Rosyth School
End-Of-Year Examination 2019
SCIENCE
Primary 4

Total Marks: ____/56

Name: _____

Class: Primary 4 _____

Register No. _____

Date: 24 October 2019

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

Parent's Signature: _____

Booklet A

Instructions to Pupils:

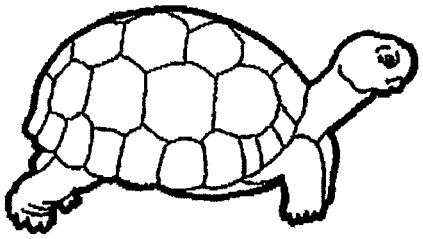
1. Do not open the booklets until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 booklets - Booklet A and Booklet B
4. For questions 1 to 28 in Booklet A, shade your answers on the Optical Answer Sheet (OAS) provided using a 2B pencil.

* This booklet consists of **20** printed pages (including 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)

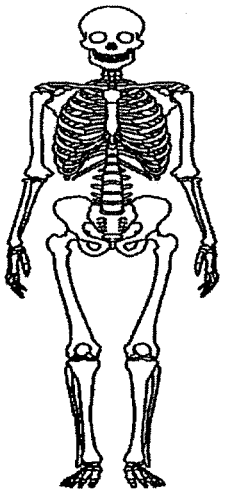
1. A tortoise hides itself in its shell when touched.



This shows that the tortoise is a living thing because it can _____.

(1) grow
(2) breathe
(3) respond
(4) reproduce

2. Which organ system is shown in the diagram?



(1) skeletal system
(2) muscular system
(3) circulatory system
(4) respiratory system

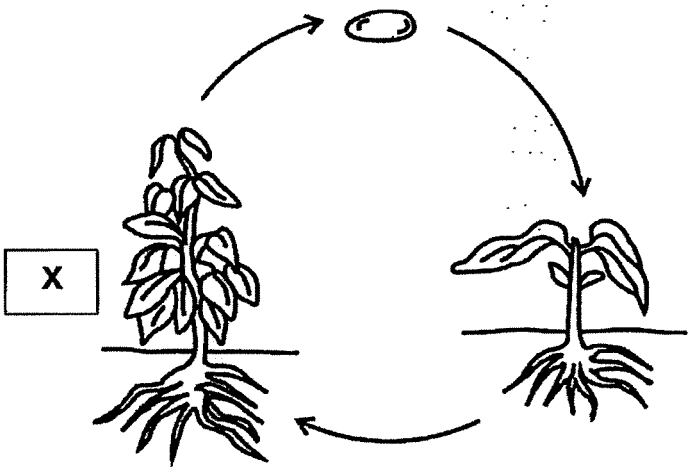
3. Sam made the following observations on the life cycle of an animal.

- There are three stages in the life cycle.
- The young does not look like the adult.

Which animal was Sam observing?

(1) frog
(2) beetle
(3) butterfly
(4) cockroach

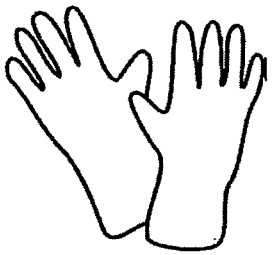
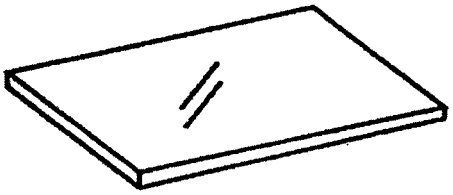
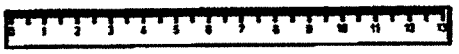
4. The diagram shows the life cycle of a plant.



What is the stage marked X?

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

5. Which one of the following objects can be bent easily without breaking?

(1) a plastic spoon 	(2) a rubber glove 
(3) a sheet of glass 	(4) a wooden ruler 

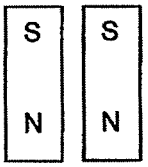
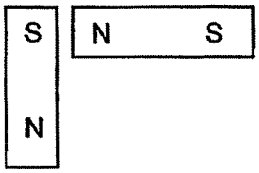
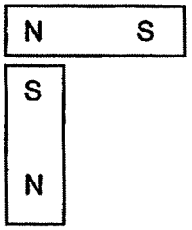
6. A magnet was brought near to a plastic block as shown in the diagram below.



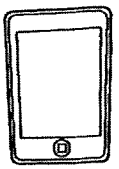
What will happen to the plastic block?

(1) It will move up.
(2) It will not move.
(3) It will move to the left.
(4) It will move to the right.

7. In which one of the following will the two magnets push each other away?

(1) 	(2) 
(3) 	(4) 

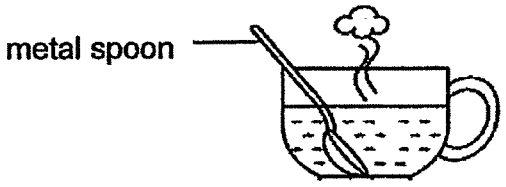
8. Which one of the following is a source of light?

(1) an apple 	(2) a leaf 
(3) the moon 	(4) a mobile phone that is turned on 

9. Which one of the following is the best conductor of heat?

(1) A metal cup
(2) A paper cup
(3) A plastic cup
(4) A wooden cup

10. Josiah places a metal spoon in a cup of hot water.



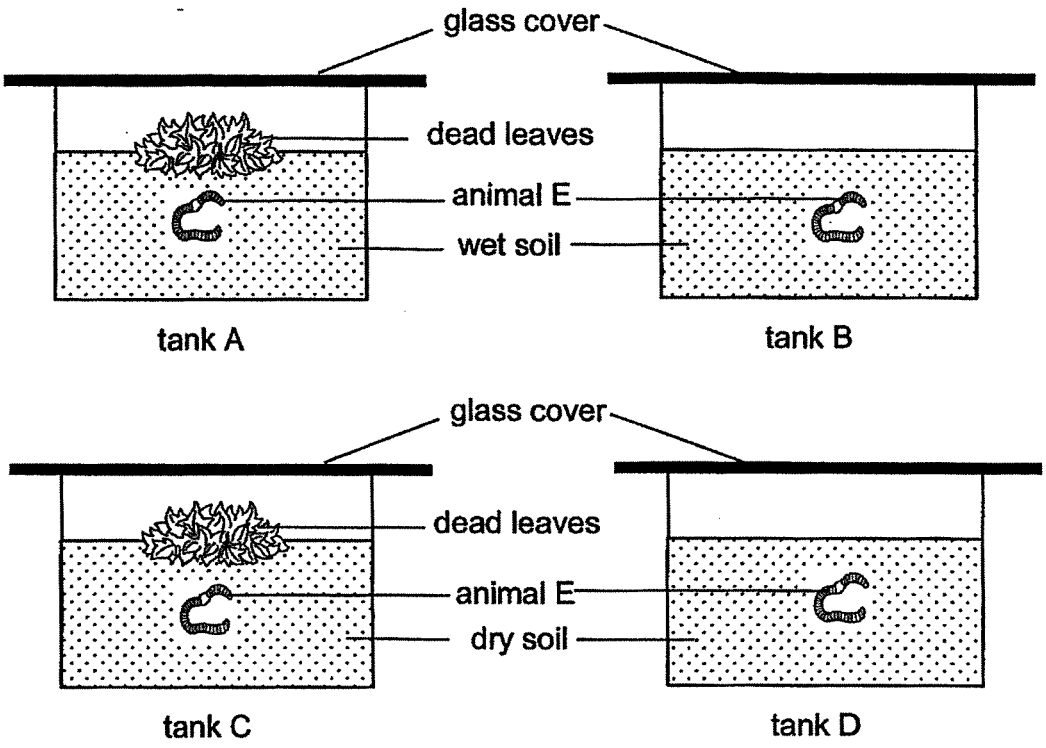
a cup of hot water

The metal spoon becomes hotter after a while.

Which one of the following explains this?

(1) The cup loses heat to the hot water.
(2) The metal spoon loses heat to the hot water.
(3) The metal spoon gains heat from the hot water.
(4) The hot water gains heat from the metal spoon.

11. Mary wanted to find out how some factors affect the survival of animal E. She used four tanks, A, B, C and D, as shown below.

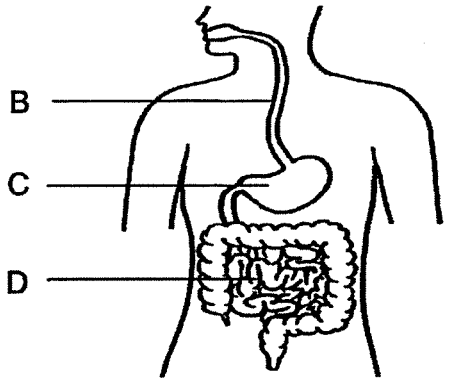


After a week, only the animal E in tank A survived while the rest died.

The above experiment shows that animal E needs _____ to survive.

(1) air and water
(2) soil and dead leaves
(3) water and dead leaves
(4) air, water and dead leaves

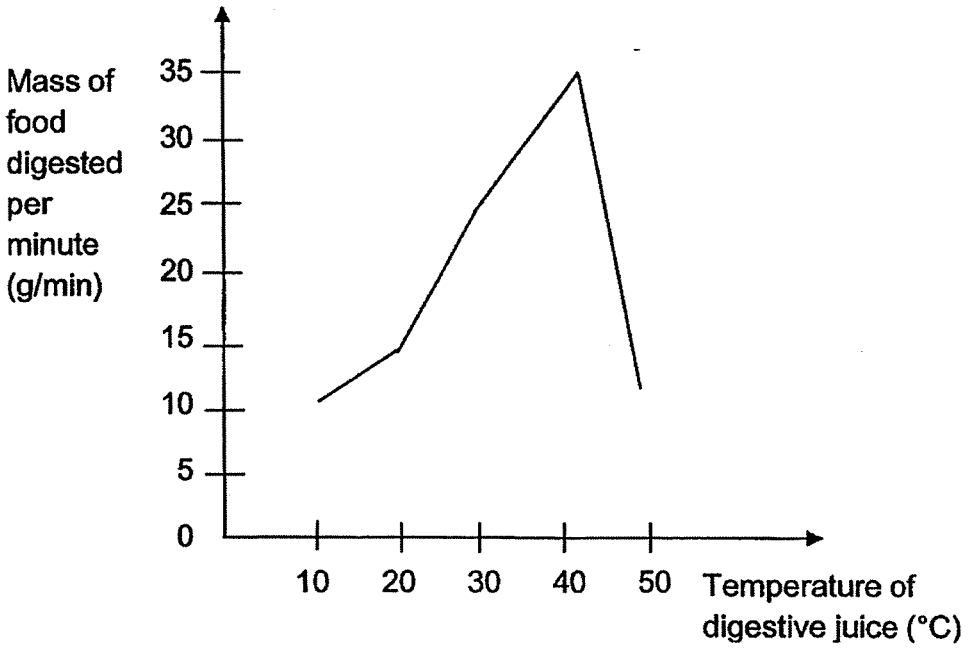
12. Study the diagram below.



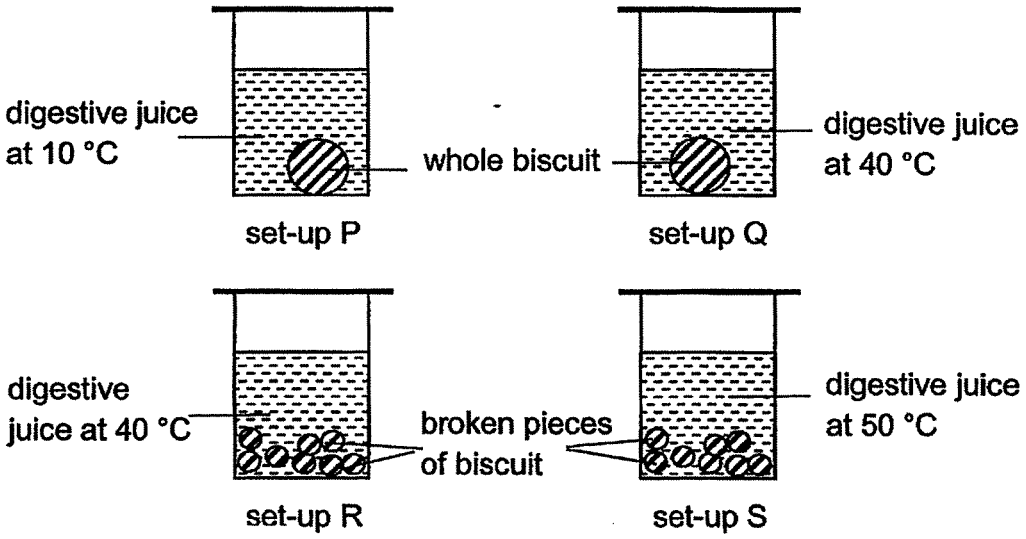
Which one of the following best describes what takes place at B, C and D?

	B	C	D
(1)	allows food to flow through	digested food is absorbed into blood stream	digestion takes place
(2)	digestion takes place	undigested food is removed out of the body	digested food is absorbed into blood stream
(3)	digested food is absorbed into blood stream	digestion takes place	allows food to flow through
(4)	allows food to flow through	digestion takes place	digested food is absorbed into blood stream

13. David studied the graph shown below. It shows how the rate of digestion of food is affected by the temperature of the digestive juice.



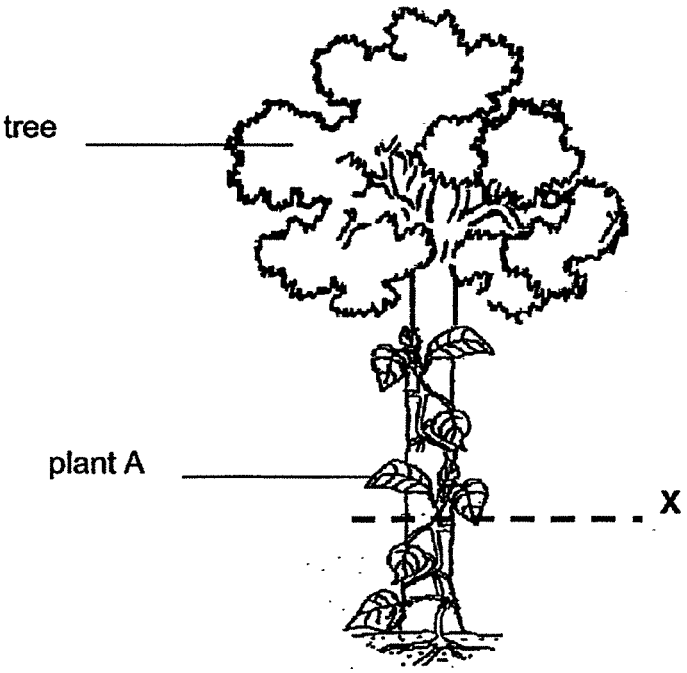
David prepared four set-ups, P, Q, R and S, as shown below. He put 20g of similar biscuit in each set-up. He added 20ml of digestive juice at various temperature.



In which one of the following set-ups, P, Q, R or S, would the biscuit be digested the fastest?

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

14. The diagram below shows plant A climbing around the trunk of a tree. The tree provides support for plant A.



The stem of plant A was cut at point X. The part of plant A above point X died after a week.

What could the reason(s) for this?

A: The part above X had no water.
B: The part above X had no support from the tree.
C: The part above X was not able to receive sunlight.

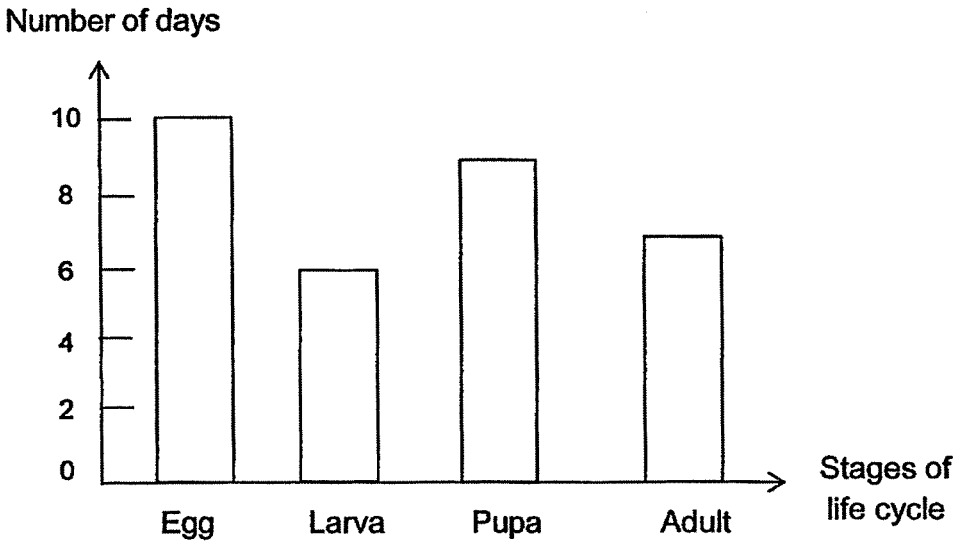
(1) A only
(2) C only
(3) A and B only
(4) B and C only

15. Which of the following animals have a 3-stage life cycle?

A: mosquito
B: chicken
C: man
D: frog

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

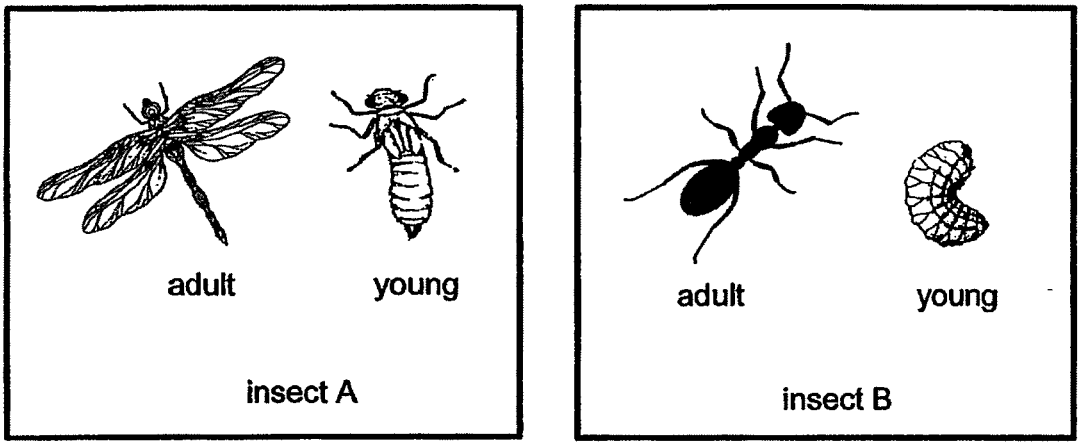
16. The bar graph below shows the number of days in each stage of the life cycle of insect A.

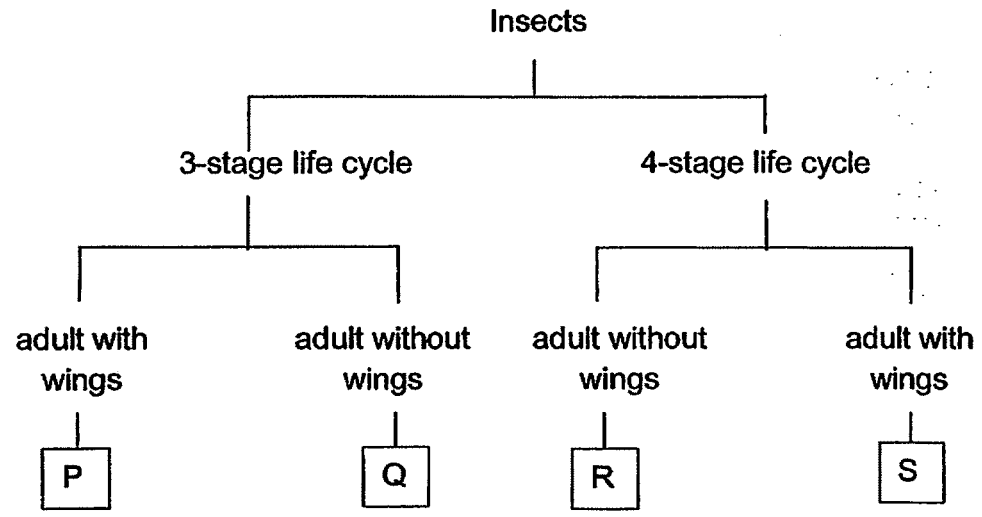


At which stage would insect A be 7 days after the egg has hatched?

(1) egg
(2) larva
(3) pupa
(4) adult

17. Study the adult and young of insects A and B.



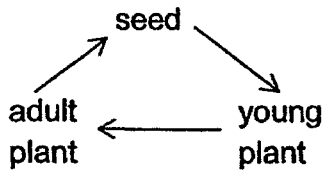


Which of the following shows correctly the group that insects A and B belong to respectively?

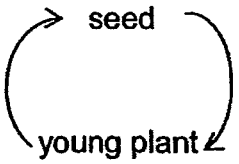
	Insect A	Insect B
(1)	P	R
(2)	P	Q
(3)	S	R
(4)	S	Q

18. Which one of the following correctly represents the life cycle of a plant?

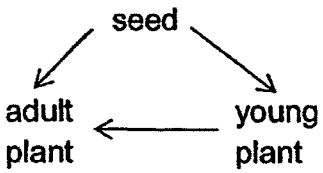
(1)



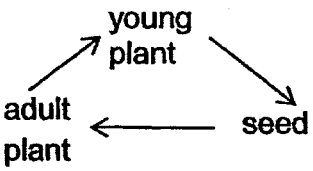
(2)



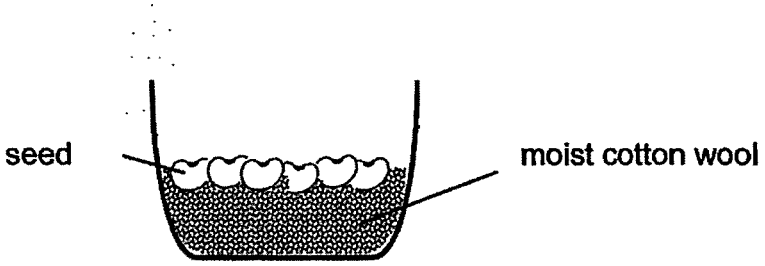
(3)



(4)



19. Sharon wanted to find out the best temperature for seed germination. She prepared four set-ups similar to the set-up as shown below. There were six seeds in each-set-up.



She recorded her results as shown in the table below.

Set-up	Temperature (°C)	Number of seeds germinated
A	0	0
B	28	6
C	32	4
D	90	2

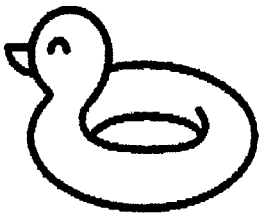
Based on her results, which is the best temperature for the seeds to germinate?

(1) 0°C
(2) 28°C
(3) 32°C
(4) 90°C

20. The table below shows the properties of materials A, B, C and D.
A tick (✓) indicates that the material has the property.

Material	Property		
	Flexible	Waterproof	Ability to float
A	✓		✓
B		✓	
C	✓	✓	✓
D	✓	✓	

Which material, A, B, C or D, would you use to make a float for young children?



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

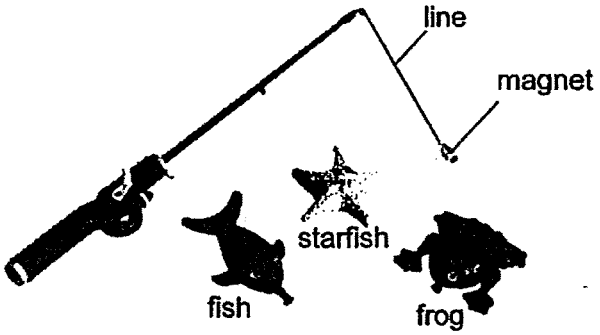
21. On rainy days, shoppers entering a shopping centre are asked to keep the floor dry by keeping their wet umbrellas in plastic bags placed at the entrance as shown below.



State one important physical property of plastic bags that makes it suitable for the wet umbrellas to be left in the plastic bags to keep the floor dry.

(1) strong
(2) flexible
(3) waterproof
(4) transparent

22. Marcus created a toy fishing rod with magnet at the end of the line. He then placed the magnet close to 3 different toys made of different materials.



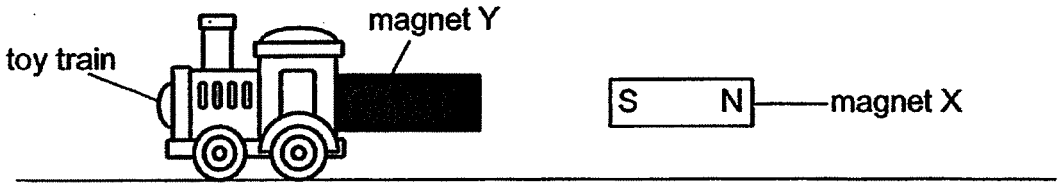
The table below shows what happened to each toy when the magnet was brought close to them.

Toy	Is the toy attracted to the magnet?
fish	no
frog	yes
starfish	yes

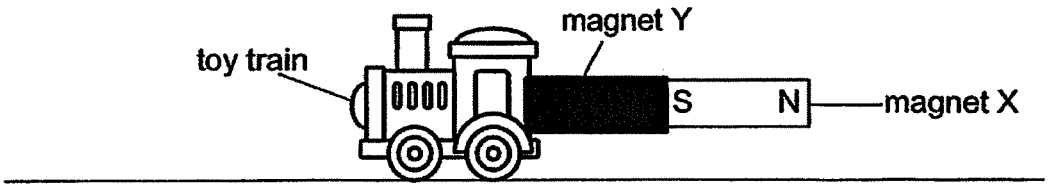
Which one of the following shows the most likely materials that Marcus used for each toy?

	Fish	Frog	Starfish
(1)	plastic	iron	aluminium
(2)	iron	plastic	aluminium
(3)	iron	steel	plastic
(4)	plastic	steel	iron

23. Akmal taped magnet Y to the back of his toy train and held magnet X near to it.



He then observed that the toy train moved backwards and was attracted to magnet X as shown in the diagram below.



What must Akmal do in order to make his toy train move forward?

(1) Drop magnet X a few times.
(2) Replace magnet Y with an iron bar.
(3) Move magnet X further away from magnet Y.
(4) Flip magnet X and its north pole faces magnet Y.

24. Kelly described four types of matter based on their properties as shown in the table below.

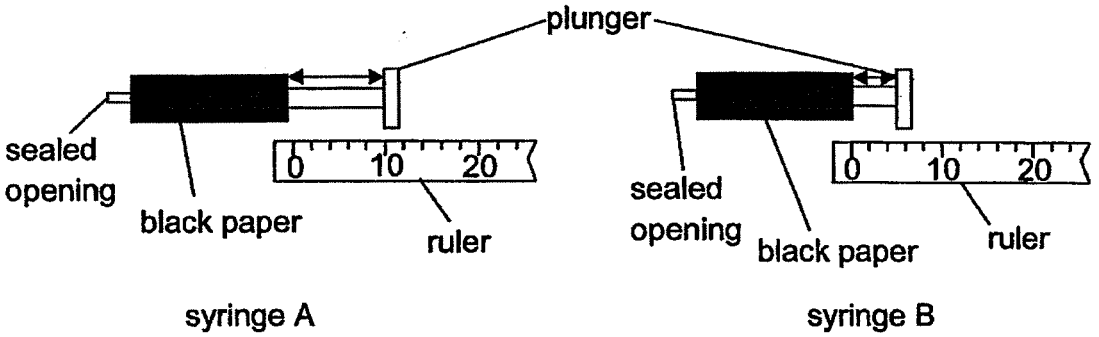
Matter	Has a definite shape?	Has a definite volume?
air	yes	no
oil	yes	yes
milk	no	no
pencil	yes	yes

Based on Kelly's observations above, which matter has its properties correctly stated?

(1) air
(2) oil
(3) milk
(4) pencil

25. Emmy was given two syringes covered with black paper. Syringe A contains substance K while syringe B contains substance L. Emmy did not know what the substances were.

Emmy then pushed the plungers and recorded her observation in the table below.

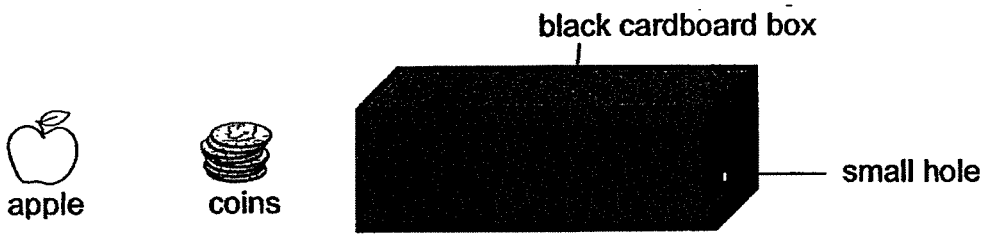


	Distance (mm)	
	Before pushing	**After pushing**
Substance K	10	10
Substance L	10	5

Which one of the following shows the most likely result?

	Substance K	**Substance L**
(1)	cotton wool	air
(2)	air	air
(3)	milk	cotton wool
(4)	water	milk

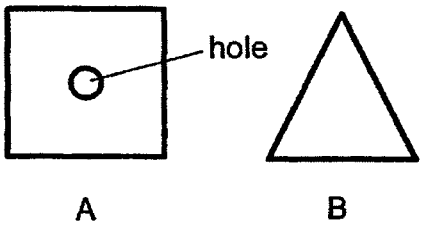
26. Anna has an apple and some coins. She is going to place them into a black cardboard box as shown below. The black cardboard box is completely closed except for a small hole at the side of the box.



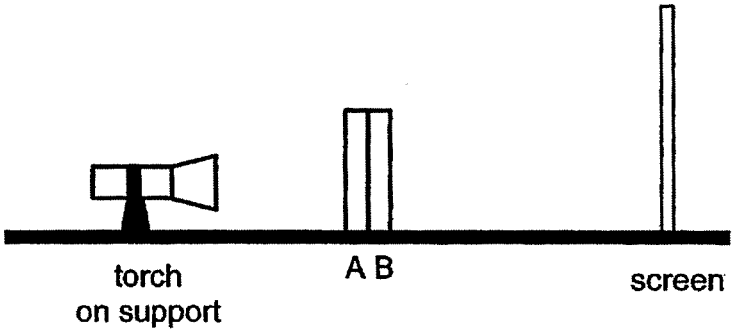
After putting the apple and coins in the black cardboard box, what can Anna observe when she is looking through the hole?

(1) She can see the coins only.
(2) She can see the apple only.
(3) She can see the apple and coins.
(4) She cannot see both the apple and coins.

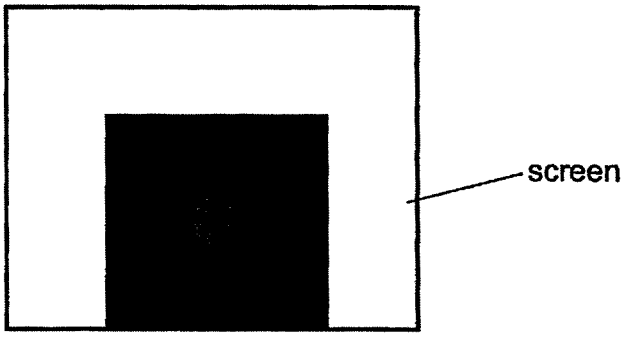
27. Cohen had two objects, A and B, which were made of two different materials.



He then arranged the objects in a set up as shown below.



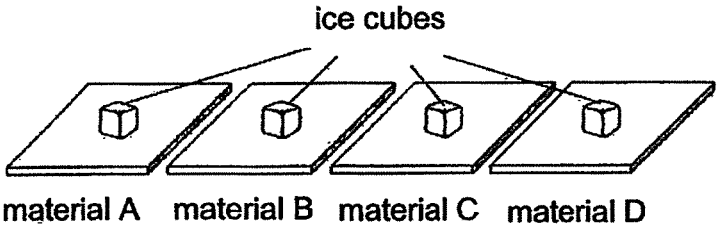
When he switched on the torch in a dark room, he observed the following shadow cast on the screen.



Which of the following represents the properties of the materials for objects A and B?

	A	B
(1)	no light passes through	all light passes through
(2)	most light passes through	no light passes through
(3)	no light passes through	some light passes through
(4)	no light passes through	no light passes through

28. Ramsey placed a similar ice cube on each of the four materials, A, B, C and D, as shown in the diagram below. All four materials are of the same size and thickness. He recorded the time taken for each ice cube to melt completely.



It was observed that the ice cube on material B melted completely first followed by materials C, A and then D.

Based on the results above, what is the aim of his experiment?

He wanted to find out if the _____ would affect the time taken for the ice cube to melt.

(1) type of the material
(2) size of the material
(3) type of the ice cube
(4) size of the ice cube

(Go to Booklet B)

Rosyth School
End-Of-Year Examination 2019
SCIENCE
Primary 4

Total Marks: ____/100

Name: _____

Class: Primary 4 _____

Register No. _____

Date: 24 October 2019

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

Parent's Signature: _____

Booklet B

Instructions to Pupils:

1. For questions 29 to 41, give your answers in the spaces given in Booklet B.

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

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

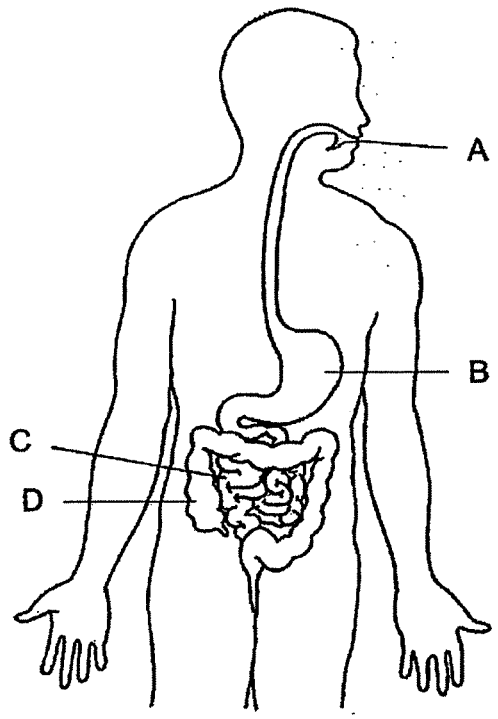
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For questions 29 to 41, write your answers in this booklet. (44 marks)

29. Fill in the blanks in the table with the names of the different groups of animals. [2]

	Characteristic	Group
(i)	body covered with hair	
(ii)	three body parts	

30. The diagram below shows the human digestive system.



Identify the part where

(a) digestion first takes place : _____ [1]

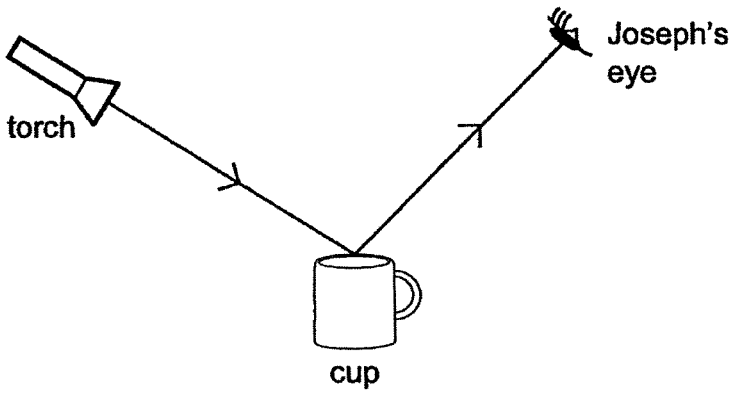
(b) there is no digestion : _____ [1]

(c) digestion is fully completed: _____ [1]

31. Tick (✓) in the box if each of the following has a definite shape and/or a definite volume. [3]

		Has definite shape	Has definite volume
(a)	water		
(b)	glass bottle		
(c)	oxygen		

32. The diagram shows how Joseph sees a cup.



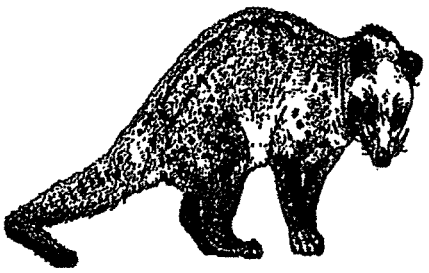
Fill in the blanks using the correct words in the box.

absorbed	source	reflected	house

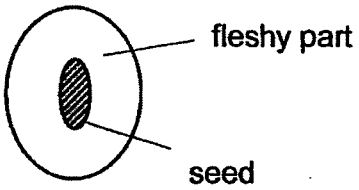
(a) The torch is the light _____ . [1]

(b) Light is _____ by the cup. [1]

33. The parts of the digestive system of Animal A have similar functions as the parts of the human digestive system.



animal A

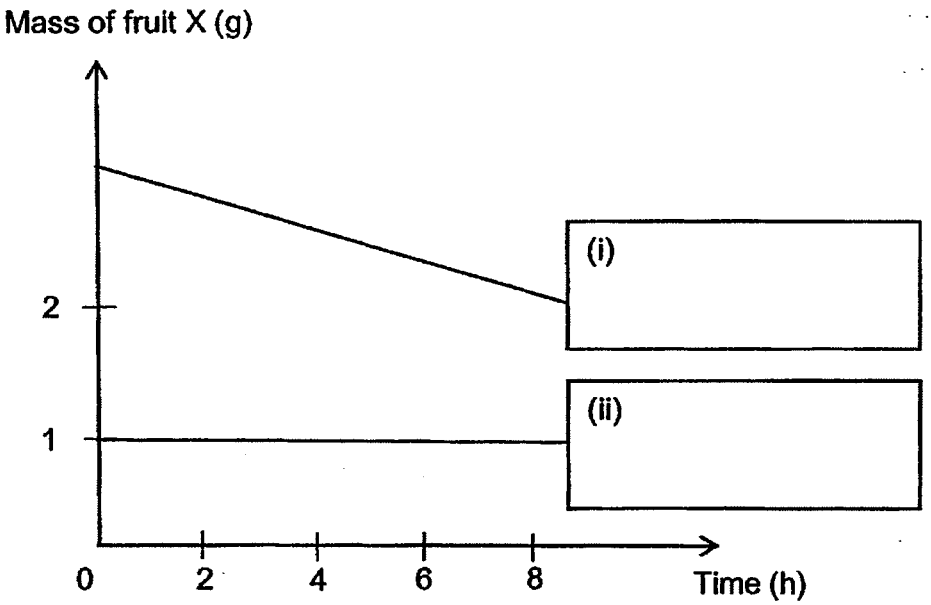


fruit X

Animal A eats fruit X. The fleshy part of fruit X can be digested by the digestive system of animal A. The seed of fruit X cannot be digested.

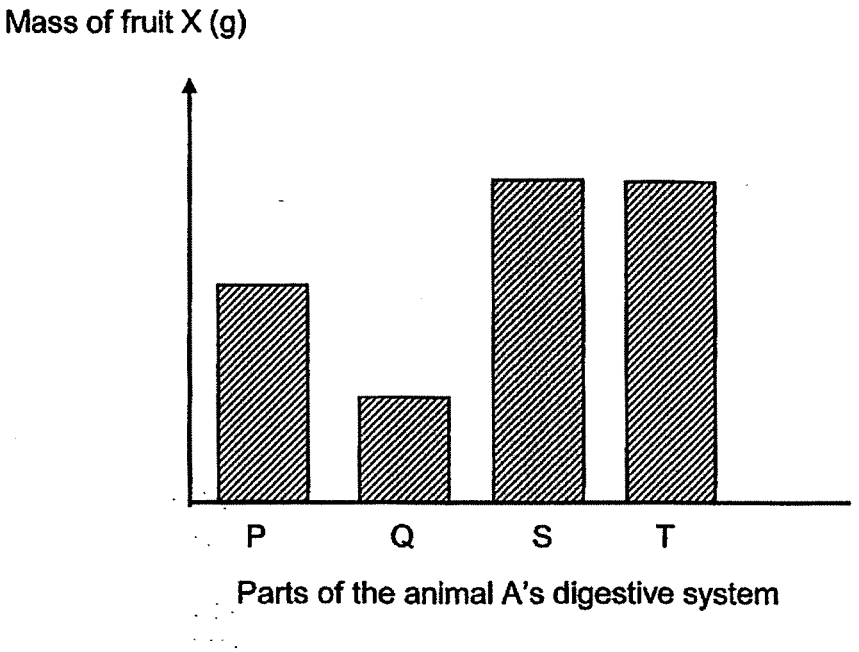
The graph below shows the mass of fruit X as it passes through the digestive system of animal A.

(a) Identify the line that represents the 'fleshy part' and 'seed' of fruit X. Write these words in the boxes below. [1]



Question 33 is continued on page 5

The graph below shows the mass of fruit X as it leaves the different parts of animal A's digestive system. The parts P, Q, S and T are not in the correct order as in animal A's digestive system.



(b) Based on the graph above, match and write down parts, P, Q, S and T, in the graph to the parts of animal A's digestive system in the table below. [2]

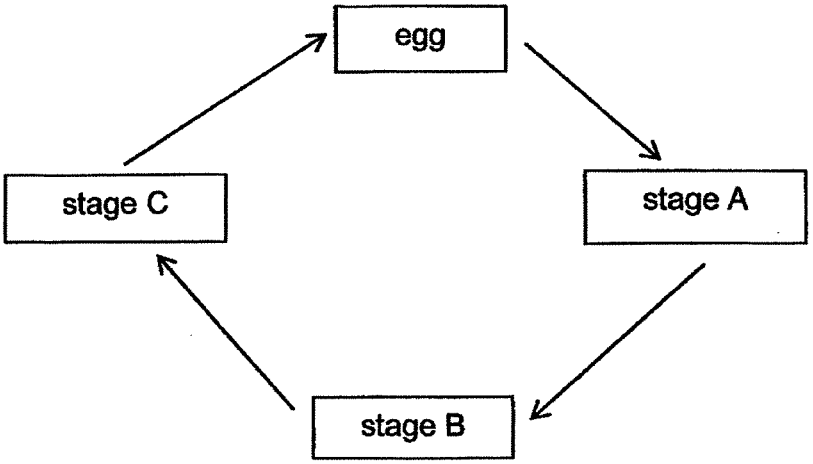
Parts of animal A's digestive system			
mouth	gullet	stomach	small intestine

(c) What will happen to the seed of fruit X after digestion is completed? [1]

_____

_____

34. The diagram below shows the life cycle of insect P.



(a) Besides the egg stage, at which stage, A, B or C, does insect P stop eating? [1]

Stage _____

(b) What could insect P be? [1]

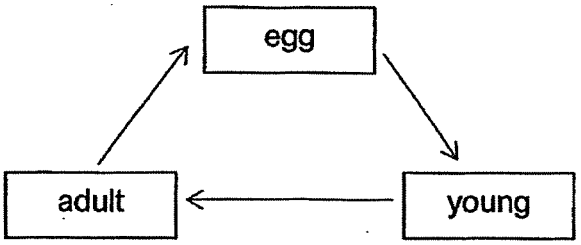
_____

(c) The female of insect P often lays many eggs at one time. Explain why. [1]

_____

_____

35. The diagram below shows the life cycle of organism W.



Ahmad studied the effect of light intensity on the life cycle of an organism W. His findings are shown below.

Light intensity (units)	Number of days for one complete life cycle
4	46
6	20
8	16
10	10
12	7

(a) Why did Ahmad use a light sensor for the above experiment? [1]

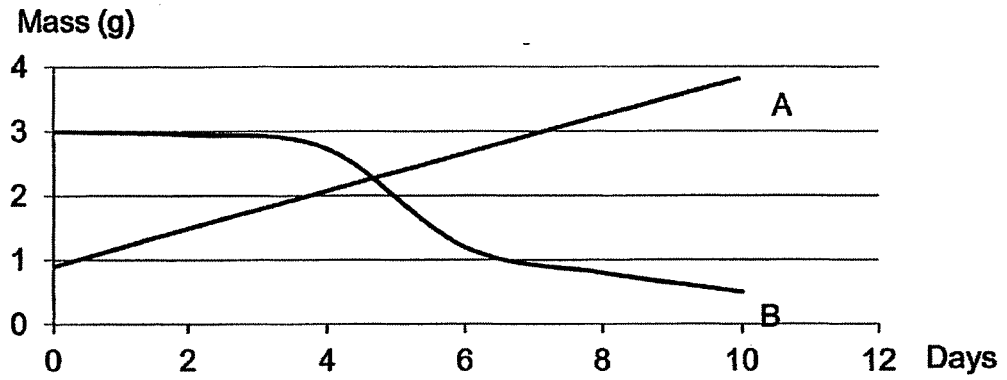
_____

(b) At which light intensity would there be the greatest number of organism W? Explain why. [2]

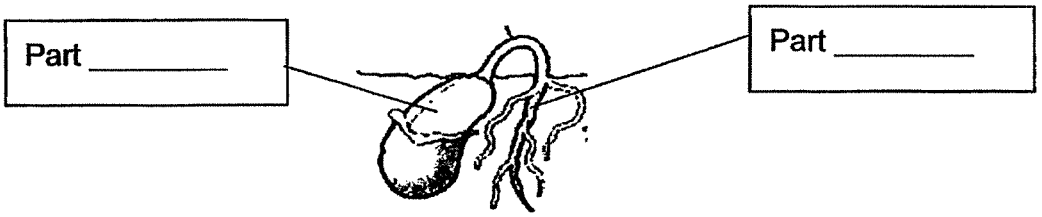
_____

_____

36. The graph below shows how part A and part B of a seed changes their masses as the seed germinates into a seedling.



(a) Based on the graph above, identify the parts A and B, by filling in the boxes below with the letters. [1]



Different amounts of water were given to three seedlings of the same kind, A, B and C, each day. The heights of the seedlings were measured after two weeks and the results are shown in the table below.

Seedling	**A**	**B**	**C**
Amount of water given (ml)	10	20	30
Height of plant (cm)	7	9	13

(b) Based on the above experiment, tick (✓) the correct variables accordingly in the table below. [2]

Variable	**Changed**	**Kept the Same**	**Measured**
The type of seedlings used			
The amount of water given to the seedlings			
The height of the seedlings after two weeks			
Location of the set-ups			

Question 36 is continued on page 9

(c) State the relationship between the amount of water given and the height of plant. [1]

_____

_____

37. Wee Chong wanted to find out if the size of the seed will affect the number of days taken to germinate.



small medium large

(a) What would appear first when the seed germinates? [1]

_____

His findings are as shown below.

Size of seed	Number of days taken to germinate
small	4
medium	2
large	6

(b) What is the possible conclusion for his experiment? [1]

_____

_____

(c) What is the advantage of a bigger seed for the seedling? [1]

_____

_____

(d) State the conditions that must be provided for the seeds to germinate. [1]

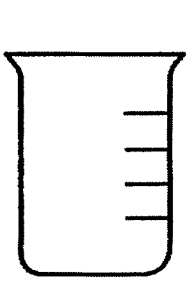
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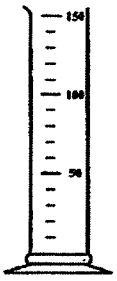
38. Eik Fang wanted to find out the volume of a glass ball.



glass ball

(a) Tick the correct apparatus to measure the volume of the glass ball. [1]





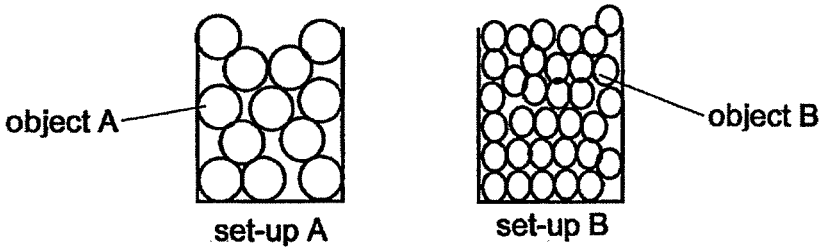


She carried out the following steps.

1) Pour 50 ml of water into the apparatus.
2) Put the glass ball into the apparatus gently.
3) Measure the increase in the water level to find out the volume of the glass ball.

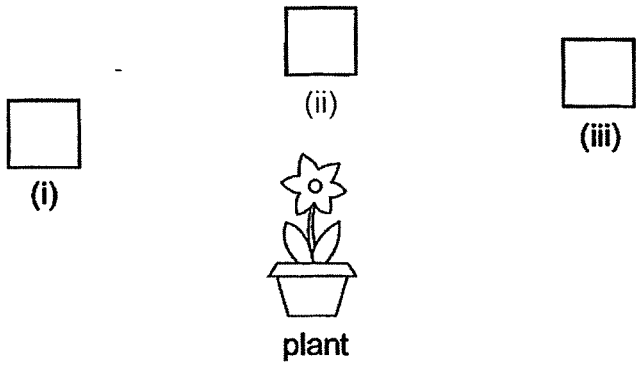
(b) Explain why the water level increase after putting in the glass ball. [1]

(c) Two identical containers were filled to the brim, with object A and B, as shown in the diagram below.



Which set-up could be filled with more water? Explain your answer. [2]

39. Michelle placed a torchlight at three different positions and measured the length of the shadow of the plant formed.



The table below shows the result for the experiment.

Position	**A**	**B**	**C**
Length of shadow (cm)	35	40	3

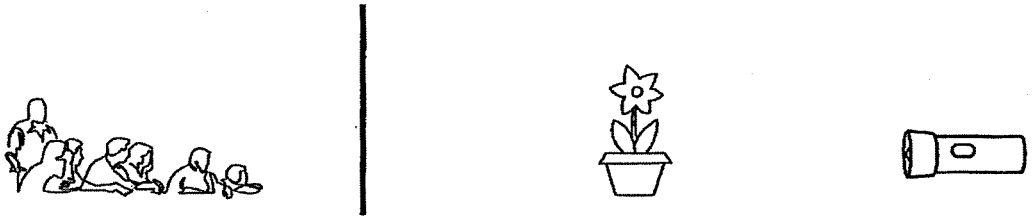
(a) Based on the results, label position C in the box, i, ii or iii, to represent the position of the torchlight correctly [1]

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

_____

_____

In another set-up, Michelle placed the objects below to form a shadow of the plant on the screen.

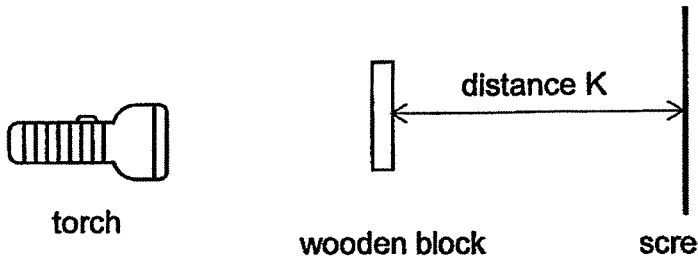


(c) She wanted the people to see the shadow formed on the screen from the other side. Explain why she used a tracing paper and not a wooden board as the screen. [2]

_____

_____

40. Shirley set up an experiment as shown in the diagram below. When the torch was switched on, a shadow of the wooden block was formed on the screen.



Shirley wanted to find out if distance K would affect the height of the shadow formed on the screen. The torch was not moved throughout the experiment.

She recorded her observations in the table below.

Distance K (cm)	Height of shadow (cm)
5	9
10	15
15	21

(a) State the relationship between distance K and height of shadow. [1]

_____

_____

(b) Without changing distance K, suggest one way to enlarge the shadow of the wooden block. [1]

_____

_____

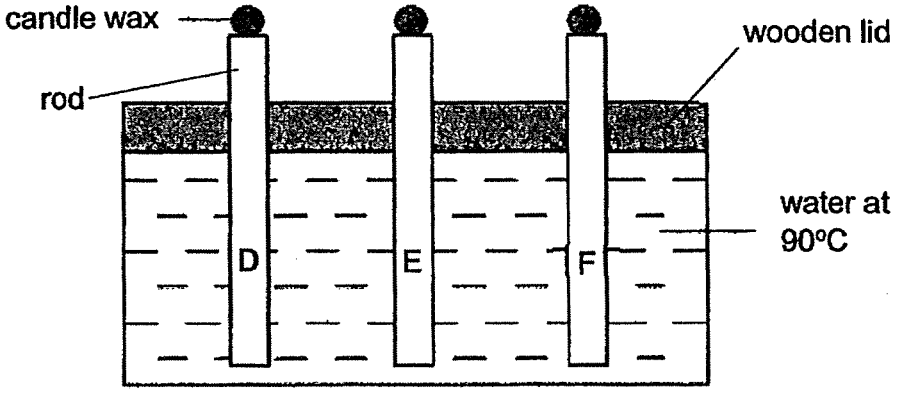
(c) State the property of light that forms shadows. [1]

_____

(d) What can you do to form two shadows of the wooden block on the screen at the same time? [1]

_____

41. Josiah set up an experiment as shown in the diagram below. He wanted to find out if the type of materials affects the time taken for the material to conduct heat. He used three rods that were made of different materials, D, E and F, in his experiment.



He recorded the time taken for the candle wax on each rod to melt completely in the table below.

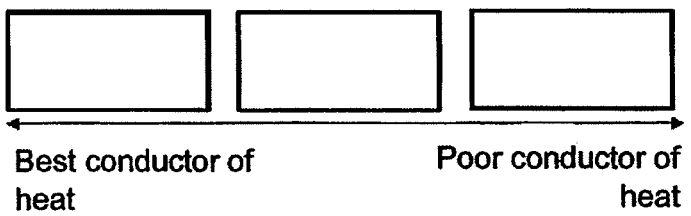
Material	Time taken for the candle wax to melt completely (min)
D	11
E	4
F	7

(a) State two variables of the rod that were kept the same to ensure a fair test. [1]

(i) _____

(ii) _____

(b) Based on the results, arrange the material, D, E and F based on how well they conduct heat starting with the best conductor of heat. [1]



Question 41 is continued on page 14

(c) The picture below shows a cooler bag to keep ice cream.



Which one of the materials, D, E or F, is the most suitable to make the cooler bag? Explain your answer. [2]

_____

_____

End of Paper

SCHOOL : ROSYTH PRIMARY SCHOOL

LEVEL : PRIMARY 4
SUBJECT : SCIENCE
TERM : 2019 SA2

SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	1	1	3	2	2	1	4	1	3

Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
3	4	3	1	4	3	1	1	2	3

Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28
3	4	4	4	3	4	3	1

SECTION B

Q29)	i)mammal ii)insects
Q30)	a)A b)D c)C
Q31)	a)Has definite volume b) Has definite shape / Has definite volume
Q32)	a)source b)reflected

Q33)	a)i)fleshy part ii)seed b)S , T, P, Q c)It would be pass to the large intestine and water is removed. Then, it would be passed out of animal A as stool.
Q34)	a)B b)butterfly c)Some of the eggs will get eaten by other animals while some of the eggs will become an adult. The female of insect P lays many eggs to increase the amount of the young becoming the adult and to ensure the continuity of the species.
Q35)	a)To measure the light intensity on the life cycle. b)12. The number of days for one complete life cycle is the least showing that it grew the fastest at 12. After the 7 days, W can reproduce and have the most amount of organism W.
Q36)	a)Part B Part A b) c)As the amount of water given increases the height of the plant increase.

	√	
√		
		√
	√	

Q37)	a)Roots. b)The size of the seed does not matter to the number of days taken to germinate. c)There will be more stored food in the bigger seed for the seedling to use. d)warmth , water , oxygen
Q38)	a) ☐ ☑ ☐ b)Glass ball occupies space thus it has displaced the water. c)A. The air gaps between object A is bigger than the air gaps between object B. Thus, there is more air spaces in set-up A than set-up B. When water is poured into the containers, it will fill up the air spaces. Thus, A could be filled with more water.
Q39)	a)ii (C) b)When the torch is placed above the plant the length of the shadow will be shorter. c)The tracing paper is a translucent object and allows some light to pass through but the wood does not allow any light to pass through so the people watch the show cannot see anything when she uses wood.
Q40)	a)As distance K increases the height of the shadow increases. b)Bring the torch nearer to the wooden block. c)Light travels in a straight line. d)Shine two torches at the wooden block in a slightly different position.
Q41)	a)i)The length of the rod. ii)the thickness of the rod. b)E , F , D

	c)D. The wax on rod D takes the shortest time to melt and the cooler bag will conduct the heat from the surrounding air to the ice cream.