Rosyth School
End-of-Year Examination
SCIENCE
Primary 4

Name: _____ Total Marks: /56

Class: Pr 4 - _____ Register No. _____

Total Time for Booklet A and B: 1h 45min

Booklet A

Instructions to Pupils:

1. Do not open the booklets until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 booklets - Booklet A and Booklet B
4. For questions 1 to 28 in Booklet A, shade the correct ovals on the Optical Answer Sheet (OAS) provided using a 2B pencil.
5. For questions 29 to 41, give your answers in the spaces given in Booklet B.

* This booklet consists of **24** printed pages (including this cover page).

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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). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.**

(56 marks)

---

1 Which statement is true about all mammals?

(1) They have hair.

(2) They have a tail.

(3) They live on land.

(4) They have four legs.

2 In which part of the digestive system is most digested food absorbed into the blood?

(1) gullet

(2) stomach

(3) large intestine

(4) small intestine

3 Which animal has a pupa as a stage in its life cycle?

(1) frog

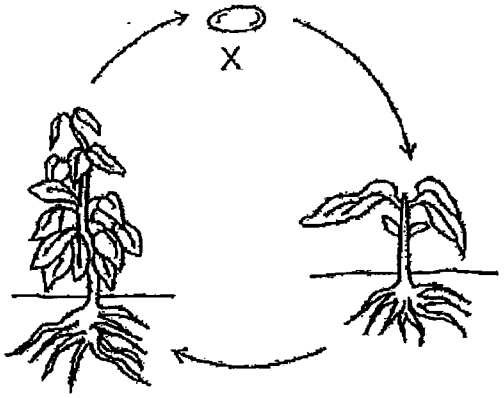
(2) beetle

(3) chicken

(4) grasshopper

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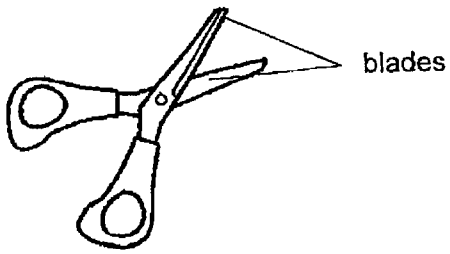
4 The diagram below shows the life cycle of a plant.



What is the stage marked "X"?

(1) egg
(2) seed
(3) seedling
(4) adult plant

5 The diagram shows a pair of scissors.



Metal is used to make the blades of the scissors because metal _____.

(1) is strong
(2) can reflect light
(3) can bend without breaking
(4) does not allow light to pass through

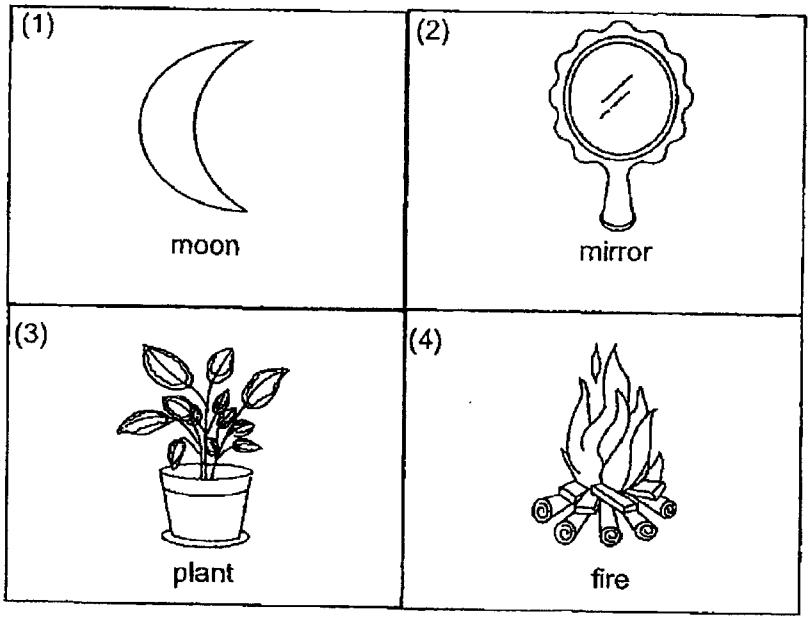
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6 Which one of the following rods can be attracted by a magnet?

A: iron rod
B: steel rod
C: glass rod
D: plastic rod

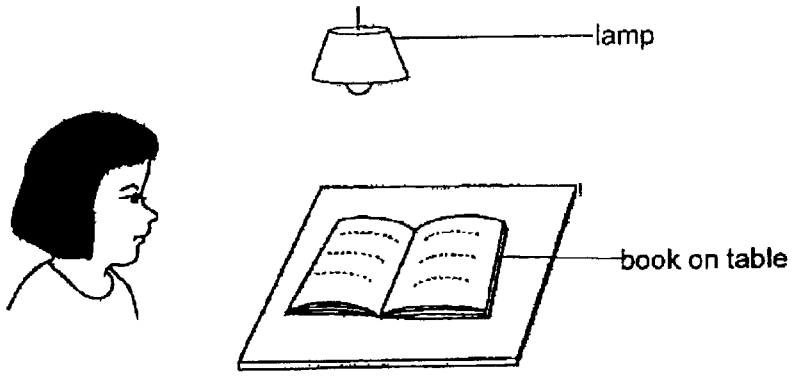
(1) A and B
(2) B and C
(3) A and C
(4) B and D

7 Which one of the following is a source of light?

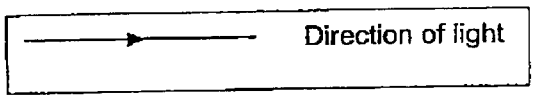


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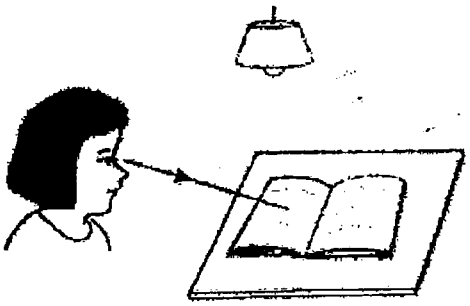
8 Look at the picture below.



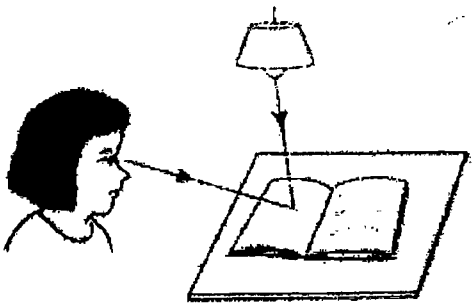
Which one of the following explains why Sue can see the book on the table?



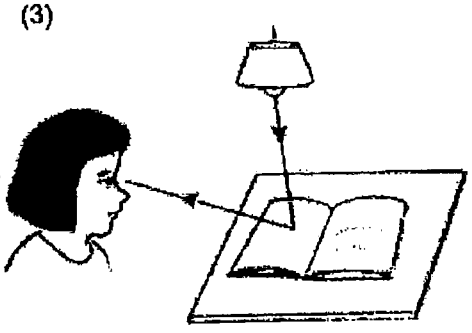
(1)



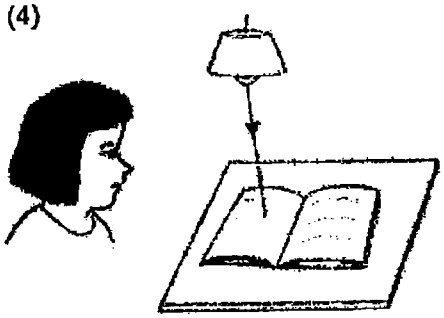
(2)



(3)



(4)

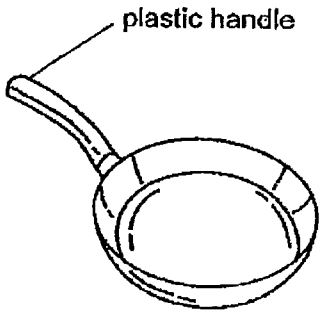


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9 Which one of the following is <u>not</u> a source of heat?

(1) the Sun
(2) a lighted lamp
(3) a lighted stove
(4) a woollen glove

10 Philip used a frying pan to cook as shown below.

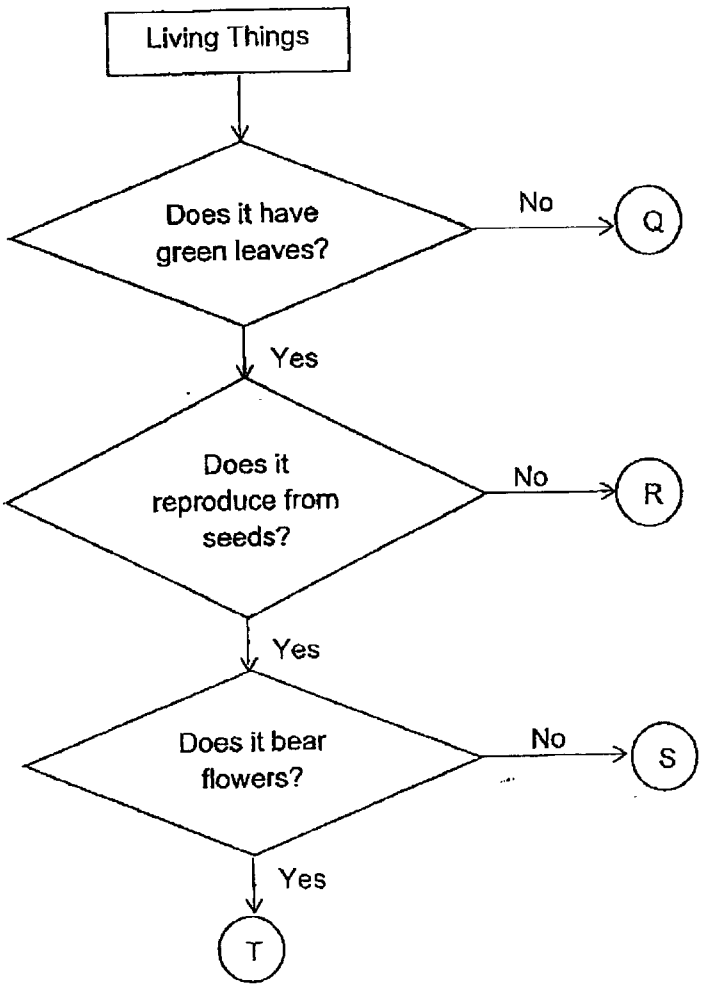


He is able to hold the frying pan using the plastic handle. This is because plastic is a _____.

(1) light material
(2) flexible material
(3) poor conductor of heat
(4) good conductor of heat

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11 Study the flow chart below.



Which of the following plants, Q, R, S or T, best represents a fern?

(1) Q

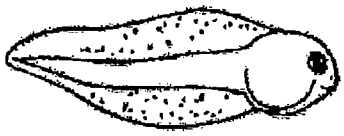
(2) R

(3) S

(4) T

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12 Study the young of an organism shown below.

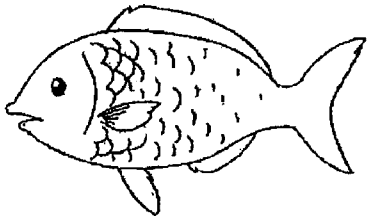


Which of the following is the adult stage of the organism?

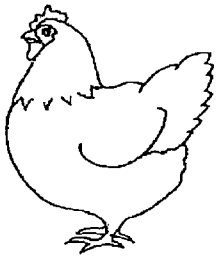
(1)



(2)



(3)

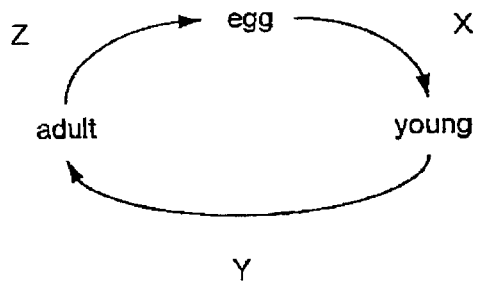


(4)



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13 The diagram below shows the life cycle of living thing P. The time taken from one stage to another stage is represented by the letters, X, Y and Z.



Study the three statements made.

A: P lives on land.

B: The young of P resembles the adult.

C: Y represents a longer time compared to X and Z.

Which statement(s) is/are true?

(1) A only

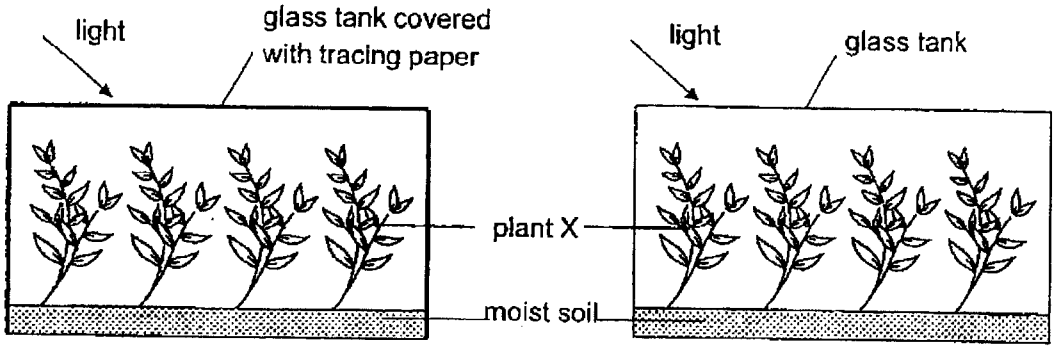
(2) B only

(3) B and C only

(4) None of the above

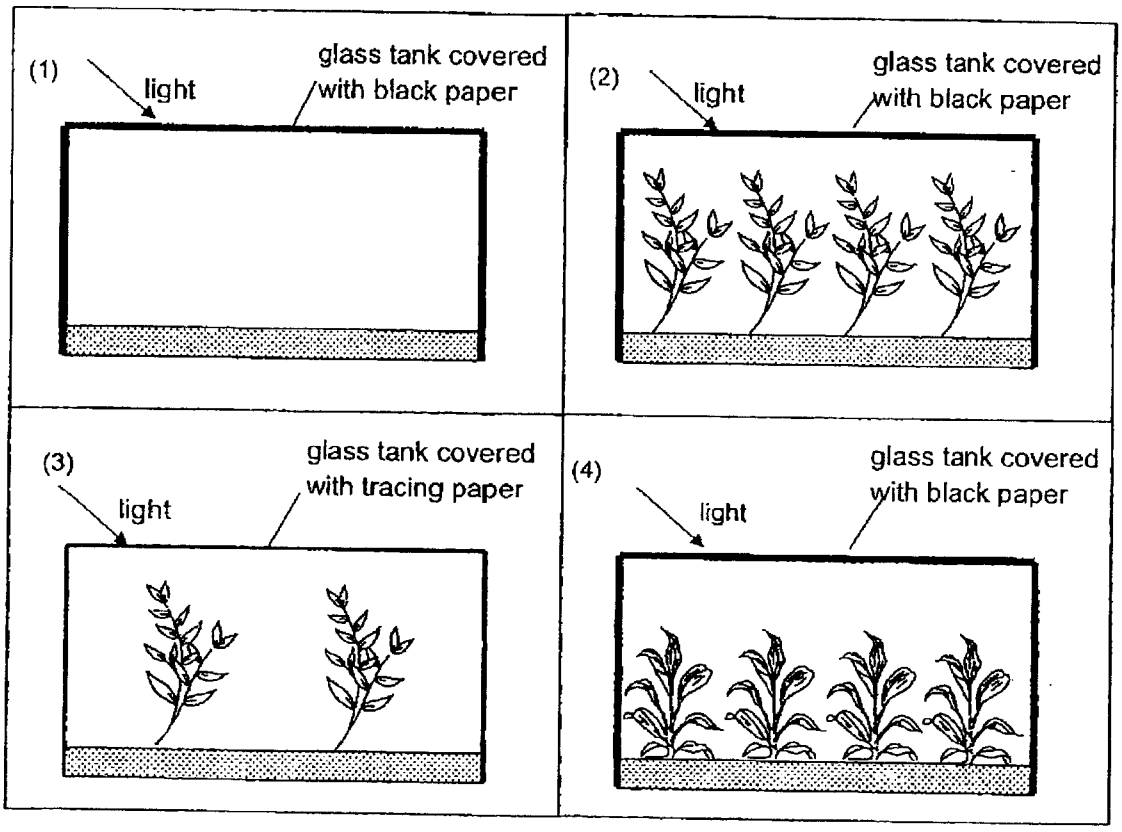
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14 Sam wanted to find out how the amount of light affects the growth of plant X. The diagram below shows his set-ups.



His dad suggested adding another set-up for his experiment.

Which one of the following should be used to ensure a fair test?



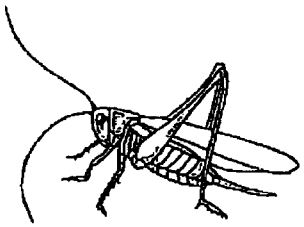
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15 Which one of the following animals has the same number of stages in its life cycle as a mosquito?

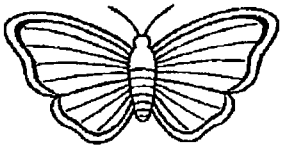
(1)



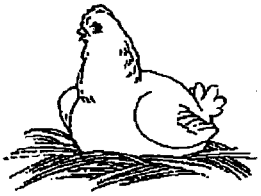
(2)



(3)

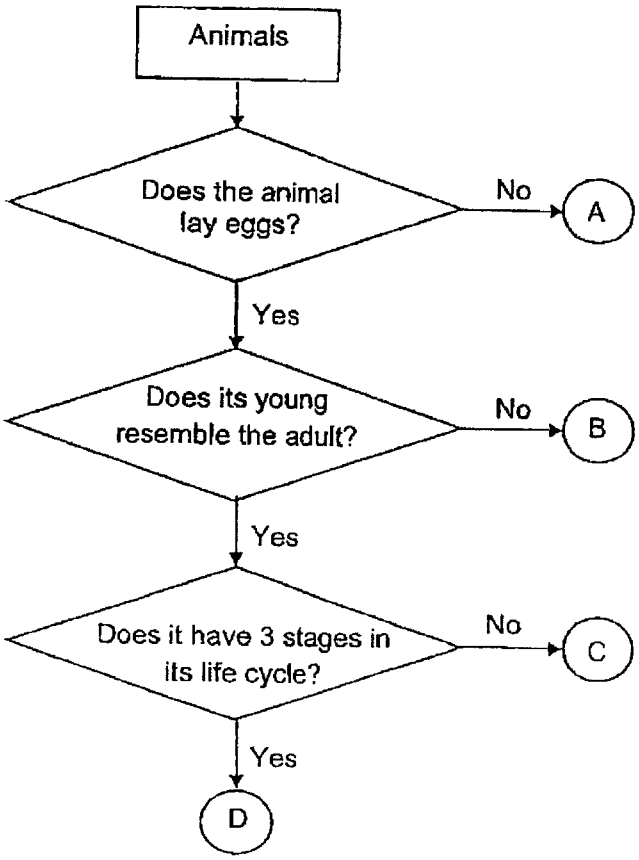


(4)



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16 Study the flowchart below.



Which of the following animals, A, B, C or D, is definitely a chicken?

(1) A

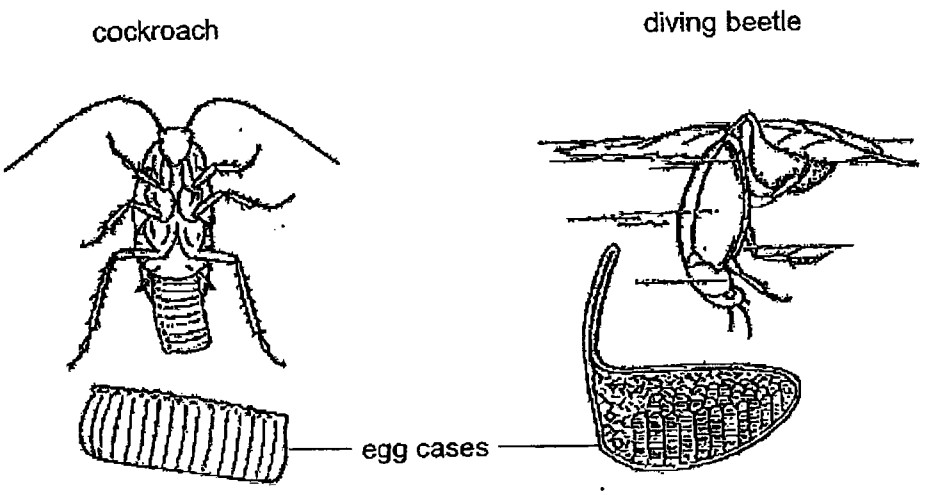
(2) B

(3) C

(4) D

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17 The pictures below show how the cockroach and diving beetle lay their eggs. The diving beetle and cockroach put the eggs in a case. The diving beetle lays the egg case and attaches it to a floating leaf while the cockroach lays the egg case in dark places.



How are the animals similar?

(1) They lay eggs in water.

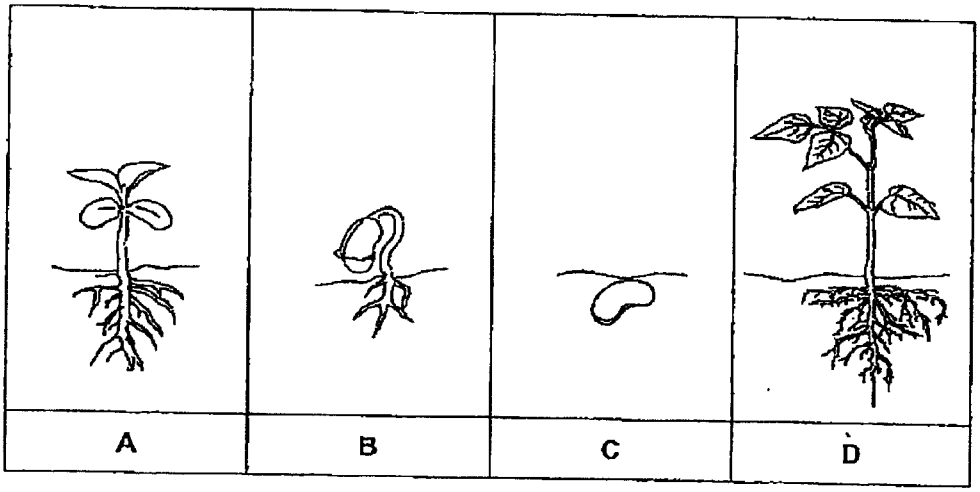
(2) They lay many eggs at a time.

(3) They lay their eggs in dark places.

(4) They protect their eggs until they hatch.

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18 The following pictures show the different stages in the life cycle of a plant.

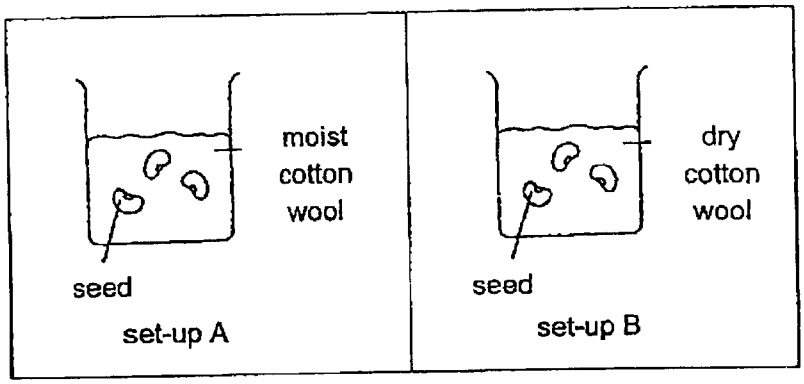


At which stage(s) of the life cycle does the plant make its own food?

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

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19 Study the two set-ups, A and B, shown below.



The aim of the experiment is to find out if _____ is needed for germination.

(1) air
(2) light
(3) water
(4) warmth

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20 Charlene found object A and recorded her observations about object A below.

- It is flexible.
- It is waterproof.
- It does not allow light to pass through it.

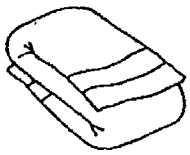
Which of the following could object A be?

(1)



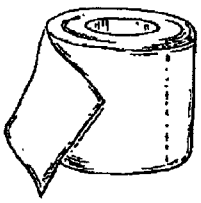
metal straw

(2)



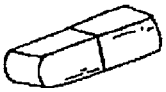
towel

(3)



toilet roll

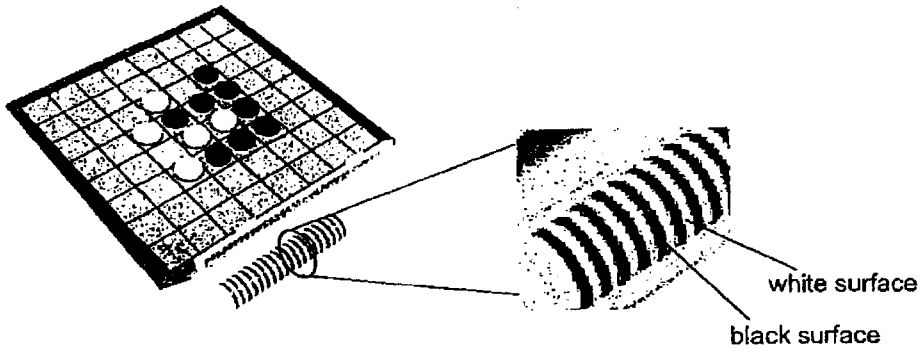
(4)



eraser

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21 After playing a game of checkers, John tried to stack up the black and white discs. He was able to do this as every piece of the black and white disc had a magnet in them as shown below.

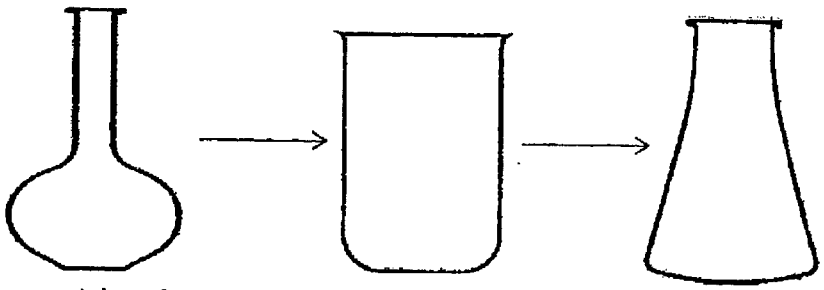


It was easy for him to stack one black surface disc on top of a white surface disc. What could be a possible reason for John's observation?

(1) The like poles of the magnets in the disc are facing each other so they repel.
(2) The like poles of the magnets in the disc are facing each other so they attract.
(3) The unlike poles of the magnets in the disc are facing each other so they attract.
(4) The unlike poles of the magnets in the disc are facing each other so they repel.

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22 Study the diagram below. Container A has 300ml of water.



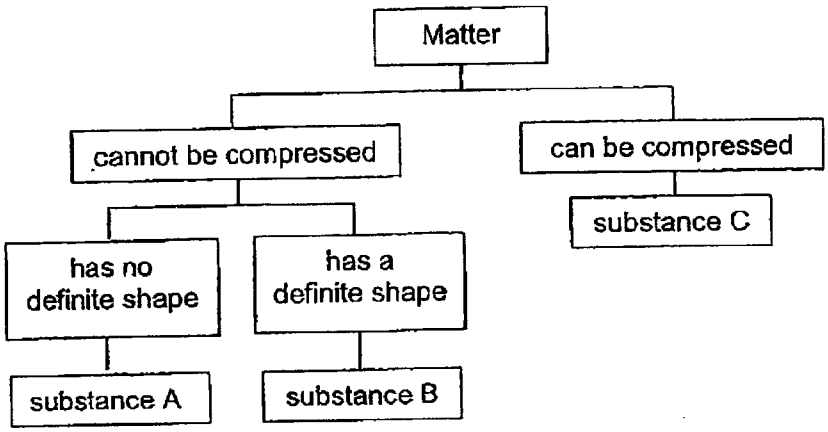
Which of the following will remain the same when all the water is poured from container A to container B and then to container C, with no loss of water?

A: mass of water
B: shape of water
C: volume of water

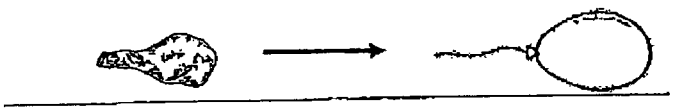
(1) A only
(2) C only
(3) A and C only
(4) B and C only

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23 Study the classification chart below.



David wants to use the above substances to fill up the balloon so that he will get a balloon with the shape as shown below.



Which substances can be used to fill up the balloon?

(1) A and B only

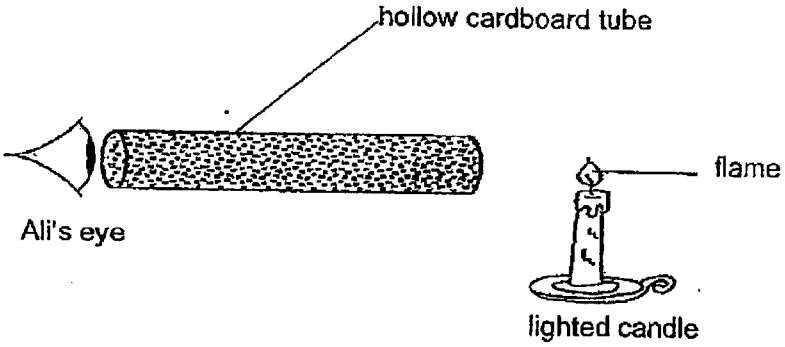
(2) A and C only

(3) B and C only

(4) A, B and C

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24 Ali made a hollow tube using a piece of cardboard. He looked through it at a lighted candle which was placed at one end of the cardboard.



Which of the following statements explains why Ali was able to see the flame?

(1) Light from the flame enters Ali's eyes.

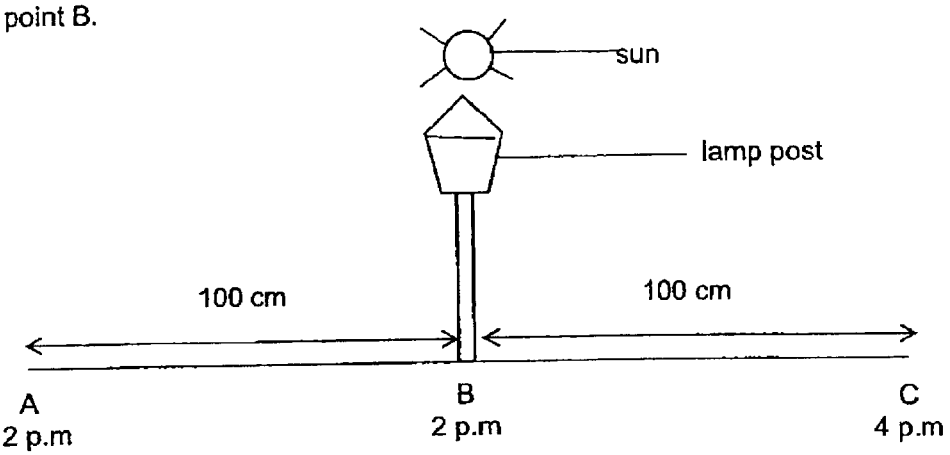
(2) Light from Ali's eyes travels to the flame.

(3) Light from the surroundings travels into Ali's eyes.

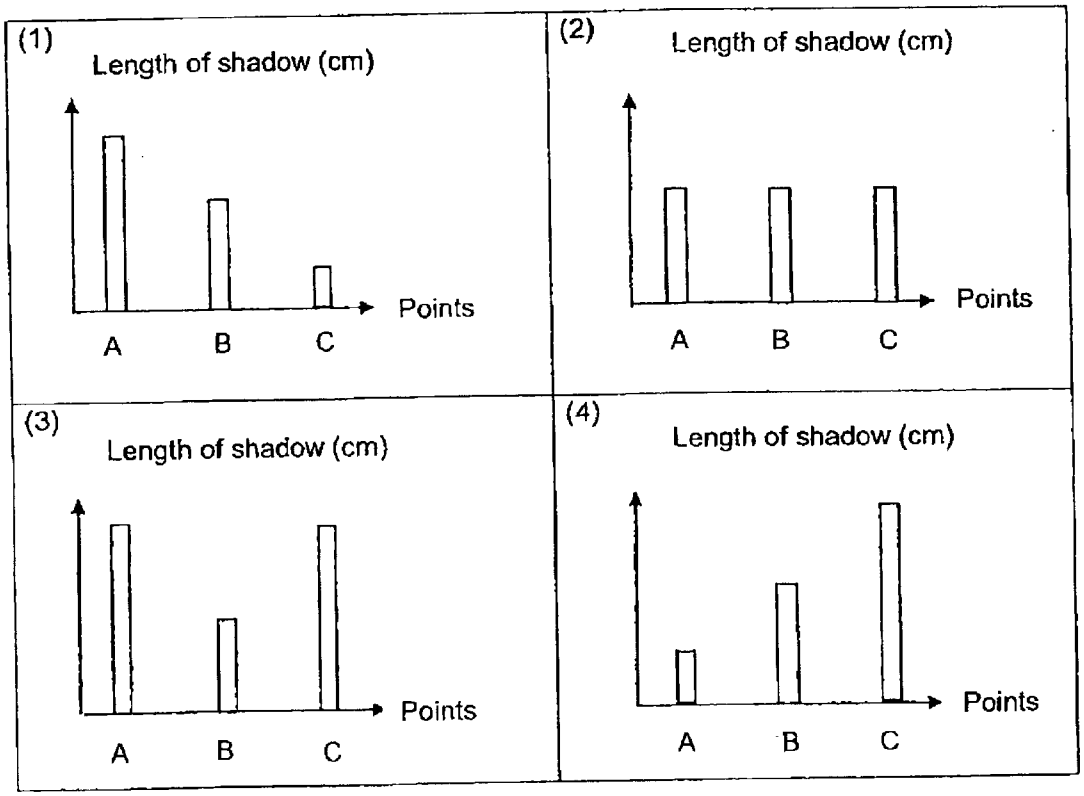
(4) Cardboard does not allow the surrounding light to pass through it.

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25 Peter measured the length of a shadow formed by a lamp post at different intervals on a sunny day from points A to C. The sun was directly overhead the lamp post at point B.

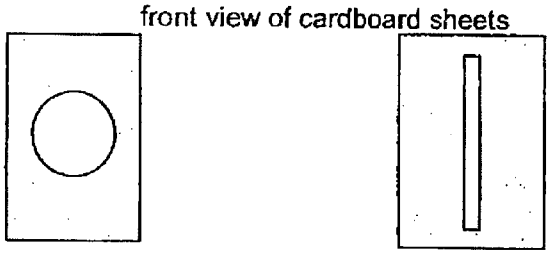


Which graph shows the length of the shadows at different times of the day?

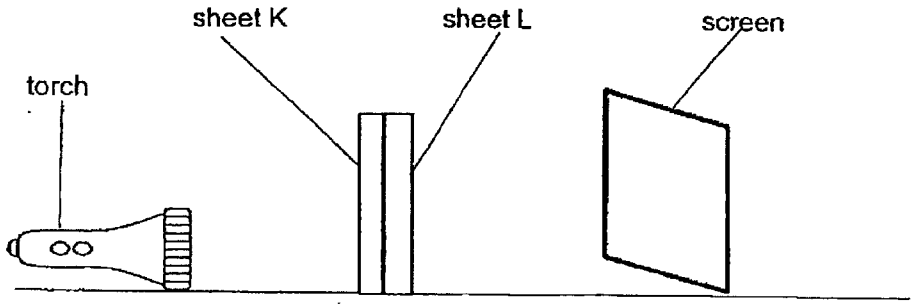


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26 Rani cut out two shapes, circular and rectangular, from two identical sheets as show below. The circle has a diameter of 5cm while the width of the rectangle is 2cm. The two cardboard sheets are of the same size.

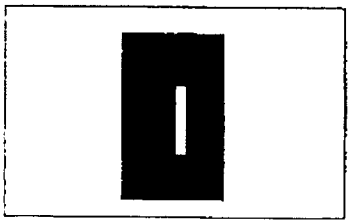


The two cardboard sheets K and L were placed together in a straight line between the screen and the torch as shown below.

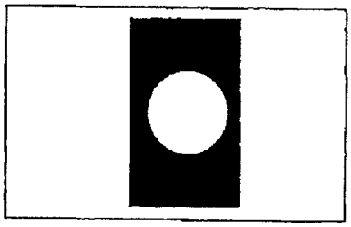


Which one of the following diagrams below is the shadow cast on the screen?

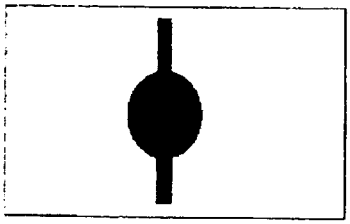
(1)



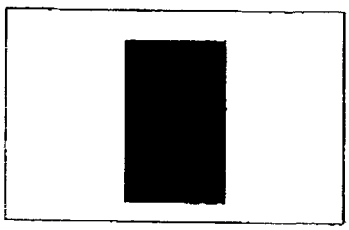
(2)



(3)

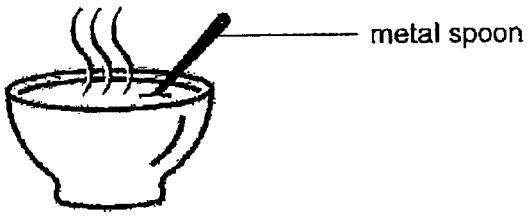


(4)



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27 Annie places a metal spoon in a bowl of hot soup.



The metal spoon becomes hot after a while.
What could be the reason?

(1) Heat travelled to the hot soup.

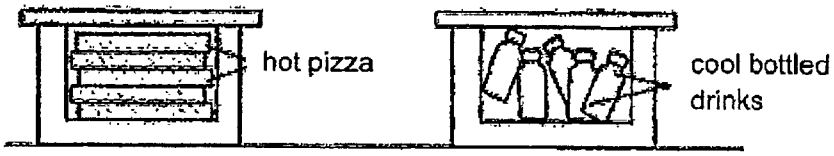
(2) Heat travelled to the metal spoon.

(3) Heat travelled away from the hot soup.

(4) Heat travelled away from the metal spoon.

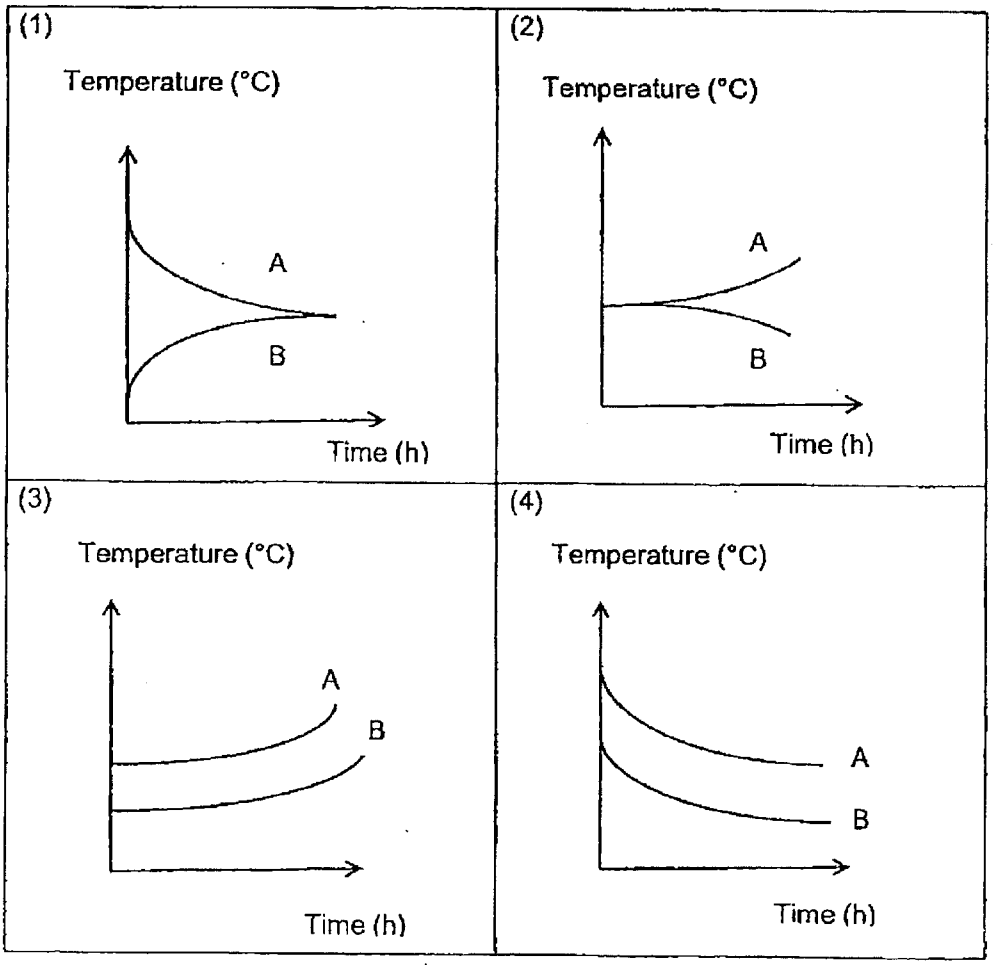
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28 A delivery rider placed two ordered items in two identical containers, A and B, as shown below.



Container A Container B

Based on the above information, which one of the following graphs correctly shows the temperature change of the contents in the two boxes after a few hours?



GO ON TO BOOKLET B

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Rosyth School
End-of-Year Examination
SCIENCE
Primary 4

Total Marks: ____/44

Name: _____

Class: Pr 4 - _____ Register No. _____

Parent's Signature: _____

Duration: Total time for Booklets A and B: 1h 45min

Booklet B

Instructions to Pupils:

1. Please do not turn over this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.

	Maximum	Marks Obtained
Booklet A	**56 marks**	
Booklet B	**44 marks**	
Total	**100 marks**	

* This booklet consists of 14 printed pages (including this cover page).

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For questions 29 to 41, write your answers in this booklet. (44 marks)

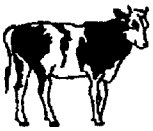
29 Classify the following living things into plants and animals. [2]



penguin



coconut tree



cow



grass

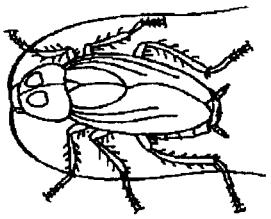
Write the names of the living things in the box below.

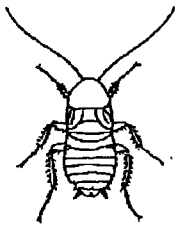
Plants	Animals

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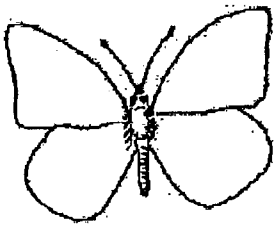
30 The diagram below shows the young and adult of some organisms.
Draw lines to match the young with the correct adult. [3]

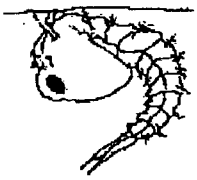


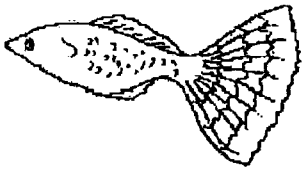












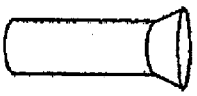
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31 Classify the following into matter and non-matter. [3]

sand	shadow	milk

Matter	Non-matter

32 Peter shines a torch on the ball and a shadow is formed on a wall.



torch



ball



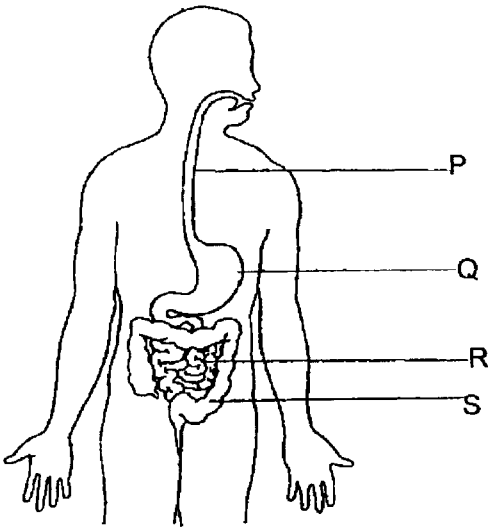
wall

(a) A shadow is formed when light is _____ by an object. [1]

(b) Draw the shadow of the ball that is formed on the wall. [1]

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33 The diagram below shows the human digestive system.



(a) Observe the diagram above and name the parts of the digestive system represented by letters, P and Q. [2]

Part P: _____

Part Q: _____

(b) What is the function of part S? [1]

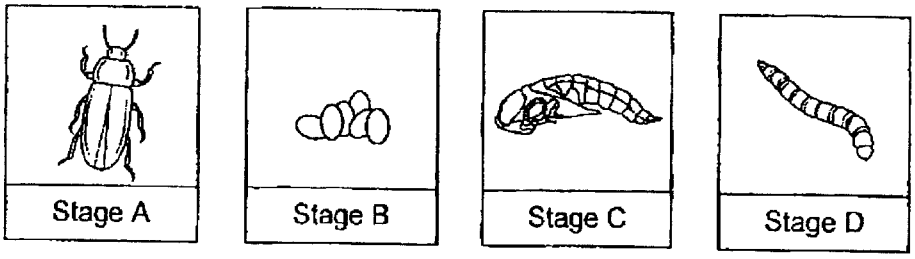
_____

(c) In which part(s), P, Q, R and S, will digestive juices be produced? [1]

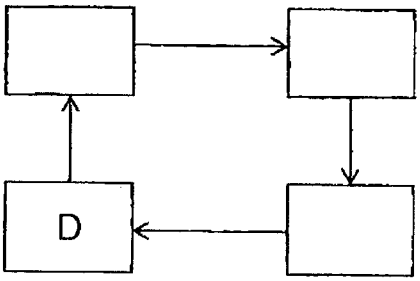
_____

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34 The diagrams below show the stages in the life cycle of a mealworm beetle.



(a) Arrange the stages, A, B, C and D, to show the life cycle of the mealworm beetle. [1]



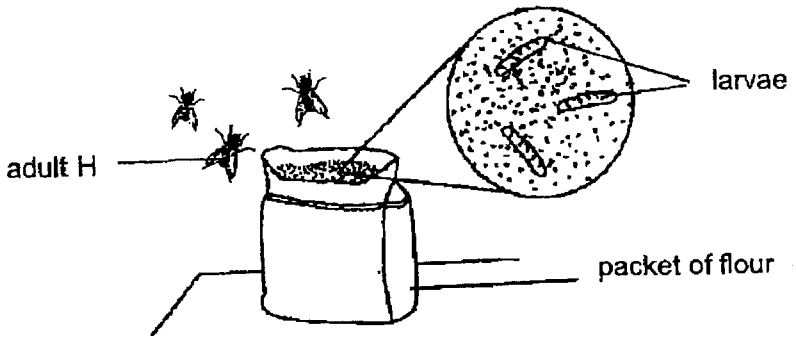
(b) State one difference between the life cycle of a mealworm beetle and the life cycle of a cockroach. [1]

(c) Mealworm beetle lays many eggs at one time. Explain how it helps with its survival. [1]

(d) Explain why the mealworm beetle is classified as an insect. [1]

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35 A packet of flour was opened and left on a table as shown below.



(a) The adult laid eggs on the packet of flour. Give a reason why. [1]

(b) Identify the stages of the insect's life cycle that were missing from the diagram above. [1]

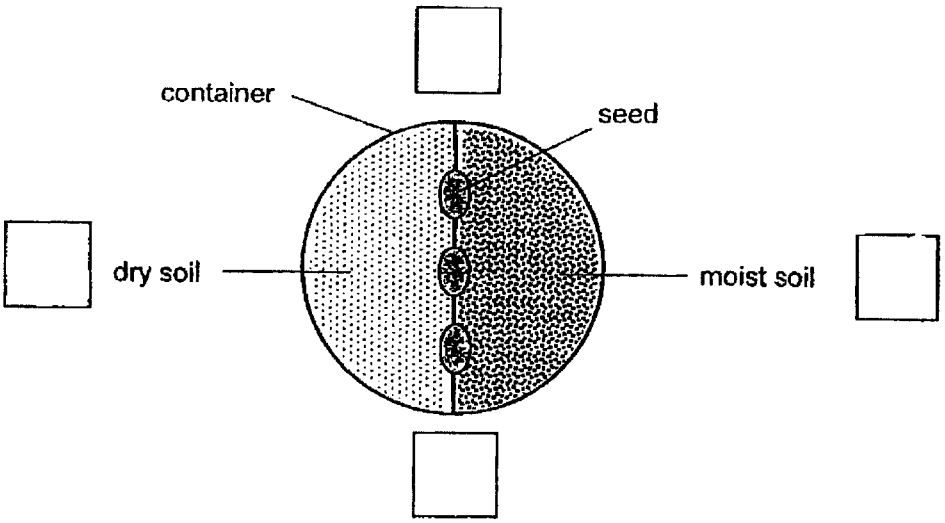
(c) The table below shows the number of larvae found in the flour at different temperatures.

Temperature (°C)	Number of larvae found in the flour
20	28
25	32
30	39
35	10

Which is the best temperature to store the flour? Support your choice. [1]

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36 Siti wanted to find out if the presence of water affects the germination of seeds. She placed three similar seeds between two types of soil, dry and moist, in a container as shown below.



(a) Siti then placed the container in her classroom. After several days, the seeds germinated. In which direction would the roots of the seeds grow towards? Tick the correct box shown above. [1]

(b) Explain your answer for part (a). [1]

_____

_____

(c) Identify the type of variables in the experiment above by ticking the correct box. [2]

Type of variables	Same variable	Changed variable	Measured variable
(i) Type of seed			
(ii) Amount of light			
(iii) Presence of water			
(iv) Direction of roots growth			

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37 Yusoff planted the seed of a flowering plant and observed its growth. He measured the height of the plant over a period of time as shown in the table below.

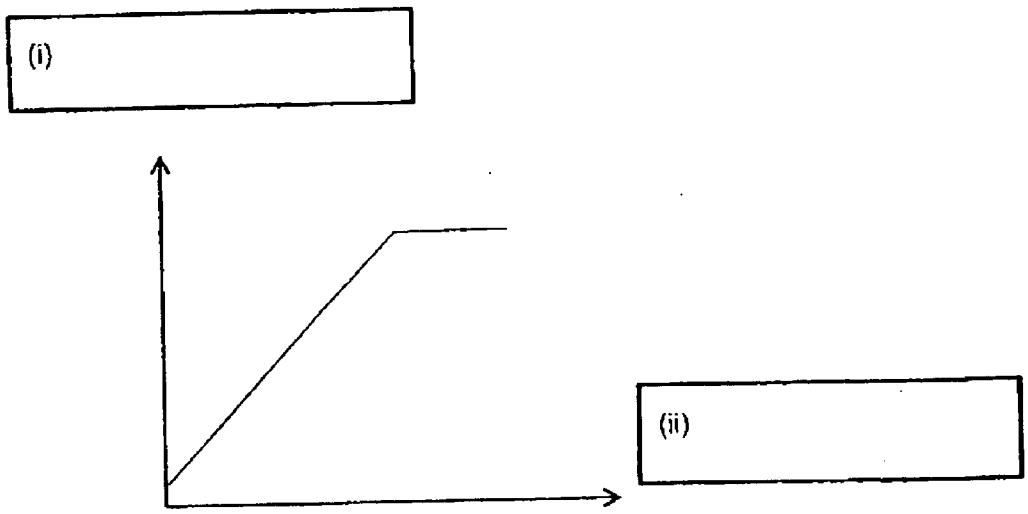
Time (week)	Height of the plant (cm)
0	1
1	4
2	9
3	28
4	28
5	28

(a) Describe his observation of the height of the plant for the first five weeks. [1]

(b) Based on the table above, at what stage of the life cycle is the plant likely to be at week 5? [1]

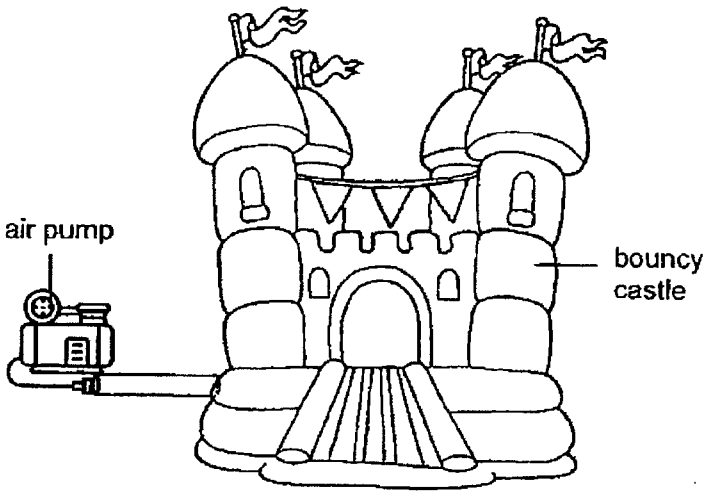
Yusoff transferred his results from the table onto a graph as shown below. However, he forgot to label the variables.

(c) Complete the graph below. [2]



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38 Tom's dad bought him an inflatable bouncy castle as shown in the diagram below.



Tom observed that air can still be pumped into the bouncy castle even when it is fully inflated.

(a) State a property of air that allows the above observation to take place. [1]

_____

(b) What will happen to the mass of the bouncy castle after more air is pumped into it? Circle the correct answer. [1]

decrease / remains the same / increase

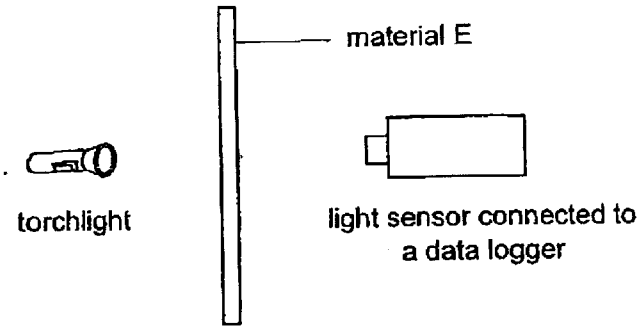
(c) Give a reason for your answer in part (b). [1]

_____

_____

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39 John conducted an experiment to find out the amount of light that can pass through four types of materials, E, F, G and H.



He repeated this experiment using different materials, F, G and H, one at a time. He then recorded the results in the table below.

Type of material	Amount of light detected by data logger (lux)
E	900
F	4300
G	50
H	0

(a) Arrange materials E, F, G and H according to their transparency below. [2]

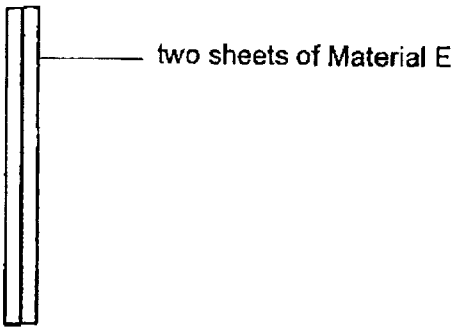
_____ , _____ , _____ , _____

allows no light to pass through → allows most light to pass through

Question 39 continues on page 12

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(b) John repeated the experiment by putting another sheet of Material E as shown below.



Predict the amount of light detected by the data logger. [1]

_____ lux

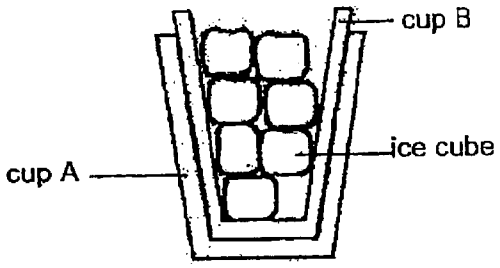
(c) Explain why John had to conduct this experiment in a dark room. [1]

_____

_____

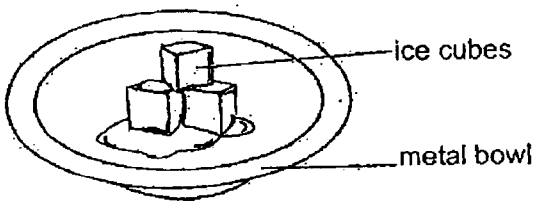
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40 Two glass cups were found stuck to one another in Mrs Wong's cupboard. She added some ice cubes to cup B as shown in the diagram below.



(a) After a while, she found it easier to remove the two cups from each other. Explain why. [2]

(b) Mrs Wong then put three ice cubes on a circular metal bowl. She placed the bowl in a room at a temperature of 25°C. After a short while, the ice cubes started to melt as shown below.



(i) Based on the information given, tick (√) the correct answer. [1]

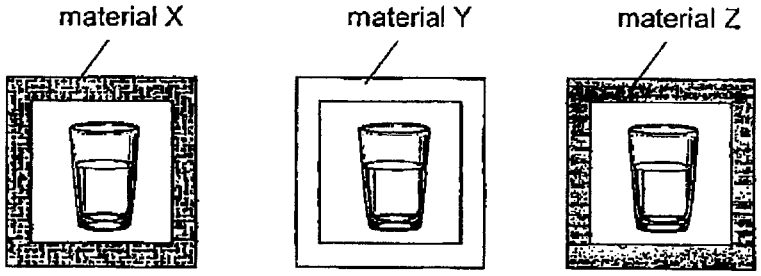
( ) The ice cubes gained heat.

( ) The ice cubes lost heat.

(ii) Name one possible source of heat that made the ice cubes melt. [1]

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41 Vincent conducted an experiment using three similar-sized containers made of different materials, X, Y and Z, as shown below. He placed three identical cups containing cold water at 2°C in the containers. He placed all three containers in the same location.



set-up X set-up Y set-up Z

After 20 minutes, he recorded the temperature of water in each cup with a thermometer. The results are shown in the table below.

	Temperature of water (°C)	
Material	**At the start of experiment**	**At the end of experiment**
X	2	10
Y	2	20
Z	2	6

(a) State two variables of the water of each set-up, X, Y and Z that Vincent must keep constant in order for the experiment to be a fair one. [2]

(i) _____

(ii) _____

(b) Vincent wants to hold a mug filled with hot milk without scalding his hand. Based on the results above, which one of the materials, X, Y or Z, is the most suitable to make the mug? Explain your answer. [2]

_____

_____

_____

END OF BOOKLET B

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SCHOOL : ROYSTH SCHOOL
LEVEL : PRIMARY 4
SUBJECT : SCIENCE
TERM : SA2

SECTION A

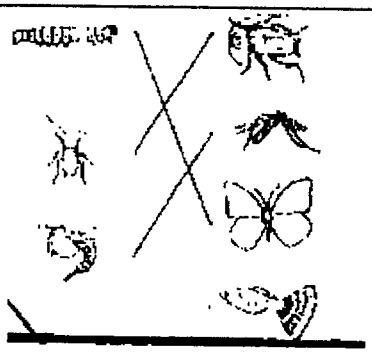
1	4	2	2	1	1	4	3	4	3
2	4	4	2	3	4	3	3	3	4
3	3	2	1	3	1	2	1		

SECTION B

Q29)

Plants	Animals
Coconut tree Grass	Cow Penguin

Q30)



Q31)

Matter	Non-Matter
Milk, Sand	Shadow

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Q32)

a) A shadow is formed when light is blocked by an object

b) 

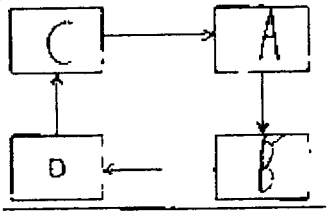
Q33)

a) P: Gullet, Q: Stomach

b) Absorb excess water from undigested food

c) Q, R

Q34)

a) 

b) The life cycle of a mealworm beetle has 4 stages while the cockroach has a 3-stage life cycle

c) Enhance the likelihood that some will survive predators, environmental challenges and other threats

d) The mealworm beetle has 6 legs

Q35)

a) So that the larvae can feed on the flour immediately after hatching

b) Pupa stage and egg stage

c) 35 degrees as there was the least amount of larvae found in the flour, so it is the best temperature

Q36)

a) Moist soil

b) The roots take in water and mineral salts and the moist soil has water so the roots will grow towards the moist soil

c)

Type of variables	Same variable	Changed variable	Measured variable
(I) Type of seed	✓		
(ii) Amount of light	✓		
(III) Presence of water		✓	
(iv) Direction of roots growth			✓

Q37)

a) 28cm is the highest a plant can grow

b) Adult stage

c) i) Height of the plant ii) Time taken

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Q38)	a) Air can be compressed b) Increase c) Air is matter and has mass, thus when more air is pumped in, the mass of air increases
Q39)	a) H, G, E, F b) 400 lux c) S that the only light detected by the light sensor is only from the torch and not the surroundings
Q40)	a) Putting the ice cubes will allow B to lose heat and contract causing it to be separated from A. b) (i) The ice cubes gained heat (ii) The surrounding air
Q41)	a) (i) Amount of water (ii) Heat source b) Z. Temperature increased the least and gained heat the slowest showing that Z is a poor conductor of heat and a mug must have a poor conductor of heat so that he will not burn his hand.

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