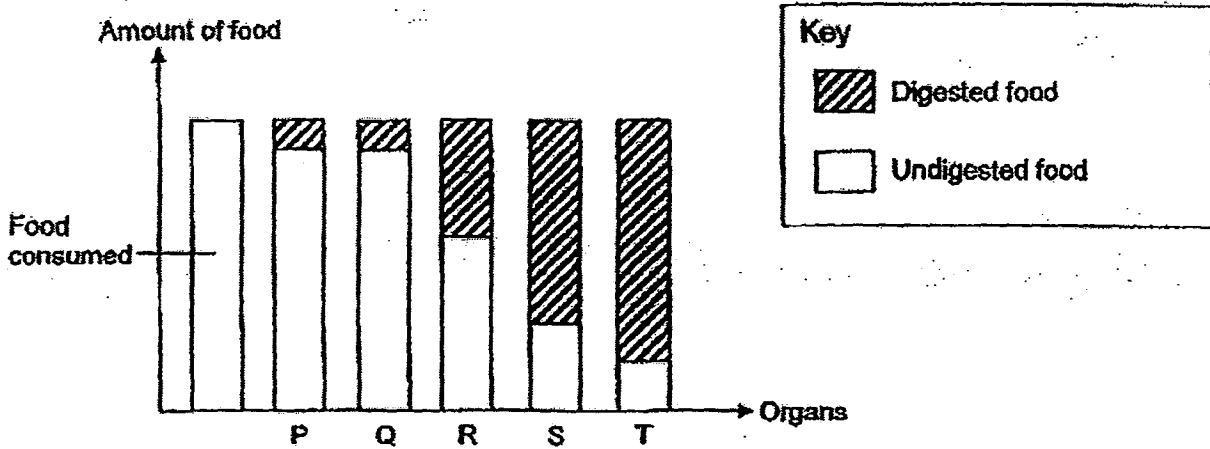
Set-ups	Amount of oil poured (ml)	Mass of material (g)
A	50	28
B	50	35
C	50	14
D	50	42

- a) Name the apparatus which Jeremy could have used to collect the data. [1]

- b) Which material is most useful as a rag in the kitchen? Explain your answer. [1]



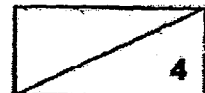
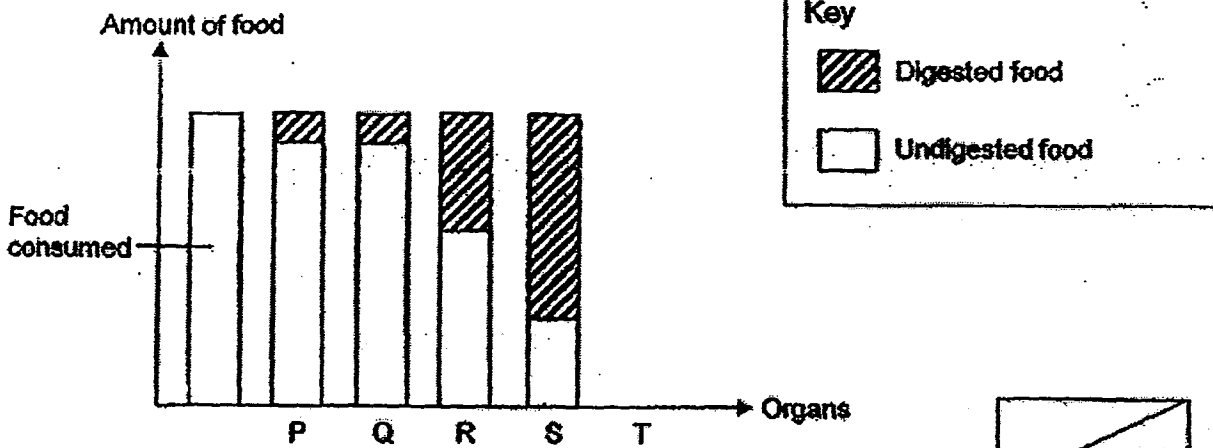
32. The graph below shows the amount of digested and undigested food in organs, P, Q, R and S, of the digestive tract after some food is consumed. P, Q, R and S are in sequence.



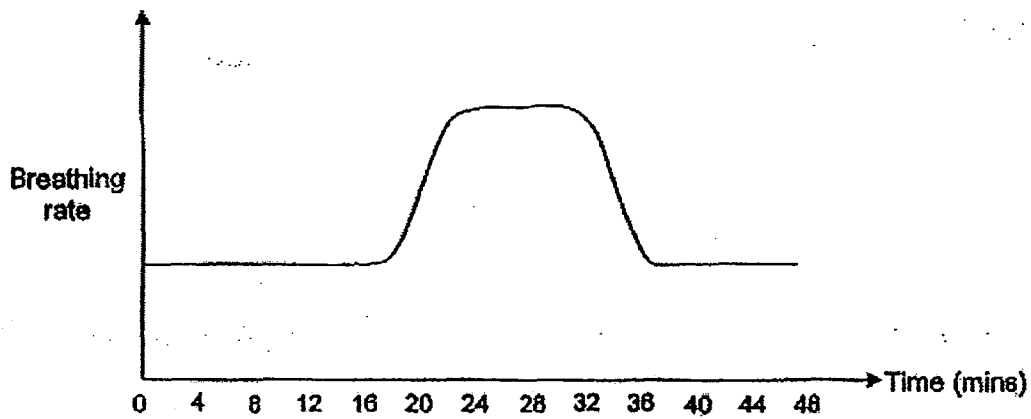
- a) What is organ Q likely to be? [1]

- b) Give 2 reasons why the graph for organ T is incorrect. [2]

- c) On the graph below, draw the correct bar graph to show the type and amount of food in Organ T of the digestive tract. [1]



33. The diagram below shows Peter's breathing rate over a period of time.

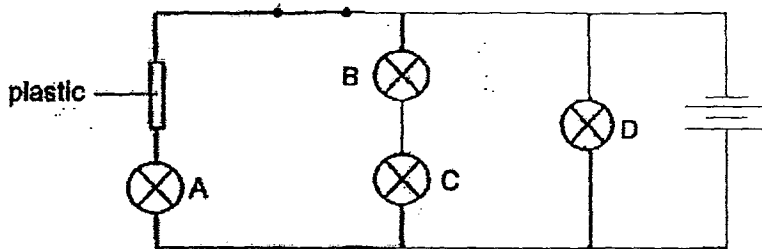


a) What could Peter be doing to cause the change in his breathing rate between 20th and 32nd minutes? [1]

b) Explain why his breathing rate was greater while he was doing the activity in part (a). [1]



34. Look at the circuit diagram below.

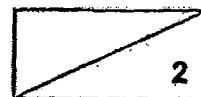


There are 4 similar bulbs, A, B, C and D in the circuit.

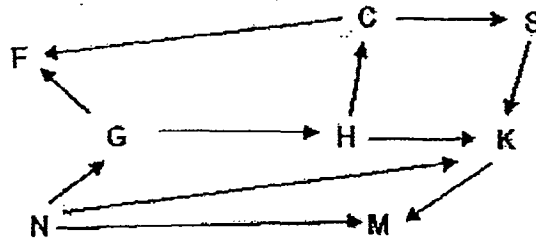
Below are 4 statements based on the above circuit.
Put a tick (✓) to indicate if each state is true or false.

[2]

	Statements	True	False
(i)	Bulb C is dimmer than Bulb D.		
(ii)	Bulb D will not light up if S1 is open.		
(iii)	Bulbs B and C will have equal brightness.		
(iv)	Bulb A did not light up.		



35. Study the food web below.

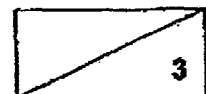
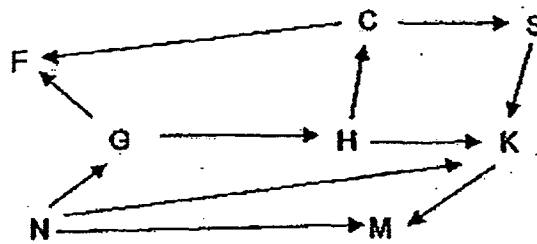


a) How many carnivores and omnivores are there in the above food web? [1]

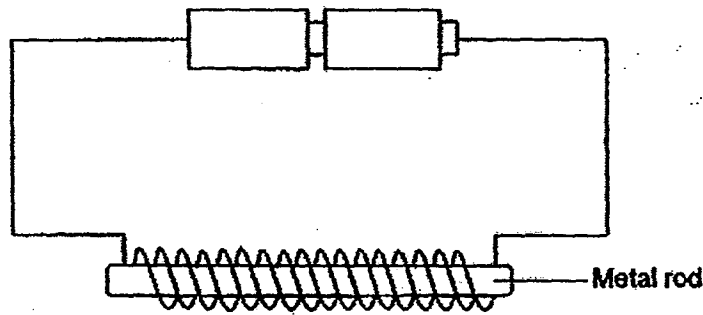
Carnivore	
Omnivore	

b) Based on the above food web, write down the food chain/s that consist/s of the least number of organisms. [1]

c) A few months later, it was discovered that an organism L had migrated into the community. It preyed on organisms F and C. Draw organism L in the food web below. [1]



36. Matthew prepared the set up below.



He carried out the experiment with 2 metal rods, A and B, made of different materials. He sprinkled some iron filings around each rod.

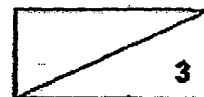
He concluded that Rod A was an electromagnet but Rod B was not.

a) What observation had Matthew made to come to such a conclusion? [2]

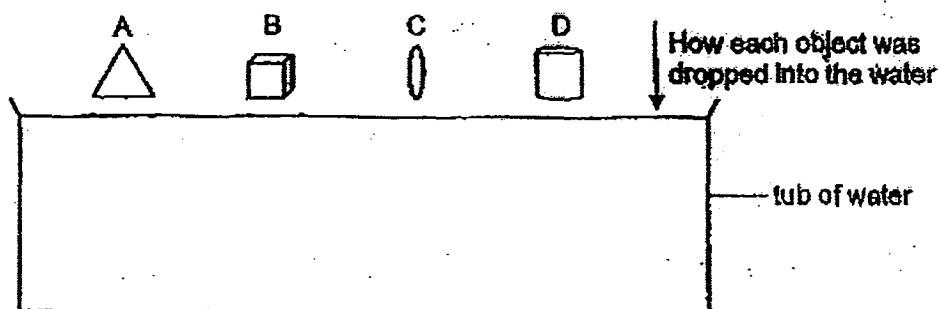
Rods	Observation
A	
B	

b) Based on Matthew's conclusion, name a possible material for rods A and B. [1]

Rods	Possible material
A	
B	

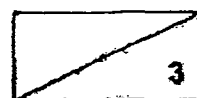


37. Steve and his 3 friends dropped 4 objects with different shapes but made of the same material into a tub of water as shown below. They recorded the time taken for each shape to travel through the water to reach the bottom of the tub in the table below.

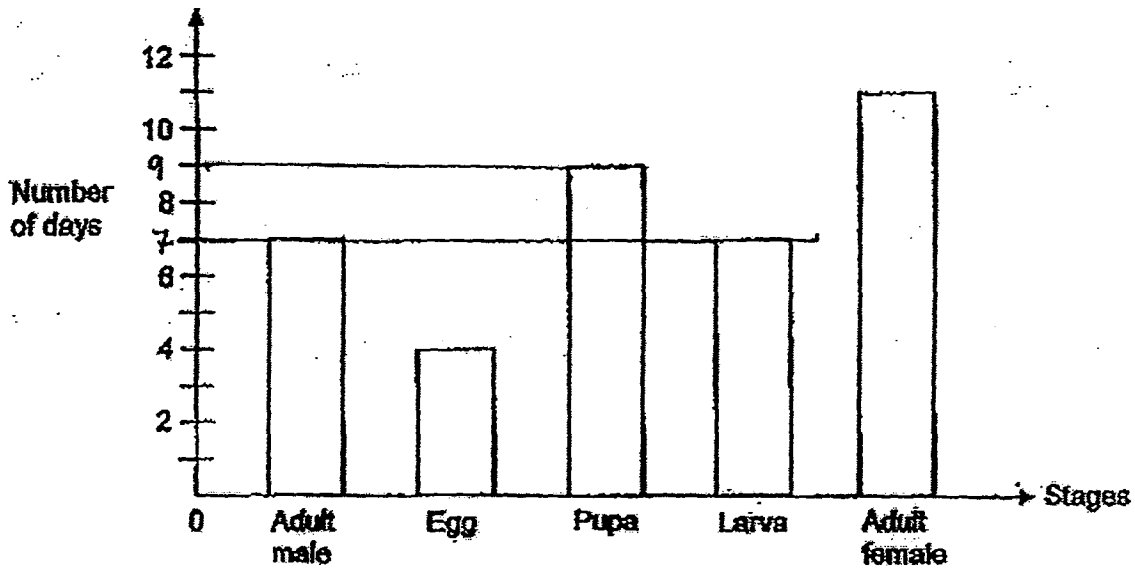


Shape	Time taken to reach bottom of tub (s)
A	2.1
B	0.65
C	2.0
D	1.7

- a) Steve's teacher told him that 2 of his results were incorrect. Circle the incorrect results in the table above. [1]
- b) Explain your answer in (a). [2]



38. Nancy studied the life cycle of Animal Q. She recorded the number of days for each stage of its life cycle. Her results are shown in the graph below.

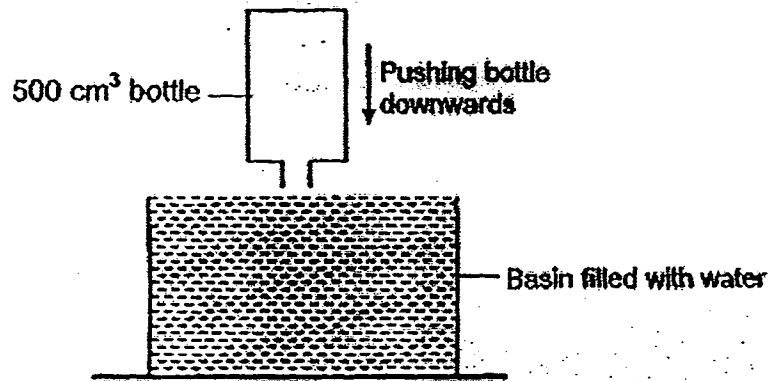


- a) How many days does it take for Animal Q to become an adult after the egg has hatched? [1]

- b) The adult male of Animal Q dies soon after it fertilises the eggs inside the adult female's body. Explain why the adult females generally live longer than the adult male. [1]



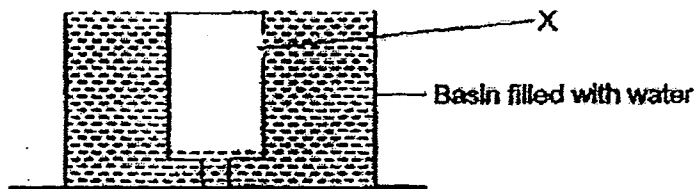
39. Winnie was given a 500 cm^3 bottle and a basin filled with water to its brim. She then pushed the bottle downwards fully into the water.



- a) Winnie observed that some water spilled out. Explain why. [1]

- b) Winnie found out that only 470 cm^3 of water had spilled out. Explain why. [1]

- c) Winnie then made a hole at Part X of the bottle as shown below.



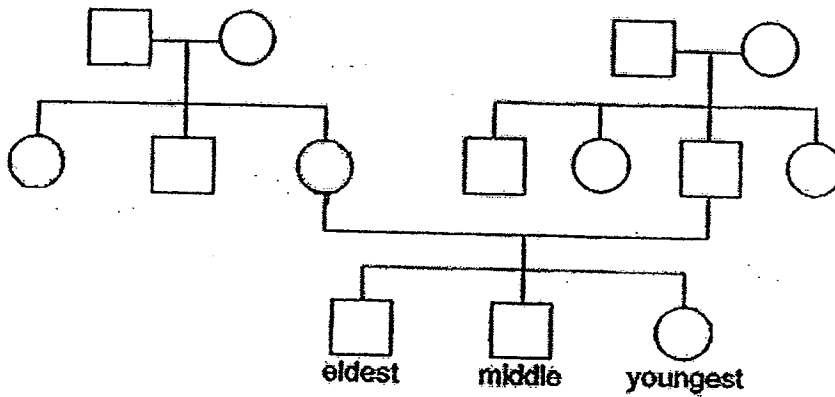
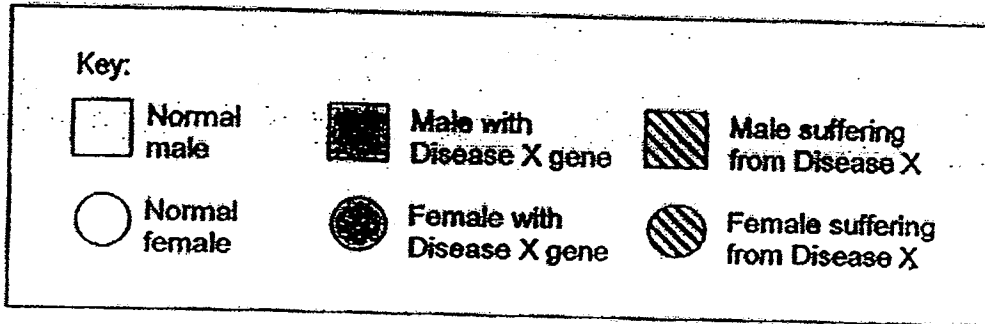
- 30 minutes later, she noticed that the water in the basin had dropped. Explain how this could have happened. [2]



40. Sally and her maternal grandfather suffer from Disease X. No one else in her immediate or extended family suffers from Disease X. However, her mother, middle brother and maternal aunt carry the Disease X gene.

The family tree below is missing the above information.

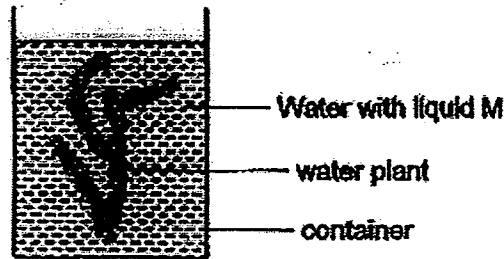
- a) Represent the above information by shading or colouring the correct keys in the family tree. Use the key given below. [2]



- b) How many paternal uncles does Sally have?

[1]

41. Farah wanted to find out if water plants affect the amount of carbon dioxide in water at different times of the day. She used the set-up below.

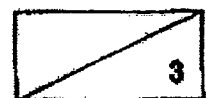


She placed the set-up near the window and added a few drops of liquid M to the water. Liquid M changes colour as shown below.

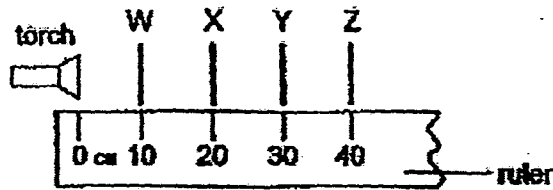
Amount of carbon dioxide in water	Less than normal	Normal	More than normal
Colour of Liquid M	yellow	red	purple

- a) What would the colour of liquid M be at midday? Explain your answer. [2]

- b) What would the colour of liquid M if Farah had conducted the experiment in a dark room? [1]

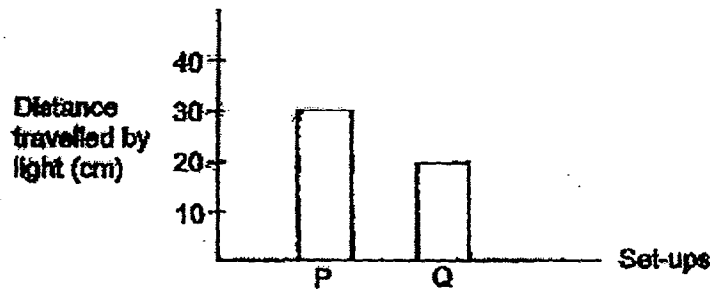


42. Ivan conducted an experiment to investigate if light can pass through 4 sheets of different materials, W, X, Y and Z using the set-up below.



The distance travelled by the light was recorded as 40 cm and Ivan concluded that material Z was opaque.

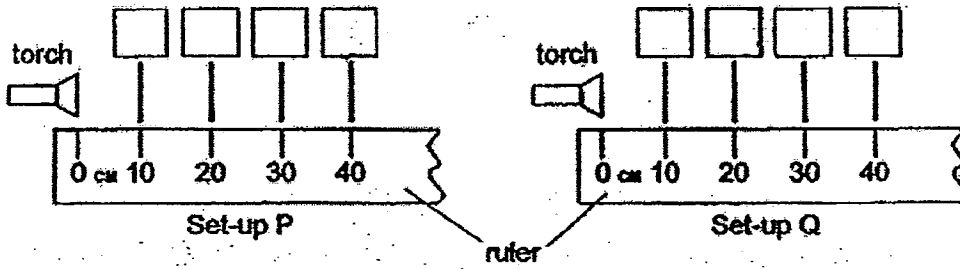
He carried out a similar experiment with 4 different sheets, A, B, C and D, made of different materials. The sheets were arranged in 2 set-ups, P and Q. The distance travelled by the light for each set-up was measured and the results are shown in the chart below.



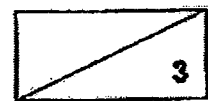
Based on the above results, Ivan presented his conclusions about the materials in the table below.

Does it allow light to pass through?			
A	B	C	D
yes	not sure	no	yes

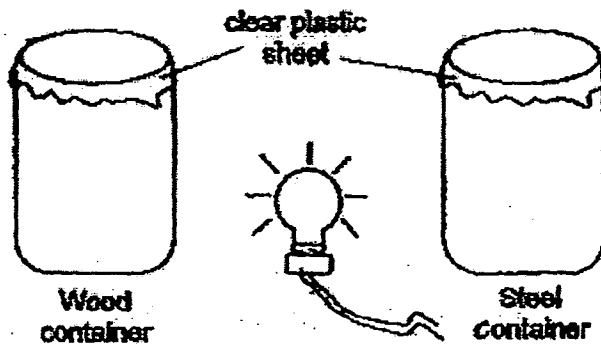
- a) Given the 2 set-ups below, fill in the boxes with A, B, C and D for each set-up to show how the materials were arranged that led to the above results and conclusion. [2]



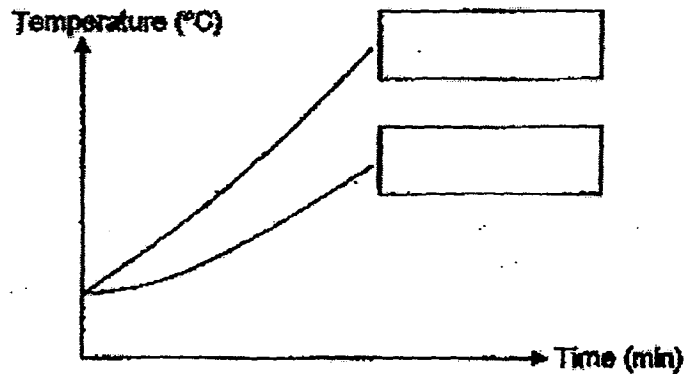
- b) Ivan wants to make a curtain for the changing room in his shop. Based on the above results, which material/s should he select? [1]



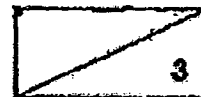
43. Peter conducted the experiment below. He placed a lamp at the same distance from 2 containers made of wood and steel. Both containers were covered with a clear plastic sheet.



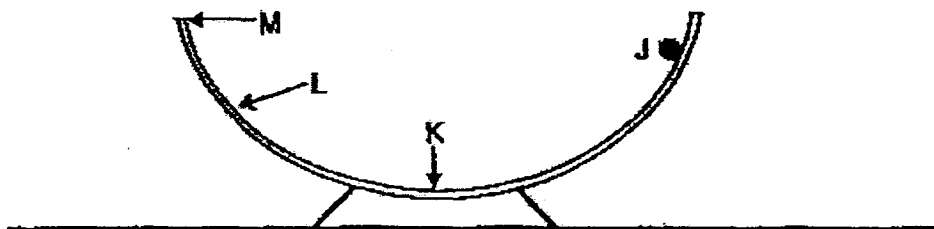
Peter recorded the temperature of air in both containers and drew the graphs for the 2 containers as shown below.



- a) Peter has forgotten to label the above graphs. Label the graphs 'wood' and 'steel' to show the temperatures recorded in both containers. [1]
- b) Explain the difference in the temperature of air recorded in the wooden and steel containers. [2]

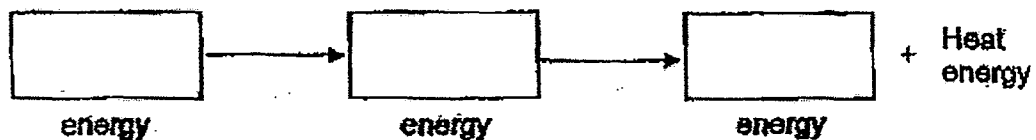


44. The diagram below shows a round bowl. A metal ball was held at J. When the ball was released, it rolled down.



- a) Which position, K, L or M, is the highest the metal ball can reach after it was released from J? [1]

- b) Write the energy change of the metal ball after it was released from J. [1]



- c) Name the force/s which acted on the metal ball. [1]



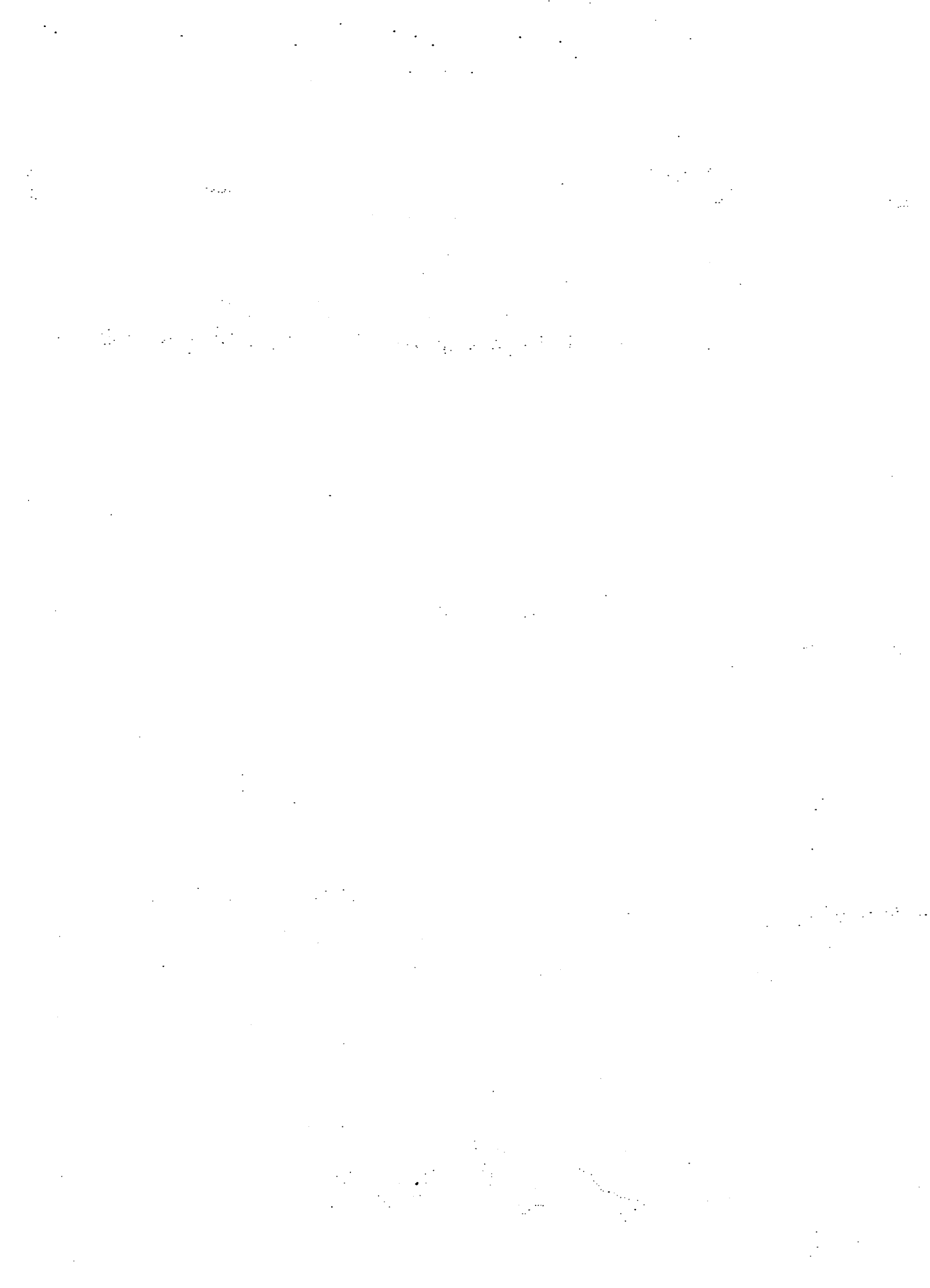
EXAM PAPER 2015

SCHOOL : SCGS

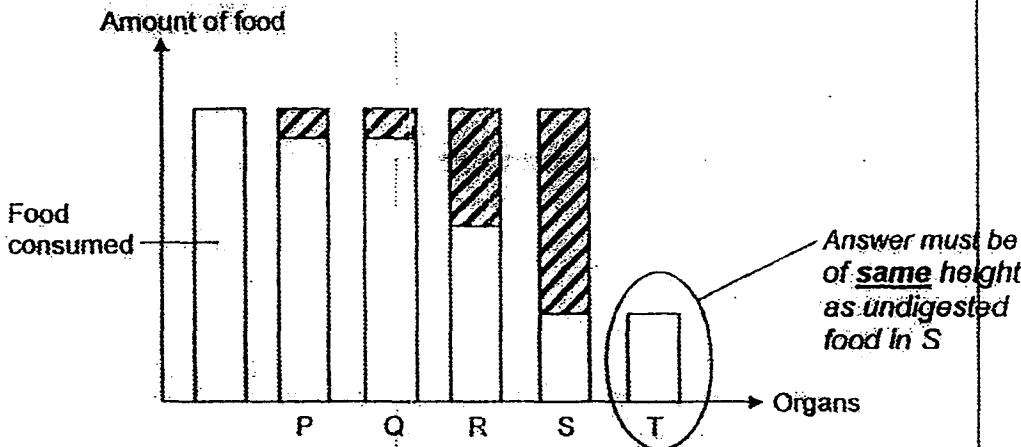
SUBJECT : P6 SCIENCE

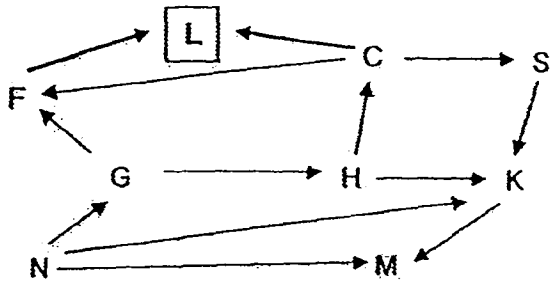
TERM : SA1

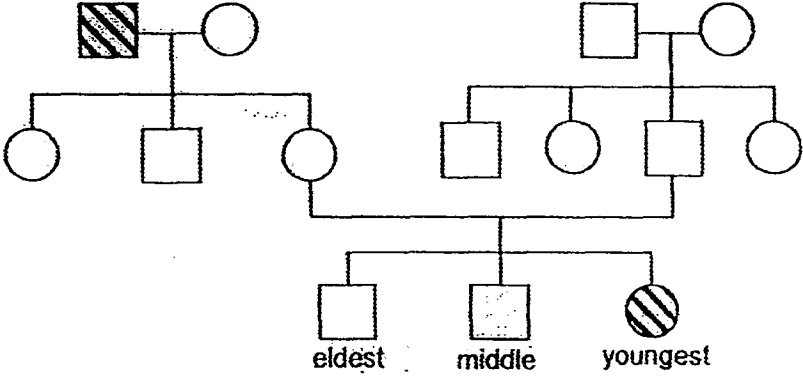
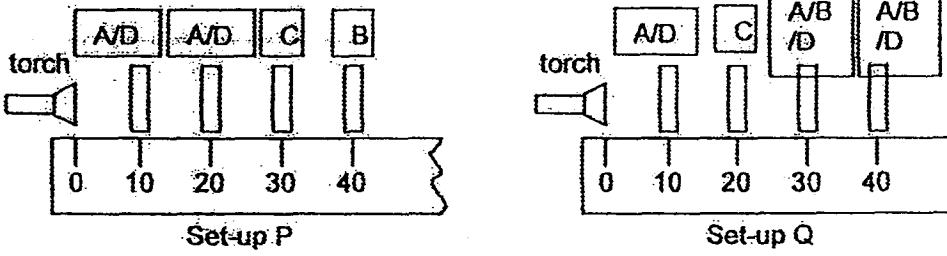
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
2	4	2	2	3	3	1	4	4	1
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
3	3	1	2	4	1	3	3	2	4
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
1	3	2	2	3	4	3	4	3	3

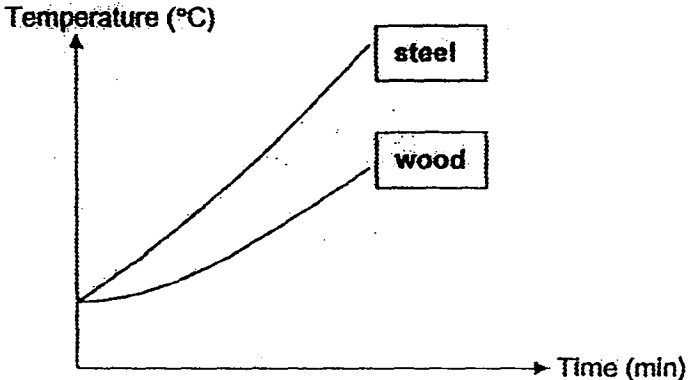


2015 SA1 P6 Science Part 2

Questi on No.	Suggested Answers (Do not exhaust all possible answers)
31a 31b	Weighing scale Material D. It absorbed the <u>greatest</u> amount of oil.
32a 32b 32c	<p>Gullet</p> <p>In Organ S, the digested food enters the bloodstream so there is <u>no digested food in Organ T</u>, but the undigested food in Organ S is transported to Organ T thus, the <u>amount of undigested food in Organ T is the same as that in Organ S.</u></p>  <p style="text-align: center;">Amount of food</p> <p style="text-align: center;">Food consumed</p> <p style="text-align: center;">P Q R S T</p> <p style="text-align: center;">Organs</p> <p style="text-align: right;"><i>Answer must be of same height as undigested food in S</i></p>
33a 33b	<p>Peter was exercising/ running.</p> <p>He was <u>breathing in more oxygen</u> as his body needs it to <u>burn more food into more energy.</u></p>
34a	T, F, T, T

Question No.	Suggested Answers (Do not exhaust all possible answers)
35a	Carnivore: 4 Omnivore: 2
35b	N → M
35c	 <pre> graph TD N --> G N --> M G --> F G --> H H --> K H --> L K --> L K --> M C --> L C --> S S --> K </pre>
36a	Rod A: There were iron filings on the metal rod. Rod B: There were no iron filings on the metal rod.
36b	Rod A: Iron / Steel / Nickel / Cobalt Rod B: Any non-magnetic metal (e.g. copper, aluminium, tin etc)
37a	To be circled: 0.65, 2.0 (B and C results)
37b	<p><u>B has a larger contact area acting against water than C. As it travels downwards, there is more frictional force acting against it, thus it travels slower than C.</u></p> <p>OR</p> <p><u>C has a streamlined body shape to reduce water resistance / frictional force against water but B does not.</u></p>
38a	16 days (larva + pupa only)
38b	The adult female has to look for a suitable place to lay the (fertilised) eggs
39a	Bottle of air occupied space.
39b	Air in the bottle can be compressed.
39c	<u>Air in the bottle escaped through the hole and water entered the bottle to take up the space left by the air.</u>

Question No.	Suggested Answers (Do not exhaust all possible answers)
40a	 <p style="text-align: center;">eldest middle youngest</p>
40b	1
41a	<p>Yellow. The plants <u>take in carbon dioxide</u> in the water for the process of <u>photosynthesis</u> as there is light. Thus, there is less carbon dioxide in the water during midday.</p>
41b	Purple
42a	 <p style="text-align: center;">Set-up P Set-up Q</p>
42b	C (+ Z)

Questi on No.	Suggested Answers (Do not exhaust all possible answers)
43a	 <p>Temperature (°C)</p> <p>steel</p> <p>wood</p> <p>Time (min)</p>
43b	<p>Steel is a <u>better</u> conductor of heat [1] so <u>more heat</u> from the lamp was conducted into the steel container [1] resulting in a higher temperature recorded than the wooden container.</p> <p>(Acceptable: Gain heat faster. Conduct heat better/faster. Allow heat to pass through <u>more</u> easily. Heat travel faster. Absorb heat faster.)</p>
44a	L
44b	(Gravitational) Potential energy → Kinetic energy → <u>Sound/Potential</u> energy
44c	Frictional force / Friction Gravitational force / Gravity