Rosyth School
Semestral Examination 2 for 2010
SCIENCE
Primary 4

Total Marks: ____/100

Name: _____

Class: Pr 4 _____ Register No. _____ Duration: 1 h 45 min

Date: 28 October 2010 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 30 in Booklet A, shade the correct ovals on the Optical Answer Sheet (OAS) provided using a 2B pencil.
5. For questions 31 to 44, give your answers in the spaces given in the Booklet B.

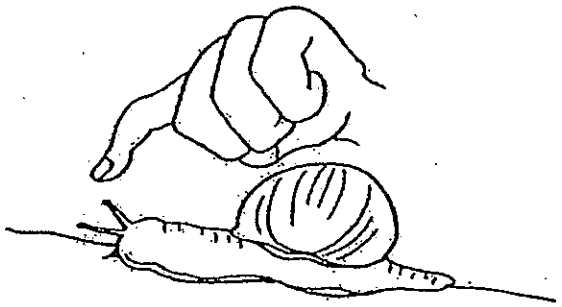
	Maximum	Marks Obtained
Booklet A	60 marks	
Booklet B	40 marks	
Total	100 marks	

* This booklet consists of 19 pages. (Pg. 1 to 19)

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. A snail hides itself in its shell when touched.



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

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

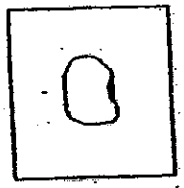
2. A, B, C and D represent four different places. The types of living things and the number of living things were recorded in the table as shown below.

Place	A	B	C	D
Types of living things	20	16	25	18
Number of living things	100	200	150	50

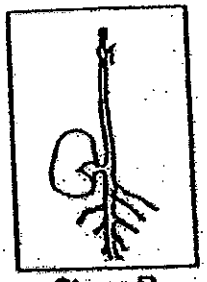
Which place has the greatest diversity of living things?

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

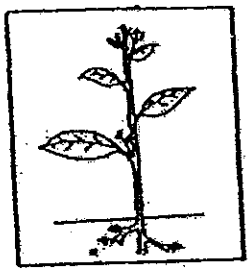
3. The pictures below show the different stages in the growth of a seed.



Stage A



Stage B



Stage C

At which of the above stages would sunlight not be important?

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

4. Which of the following help a seedling to grow into an adult plant?

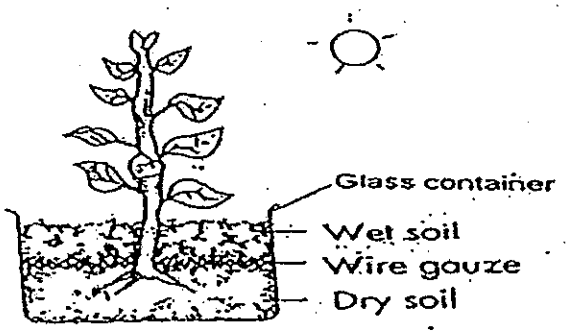
A: Air
B: Food
C: Water
D: Warmth

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

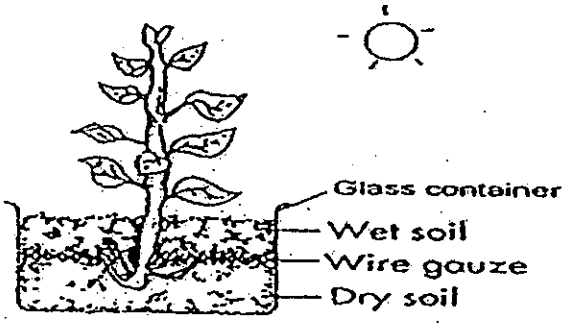
5. Which one of the following is the main function of leaves?

(1) Make food
(2) Take in water
(3) Hold plant upright
(4) Transport the food to the roots

6. Jenny grew a small plant in a glass container. She set up the container as shown below.



After a few days, she made the observation as shown below.



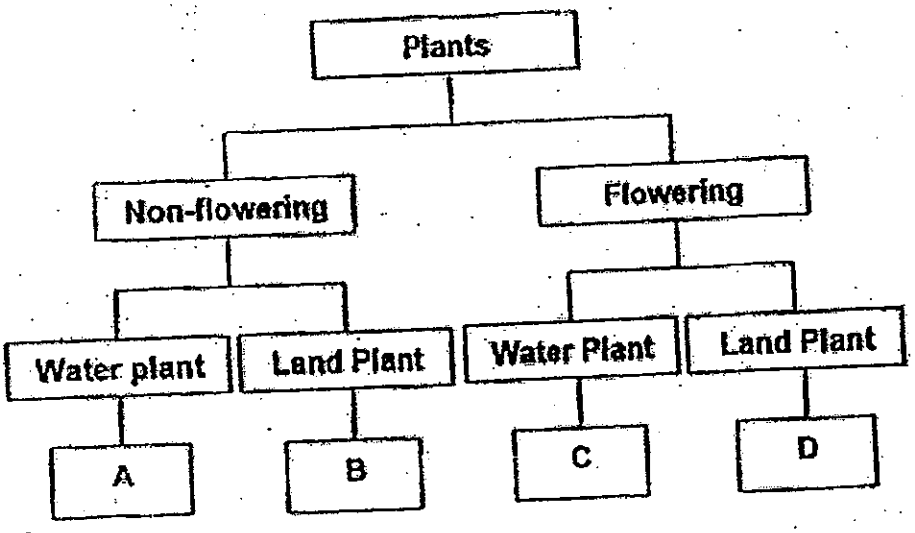
What could be inferred from the above investigation?

1. Roots move towards light.
2. Roots move towards water.
3. Stem moves towards light
4. Roots move towards light and water.

7. The table below gives information on two plants T and U, based on two characteristics.

Plants	Grows on land	Bears fruit
T	Yes	Yes
U	No	No

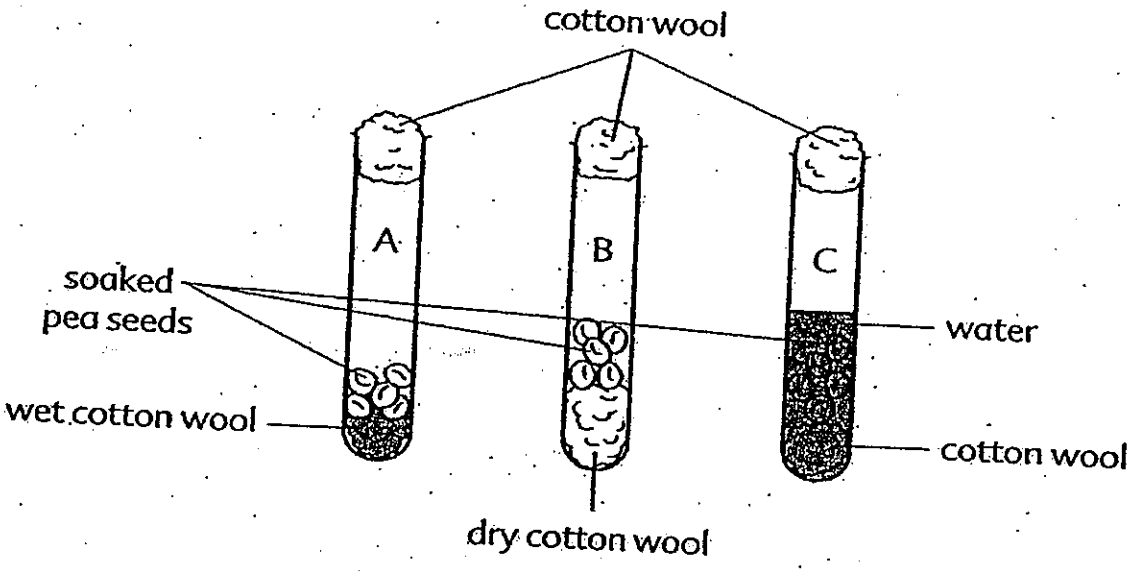
Use the chart below, to classify plants T and U.



In which groups, do plants T and U belong?

	Plant T	Plant U
(1)	A	B
(2)	B	A
(3)	C	D
(4)	D	A

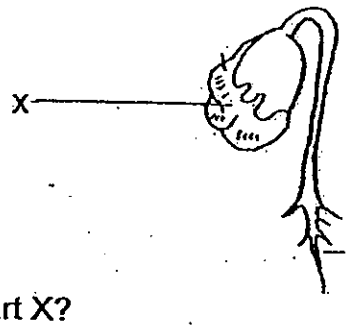
8. Nancy carried out an experiment with pea seeds. She set up the three test tubes shown below and left them for ten days in a room with a constant temperature of 25 °C.



After ten days, which of the seed/s would have germinated?

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

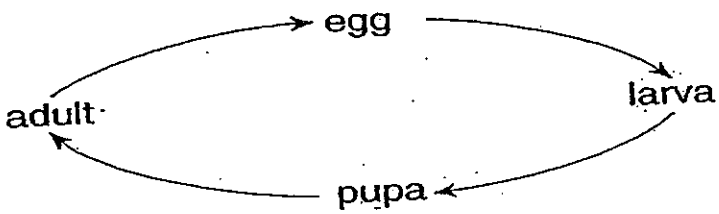
9. The diagram below shows a seedling.



What is the function of part X?

(1) Protect the baby plant.
(2) Hold the seedling upright.
(3) Provide food for the seedling.
(4) Absorb water for the seedling.

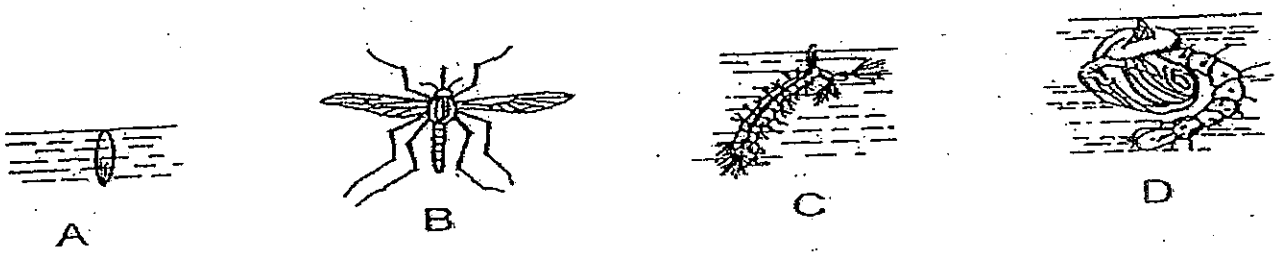
10. Study the diagram of the life cycle below.



Which one of the following animals has the life cycle shown above?

(1) Butterfly
(2) Chicken
(3) Cockroach
(4) Grasshopper

11. Refer to the stages in the life cycle of a mosquito as shown below.



Which one of the followings shows the correct sequence for the life cycle?

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

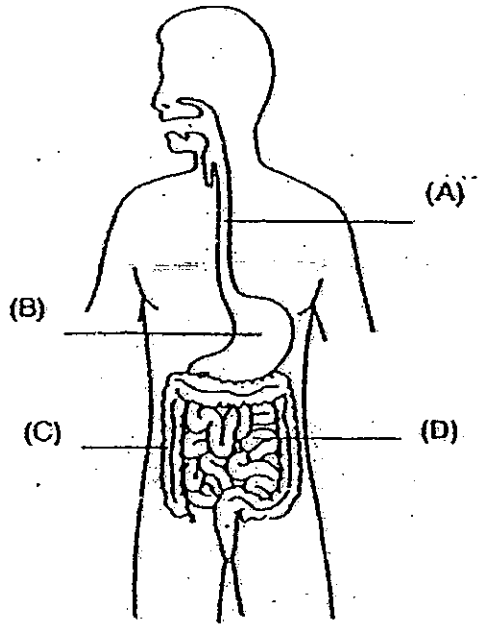
12. James conducted a study on Animal A and Animal B. He used a checklist and placed a tick in the appropriate box when he made an observation. The completed checklist is as follows:

Observation	Animal A	Animal B
Eggs are laid in water	✓	✓
There are 4 stages in the life cycle		
It has six legs		✓

Which of the following could be Animals A and B?

	Animal A	Animal B
(1)	frog	butterfly
(2)	frog	dragonfly
(3)	butterfly	frog
(4)	dragonfly	frog

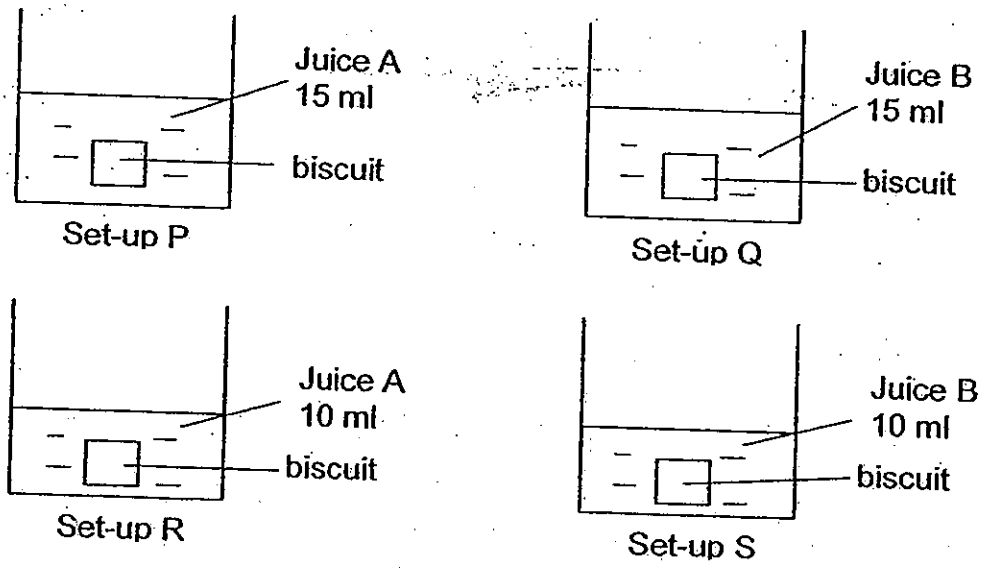
13. Adrian studied the diagram of the digestive system as shown below. He made a table to list the functions of the parts labelled A, B, C and D.



Which part of the digestive system (A, B, C or D) has an **incorrect** function listed next to it?

	Parts of the digestive system	Functions
(1)	A	Pushes the food to the stomach
(2)	B	Digestion takes place
(3)	C	Removes water from undigested food
(4)	D	Stores digested food

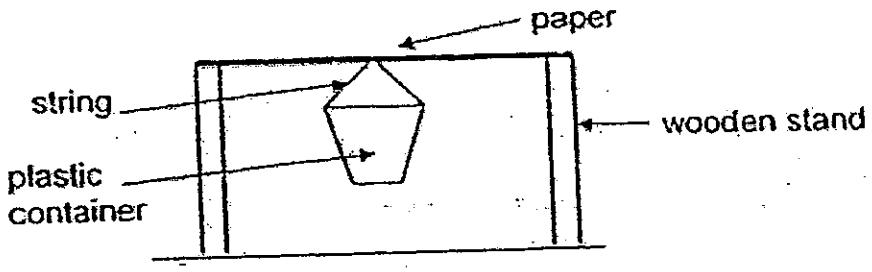
14. Jonah carried out an experiment to find out which juice, A or B will dissolve a biscuit faster. He prepared four set-ups as shown below.



Which two set-ups should Jonathan use for a fair experiment?

(1) P and R ×
(2) Q and S ×
(3) Q and R ✓
(4) R and S ×

15. Mr Lim set up an experiment to test four different types of paper. He attached the plastic container to a paper as shown below. He placed the marbles one at a time in the plastic container until the paper tore. He repeated the experiment with the three other types of paper.



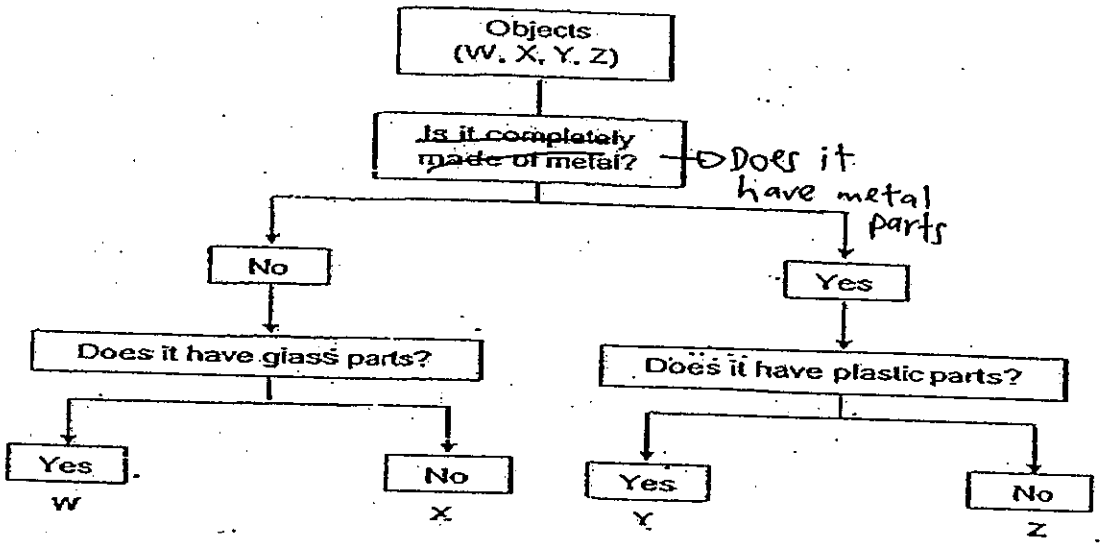
He recorded the least number of marbles needed to tear the papers in the table below.

Type of paper	Number of marbles
Art paper	10
Newspaper	4
Tissue paper	1
Waxed paper	8

Which property can be determined by the above experiment?

(1) Strength
(2) Elasticity
(3) Flexibility
(4) Hardness

16.



Which one of the following most likely represents a car?

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

17. Matter is anything that has mass and occupies space.

Which of the following is not matter?

(1) air
(2) soil
(3) water
(4) shadow

18. A ball of plasticine was put into a beaker containing 200 ml of water. The water rose to the level 350 ml, as shown in Figure R.

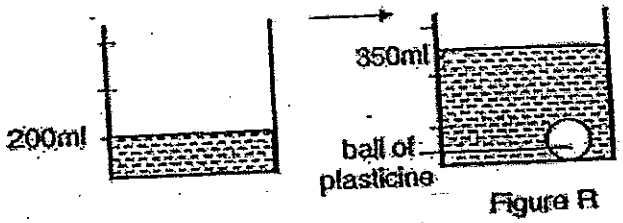


Figure R

The plasticine was then taken and moulded into another shape. It was put back into the beaker as shown in Figure S.

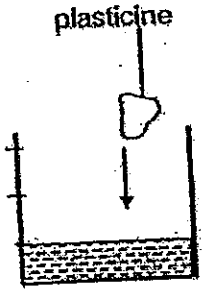


Figure S

What would the new water level be?

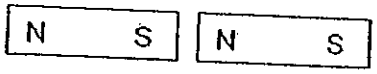
(1) 300ml
(2) 350ml
(3) 450ml
(4) 500ml

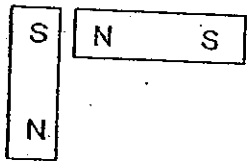
19. Devi wanted to find out if air or water has a greater mass. She used a balance and two balloons for her investigation.
Which of the following variables must she keep the same for a fair experiment?

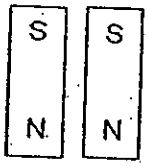
A: Type of balance
B: Shape of the balloons
C: Volume of air and water
D: Mass of the deflated balloons

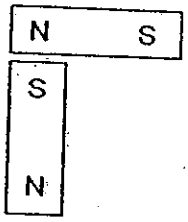
(1) A and B only
(2) A and D only
(3) B and C only
(4) C and D only

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

(1) 

(2) 

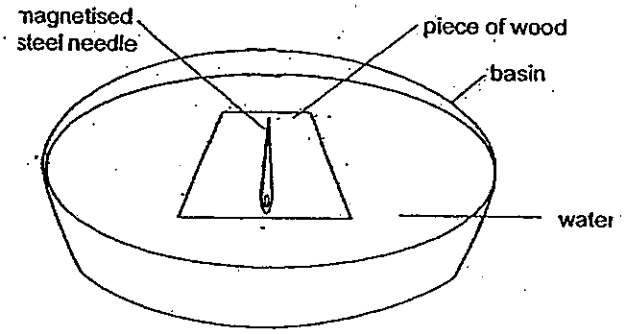
(3) 

(4) 

21. Which of the following can be attracted by a magnet?

(1) Steel ball
(2) Plastic ball
(3) Rubber ball
(4) Wooden Ball

22. A magnetised steel needle is placed in a basin of water. It is freely allowed to come to a rest.



In which direction will the magnetised steel needle come to a rest?

(1) East – West
(2) North - East
(3) North – South
(4) South – West

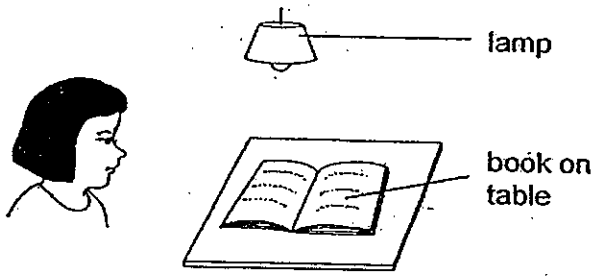
23. The table below shows the furthest distance at which the four different types of magnet can attract a paper clip.

Magnet	A	B	C	D
Furthest distance between the magnet and the paper clips	6 cm	12 cm	8 cm	15 cm

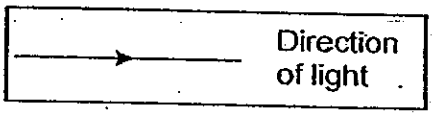
Which one of the magnets is the weakest?

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

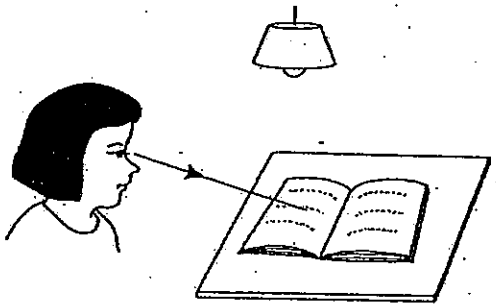
24. Look at the picture below.



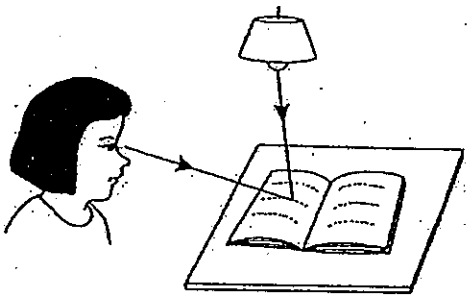
Which one of the following explains why Sue can see the book on the table?



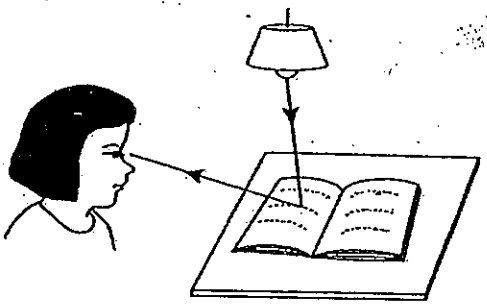
(1)



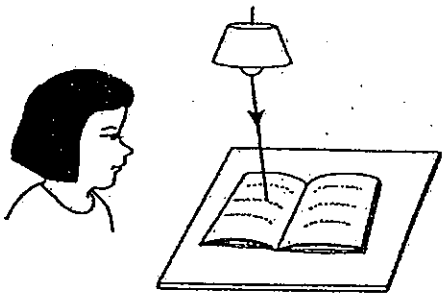
(2)



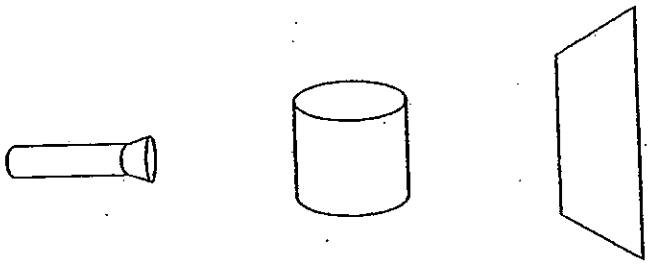
(3)



(4)



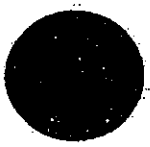
25. Peter shines a torch on the metal container as shown below.



torch metal container screen

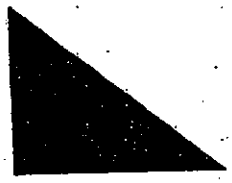
Which one of the following shows the shadow of the metal container on the screen?

(1)

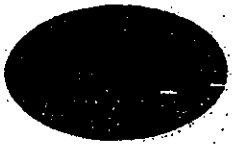


(2)

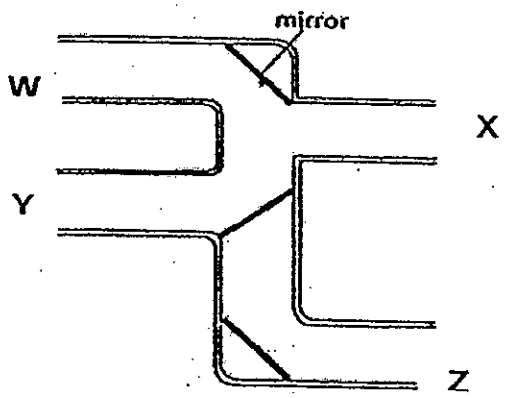
(3)



(4)



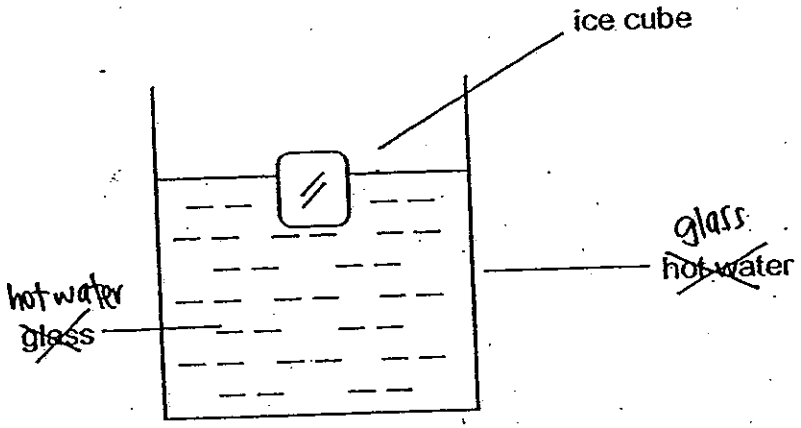
26. The diagram below shows a connection of pipes. Three mirrors are placed inside the pipes.



In order to see an object through the pipes, where should the eye and the object be placed respectively?

	Eye at position	Object at position
(1)	W	X
(2)	X	Z
(3)	Y	W
(4)	Z	Y

27. Jeffrey places an ice cube into a glass of hot water.



Which one of the following is correct?

(1) The ice cube loses heat to hot water.
(2) The hot water loses heat to the ice cube.
(3) The hot water gains heat from the ice cube.
(4) The ice cube does not gain heat or lose heat.

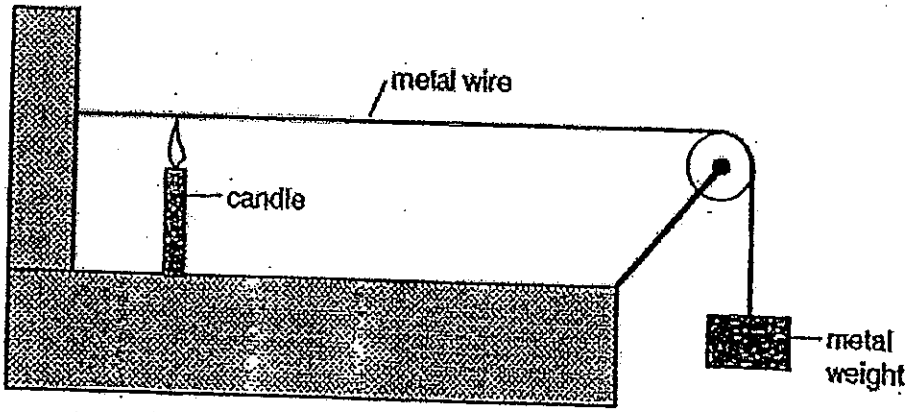
28. Paul and Derrick were playing a game. They were given ice-cubes to see whose ice-cubes would take a longer time to melt completely. Each child chose a container made of different materials to place their ice-cubes.

For their game to be a fair one, which of the following variables should they keep the same?

A: The size of their ice-cubes
B: The material of containers in which they placed the ice-cubes
C: The number of ice-cubes

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

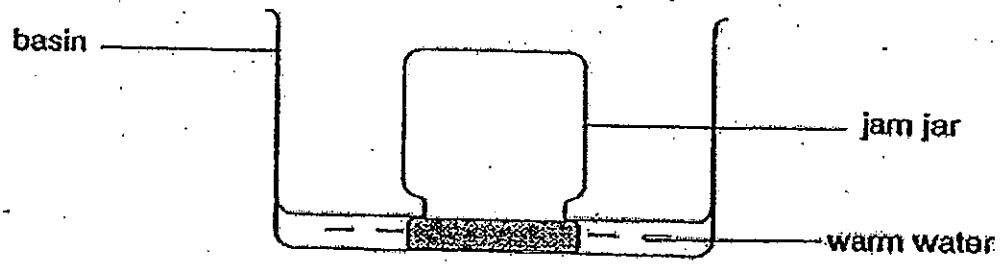
29. Study the diagram below carefully. A piece of metal wire was stretched tight by a metal weight. A candle was lit at the position shown in the diagram for some time.



What would happen to the metal weight after the wire was heated for sometime?

(1) It became lighter.
(2) It moved slightly upwards.
(3) It moved slightly downwards.
(4) It remained at the same height.

30. Mrs Phuay could not open the lid of her jam jar that she had just taken out of the refrigerator. She placed the jam jar into a basin of warm water as shown in the diagram below. After a short while, she took the jar out and was able to open the lid.



Why was Mrs Phuay able to open the lid?

(1) The lid lost heat and it contracted.
(2) The jam jar lost heat and it contracted.
(3) The lid gained heat and it expanded.
(4) The jam jar gained heat and it expanded.

End of Part I

Rosyth School
Semestral Examination 2 for 2010
SCIENCE
Primary 4

Total Marks: /40

Name: _____

Class: Pr 4_____ Register No._____ Duration: 1h 45min

Date: 28 October 2010 Parent's Signature: _____

BOOKLET B

Instructions to Pupils:

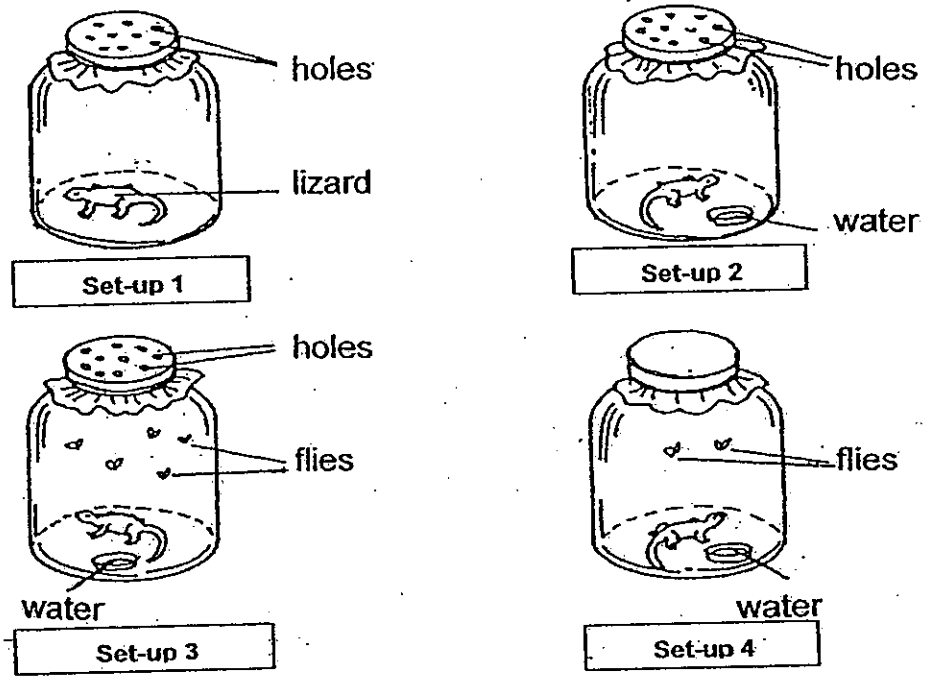
1. For questions 31 to 44, give your answers in the spaces given in this Booklet B.

* This booklet consists of 11 pages. (Pg. 1 to 11)

PART II (40 MARKS)

For questions 31 to 44, write your answers in this booklet.

31. Rahim prepared 4 set-ups as shown below.



(a) In which set-up (1, 2, 3 or 4) will the lizard be able to survive the longest? Give a reason. (1m)

_____

_____

(b) Which two set-ups can be used to show that food is needed for living things? (1m)

_____

(c) State one other characteristics of living things that can be inferred from the above set-ups. (1m)

_____

32. The table gives the characteristics of four organisms. A tick (√) means that the organism has the characteristic and a dash (-) means that the organism does not have the characteristics.

Characteristics	S	T	U	V
An animal that has 3 body parts, lays eggs and can fly.	√	-	-	-
An organism that can make its own food and respond to changes.	-	√	-	-
An animal that lives in water and on land, has hair on its outer covering and lay eggs.	-	-	√	-
An organism that breaks down plants and animals that is dead or alive before feeding on them.	-	-	-	√

(a) Identify the following organisms represented by letters (S, T, U or V) in the table. Write the correct letter in each box. (2m)

Butterfly	
Balsam plant	

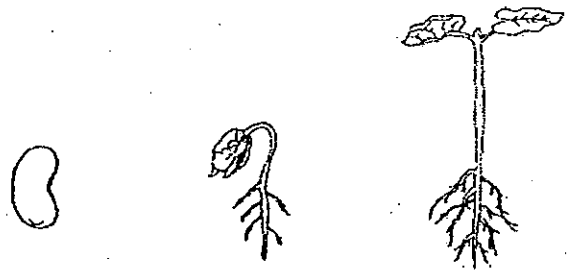
(b) Give an example of organism V. (1m)

_____

(c) In which group of animals, should you classify organism U? (1m)

_____

33. The diagram below shows the stages in a life cycle of a plant.



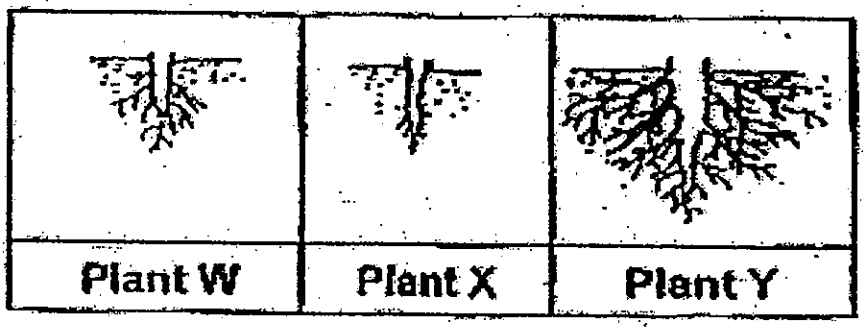
Choose the correct words from the box to answer the question below.

egg	seed	young plant	adult plant

Name the stages A and B in the life cycle of the plant. (2m)

A:_____ and B:_____

34. The diagram below shows the roots of three different plants.



(a) Based on pictures above, state the similarities of the roots among the three plants. (1m)

_____

(b) State a difference between the roots of plant X and plant Y. (Do not compare the number of root hairs) (1m)

_____

_____

(c) State the advantage plant Y has compared to plants X and W. (1m)

_____

35. Choose the correct words from the box to answer the questions below

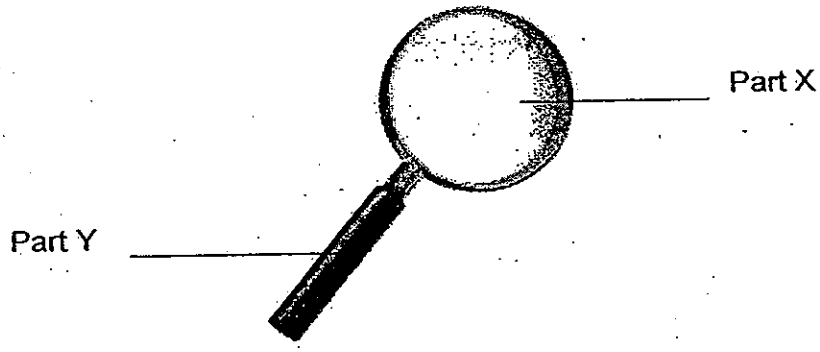
gullet	large intestine	mouth	small intestine	stomach

In a human digestive system, name the part where

(a) digestion begins : _____ (1m)

(b) digestion is completed: _____ (1m)

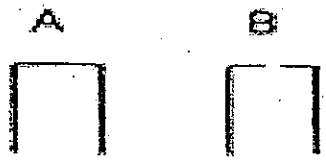
36. The diagram below shows a magnifying glass.



(a) Part X is made of glass because it allows _____ to pass through so that the person can see the magnified object. (1m)

(b) Part Y is made of _____ because Y has to be strong. (1m)

37. Eric had two cups, Cup A and Cup B with a hole on the top as shown below.



He lowered the two cups completely into a basin filled with water.

(a) What observations would Eric make? (2m)

A: _____

_____

B: _____

_____

(b) Explain the observation for Cup A. (1m)

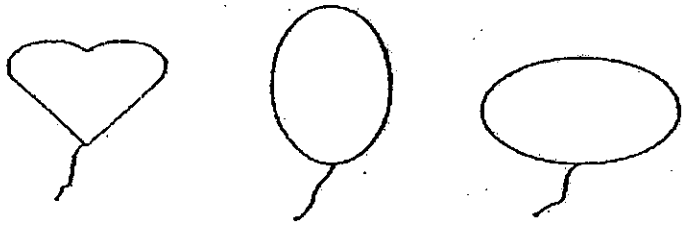
_____

_____

_____

_____

38. Tom pumped the same amount of air into three balloons shown below.

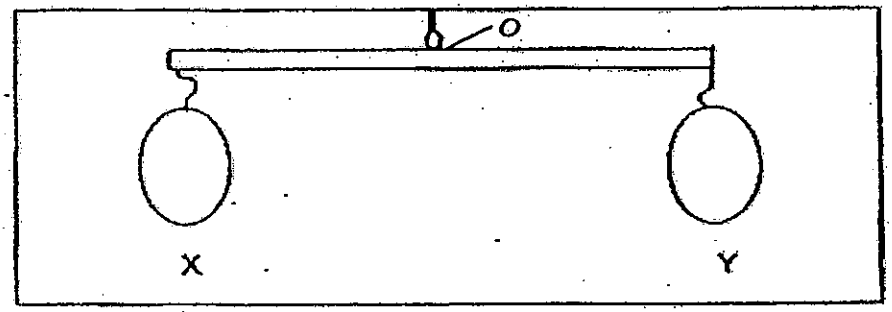


(a) What can he infer from his observations above? (1m)

_____

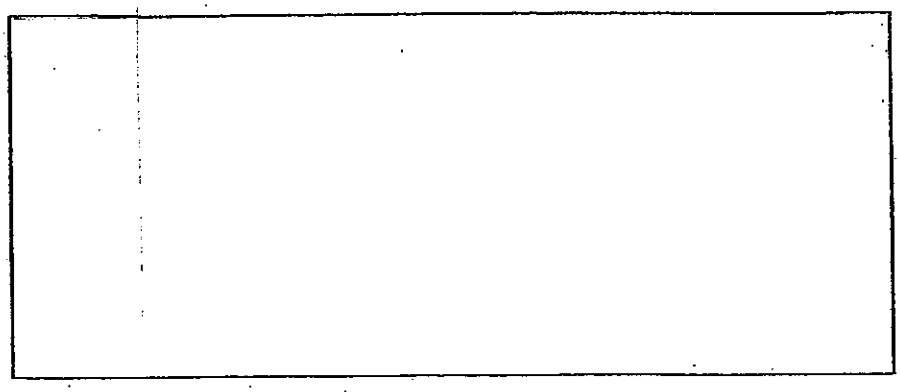
_____

He prepared the set-up as shown below. The point O is the centre of the ruler.



Using a pin he pricked Balloon Y.

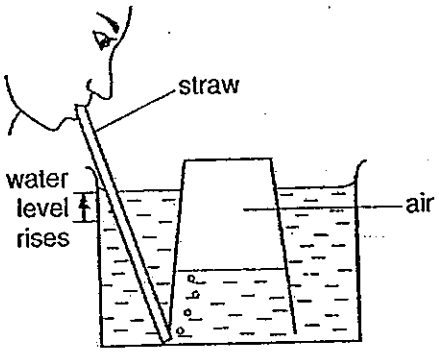
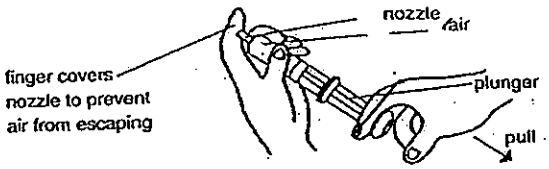
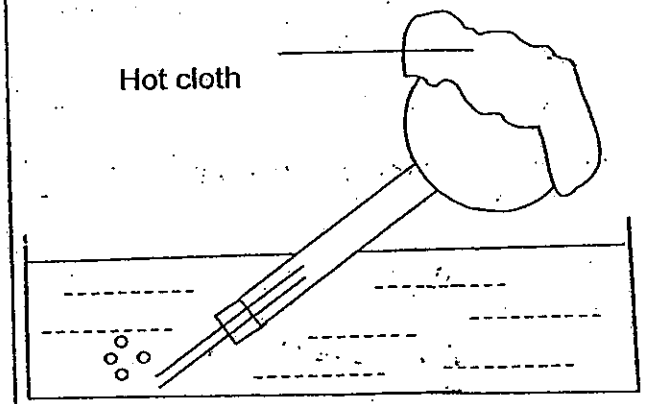
(b) What do you think Tom will observe? Draw and label your answer in the box provided below. (1m)



(c) State the property of air for the observation in (b). (1m)

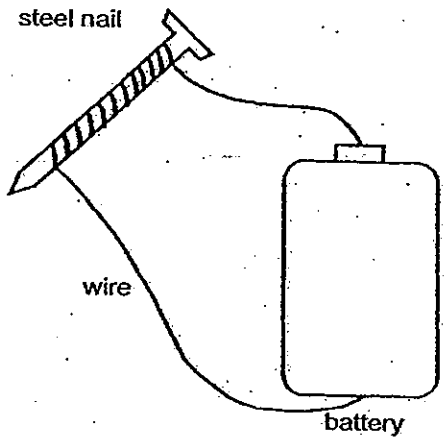
_____

39. Ruth conducted three experiments as shown below. Match the correct property of air that can be concluded using the experimental set-up.[3m]

Experiment set-up	Property
	• Air can be compressed
	• Air expands when heated
	• Air occupies space

40. Tom had some metal pins. He used a steel nail to attract the metal pins but the pins were not attracted.

Then he prepared an electric circuit as shown below.



He used the steel nail in the electric circuit to attract the metal pins and the pins were attracted.

(a) What has happened to the steel nail in the electric circuit that it was able to attract the metal pins? (1m)

_____

Using the electric circuit, Tom wanted to find out if the material of the nail will affect his above observation.

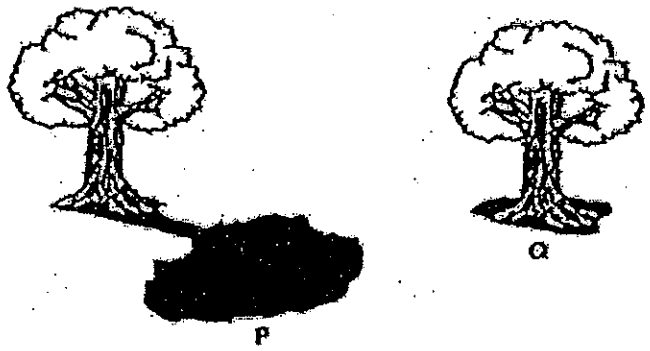
(b) Which variable must he change in the above electric circuit? (1m)

_____

(c) State another way, you can make the steel nail attract the metal steel pins. (1m)

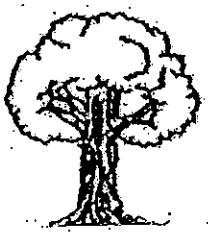
_____

41. Doris noticed that the length of a shadow in the Sun changes according to the time of the day. She sketched the shadow of her mango tree at two different times of the day.



(a) Which sketch shows the shadow of the mango tree during noon time? Explain (2m)

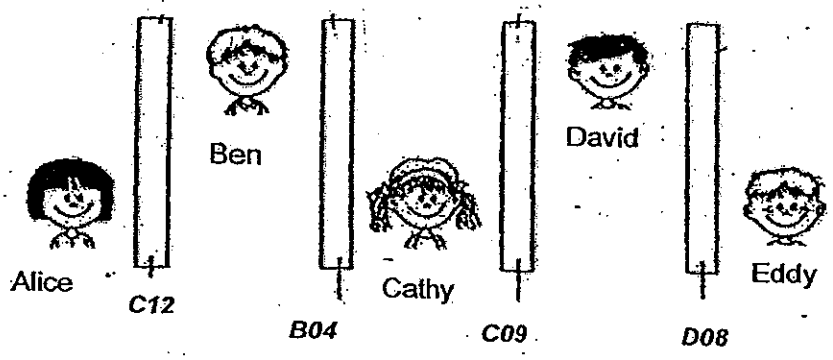
(b) Draw the shadow of the tree in the space below, with reference to the position of the sun. (1m)



42. A company has 8 types of materials. The materials are classified in the table below.

Does not allow light to pass through	Allows light to pass through
A01	A05
B03	B04
C09	C12
D08	D13

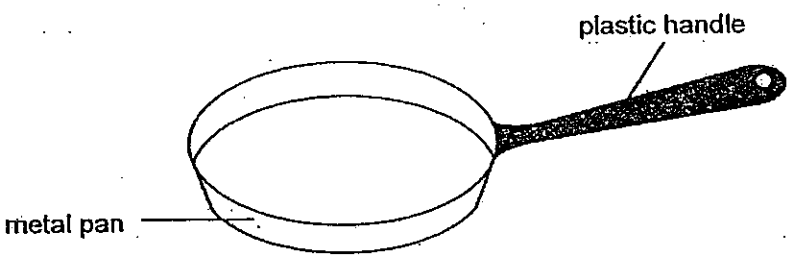
A man chose 4 materials from the table to build partition walls inside a playroom. He asked 5 children to stand behind the walls, as shown in the diagram below.



(a) Based on the diagram above, name the person(s) who is/are able to see through the wall. Explain why. (2m)

(b) Which four materials are suitable to build the walls of a changing room? Give a reason. (2m)

43. The diagram below shows a frying pan.



Read the sentences and fill in the blanks correctly. (2m)

(a) The handle is made of plastic because it is a _____ conductor of heat.

(b) The pan is made of metal because it is a _____ conductor of heat.

44. Ryan put some water in a beaker and heated it over a flame. He recorded the temperature every 5 minutes.

Time (min)	Temperature (° C)
0	30
5	35
10	43
15	51
20	65
25	78

(a) State the relationship between the time taken to heat the beaker of water and its temperature. (1m)

_____

(b) What can Ryan do in 2 steps to decrease the temperature of the water at 25th minute within a short time. (2m)

Step 1: _____

_____

Step 2: _____

_____

End of Paper

Ans

EXAM PAPER 2010

SCHOOL : ROSYTH PRIMARY
SUBJECT : PRIMARY 4 SCIENCE

TERM : SA2

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
3	**3**	**2**	**4**	**1**	**2**	**4**	**3**	**1**	**1**	**2**	**2**	**4**	**4**	**1**	**3**	**4**

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	**4**	**3**	**1**	**3**	**1**	**3**	**2**	**3**	**2**	**2**	**3**	**3**

31a) Set-up 3's lizard will be able to survive the longest. The lizard is a living thing, so it needs air food and water to live.

31b) Set-up 2 and 3.

31c) Living things die.

32a) Butterfly: S
Balsam plant: T

32b) Mushroom

32c) Mammals

33) A: Seed
B: Young plant

34a) They are all underground roots.

34b) Plant X should be a young plant as it has smaller roots while plant Y should be an adult plant as it has bigger roots.

34c) Plant Y can absorb more water and mineral salts.

35a) mouth

35b) small intestine

36a) light

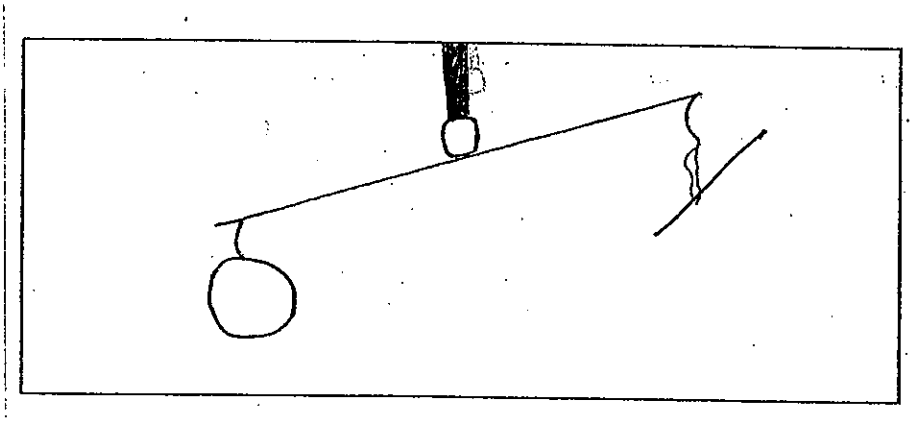
36b) wood

37a) A: Very little water entered the cup
B: The water enters the cup and fills it up completely. Air bubbles are seen coming out of the hole.

37b) There is no hole for the air to escape. Air in the cup is compressed, so only the water can enter the cup.

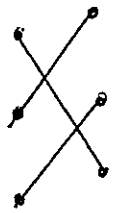
38a) Air has a definite shape.

38b)



38c) Air has mass.

39)



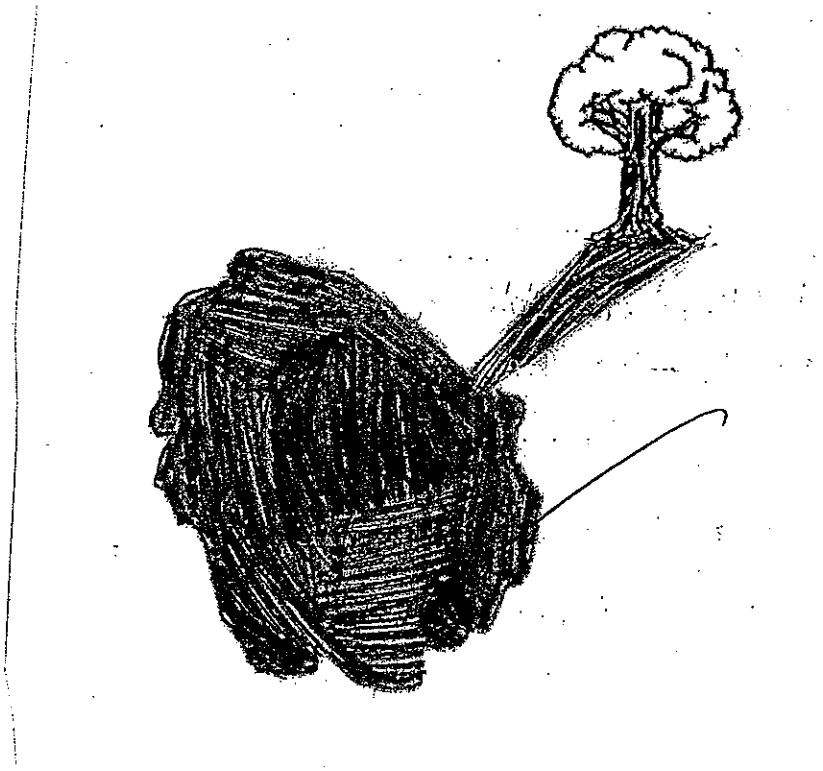
40a) The steel nail had become an electromagnet.

40b) The material of the nail.

40c) Tom could also use the stroking method.

41a) Sketch Q. The sun is above the tree and the shadow cast should be shorter.

41b)



42a) Alice, Ben and Cathy. C12 and B04 allows light to pass through.

42b) A01, B03, C09 and D08 are suitable to build the walls of a changing room. The material should not allow light to pass through, as if the person is changing, other people would be able to see.

43a) poor

43b) good

44a) The longer the beaker is put under the flame, the higher its temperature rises.

44b) Step 1: Put it in a basin of cold water.
Step 2: Put it in a refrigerator.