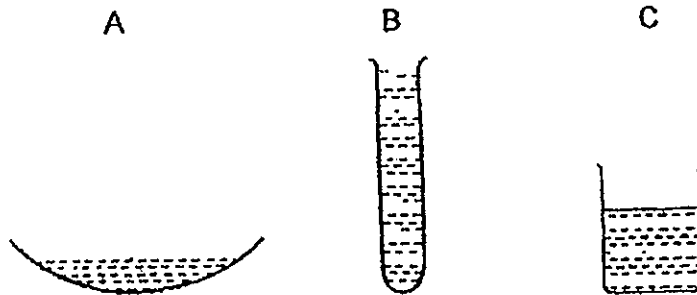


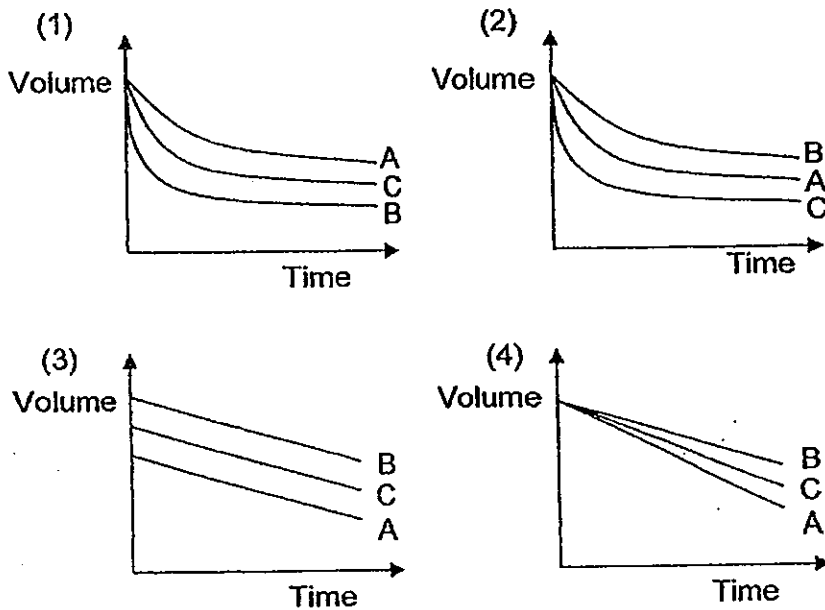
Section A: (30 x 2marks = 60marks)

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. Equal amounts of water are put into three different containers and placed side by side on a windy and sunny day



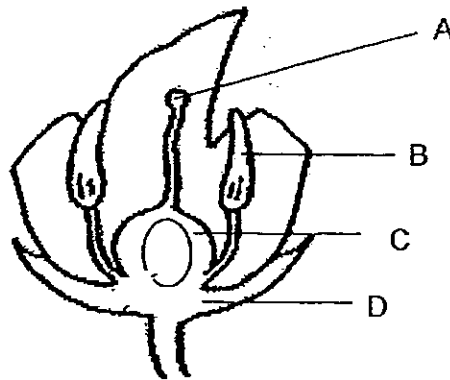
Which one of the graphs below shows the change in the volume of water in the three containers?



2. When we breathe out on a mirror, our breath forms a 'mist' on the mirror. This is because the air we breathe out is _____.

- (1) cooler than the surrounding air
- (2) drier than the air we breathe in
- (3) cleaner than the surrounding air
- (4) warmer than the surface of the mirror

3. The diagram below shows the flower of a plant.



In which parts of the flower are pollen grains and ovules produced?

	Pollen Grains	Ovules
(1)	A	C
(2)	A	D
(3)	B	C
(4)	B	D

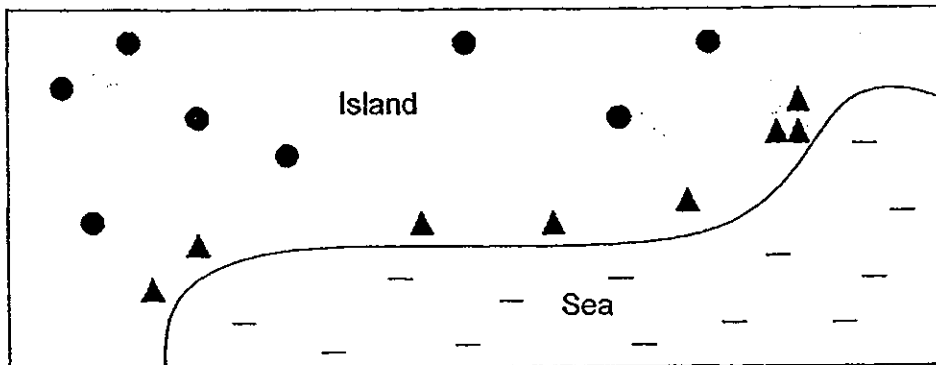
4. Which statement below describes part of the sexual reproduction process that occurs in plants?

- (1) Suckers from a plant grow into new plants.
- (2) A leaf falls to the soil, develops roots, and grows
- (3) Seeds are developed from the flower of the plant.
- (4) Underground stems from a plant grow into new plants.

5. Which sequence represents the order of development for most flowering plants?

(1)	Seed develops inside fruit	→	Seed is dispersed	→	Seed germinates	→	Plant grows
(2)	Seed is dispersed	→	Seed develops inside fruit	→	Seed germinates	→	Plant grows
(3)	Seed germinates	→	Plant grows	→	Seed is dispersed	→	Seed develops inside fruit
(4)	Seed is dispersed	→	Plant grows	→	Seed germinates	→	Seed develops inside fruit

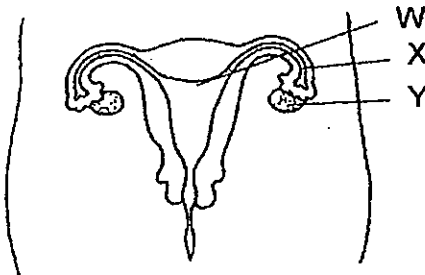
6. The diagram shows part of an island where two types of plants (●, ▲) are growing.



How are the fruits or seeds of each type of plant most likely dispersed?

	●	▲
(1)	Wind	Animal
(2)	Animal	Splitting
(3)	Wind	Water
(4)	Splitting	Water

7. The diagram below shows parts of the female human reproductive system.



Which one of the following statement(s) is/are true of the system shown above?

- A The egg travels from Y to X.
 B A fertilised egg is released from Y every month.
 C The sperm fuses with the egg at W during fertilisation.

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

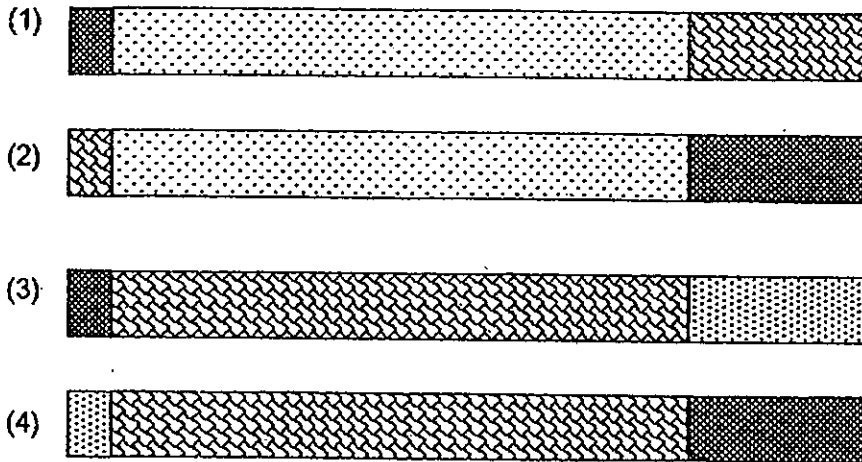
8. When do organs begin to develop in humans?

- (1) After fertilisation and before birth
 (2) Before fertilisation and after birth
 (3) In the egg cell before fertilisation
 (4) In the sperm cell after fertilisation

9. Carbon dioxide, nitrogen and oxygen are represented by the following symbols.

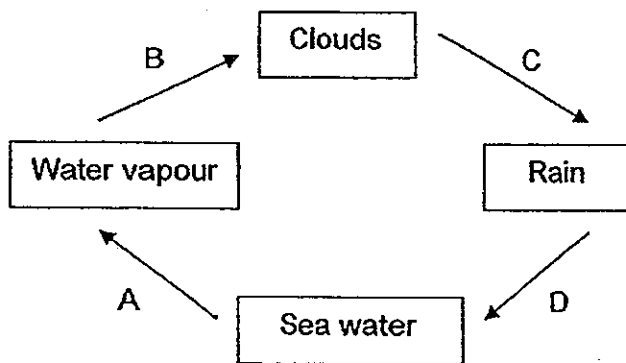


Which of the options below shows the correct composition of air in terms of the three gases?



10. The lungs and the heart are two organs in the human body. Which one of the following statements on the functions of the lungs and the heart is true?
- (1) The lungs remove carbon dioxide from the body.
 - (2) The heart removes carbon dioxide from the lungs.
 - (3) The lungs transport oxygen produced by the heart.
 - (4) The heart takes in oxygen from the surroundings directly into the body.

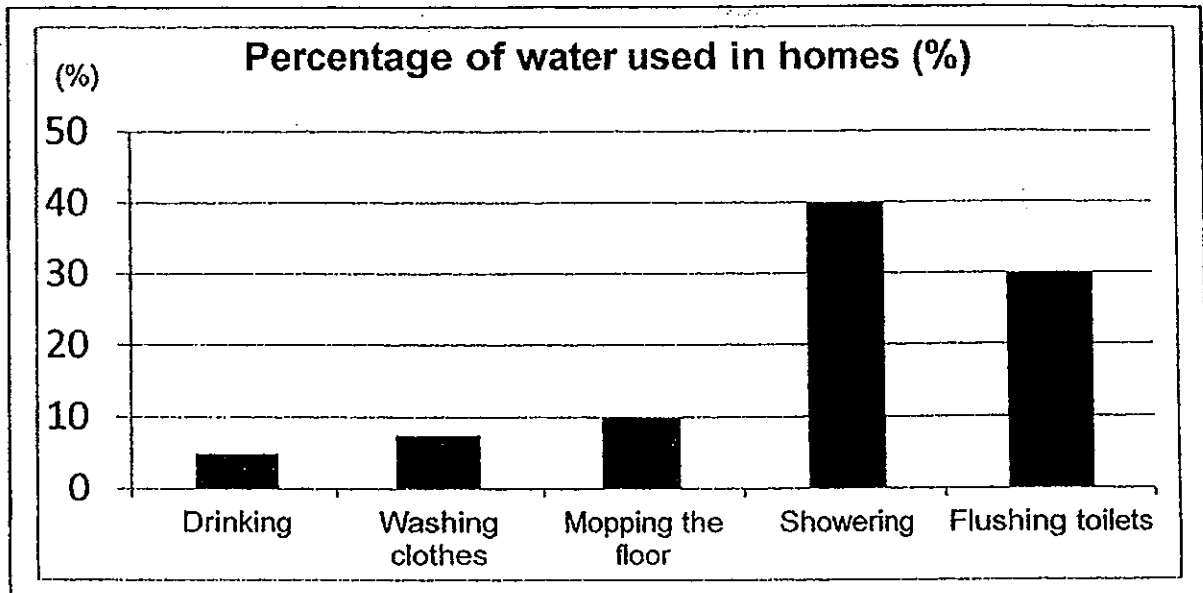
11. The diagram below shows the water cycle.



Which stages involve a change in state?

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

12. The graph below shows the purpose for which people use water in their homes. In times of low rainfall, people are asked to conserve water by using less water.



Which two actions are likely to save the most water?

	Action 1	Action 2
(1)	Halve the time in the shower	Drink less water
(2)	Halve the time in the shower	Use half flush toilets
(3)	Wash clothes in cold water	Use half flush toilets
(4)	Wash clothes in cold water	Leave the kitchen dirty

13. Which of the following statements describe reproduction in plants correctly?

- A Plants have to reproduce to ensure continuity of their species.
- B The male reproductive cells are called pollen grains.
- C The female egg cell is stored in the ovule.
- D The ovule develops into a fruit.

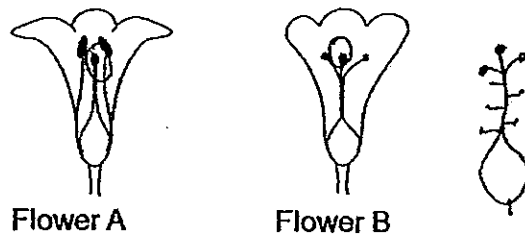
- (1) A and C only
- (2) B and D only
- (3) A, B and C only
- (4) A, C and D only

14. Which of the following statements are true about the Bird's Nest Fern?

- A It is a flowering plant that reproduces by seeds.
- B It is a non-flowering plant that reproduces by spores.
- C It is a fungus that feeds on the leaves of the tree that it stays on.
- D It is a green plant that can photosynthesize as it has chlorophyll.

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

15. The diagrams below show the cross-sections of 2 different types of flowers.



Which statement(s) about both flowers is/are true?

- A Both flowers have male and female parts.
 B Pollination can take place in both flowers.
 C Only Flower A can develop into a fruit but not Flower B.
- (1) B only
 (2) A and B only
 (3) A and C only
 (4) A, B and C

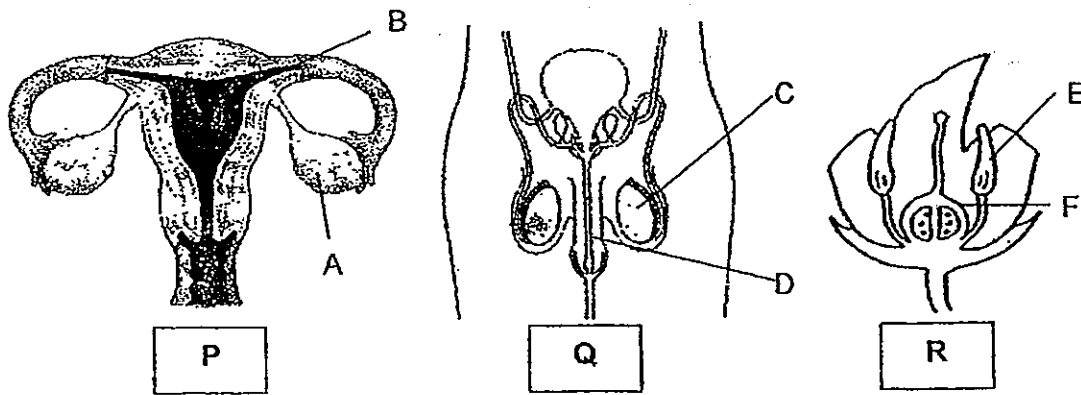
16. The diagram below shows an unborn human baby. The unborn baby is called the foetus.



Which of the following statements about the foetus are correct?

- A At this stage, it does not need any food.
 B The foetus is developed from a fertilised egg.
 C At this stage, it does not breathe through the nose.
 D The foetus stays and grows in the stomach of the mother.
- (1) B and C only
 (2) B and D only
 (3) A, B and C only
 (4) A, C and D only

The diagrams below show the reproductive organs of some organisms. Based on the diagrams below, answer Questions 17 & 18.



17. Which 2 letters, from the above reproductive organs, represent the parts that produce male reproductive cells?

- | | |
|-------------|-------------|
| (1) A and C | (2) B and D |
| (3) C and E | (4) A and F |

18. Which of the following statement(s) about the reproductive organs of P, Q and R is/are **incorrect**?

- A Fertilisation can take place within R itself.
- B R contains both the male and female sex cells.
- C The reproductive organs of P and Q produce different types of sex cells.
- D The reproductive organs of P and Q produce both male and female sex cells.

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

19. The table below matches the function to the organs found in a human body system.

	Organ	Function
A	Nose	Moistens and filters air
B	Lungs	Gaseous exchange
C	Diaphragm	Muscle that controls air intake

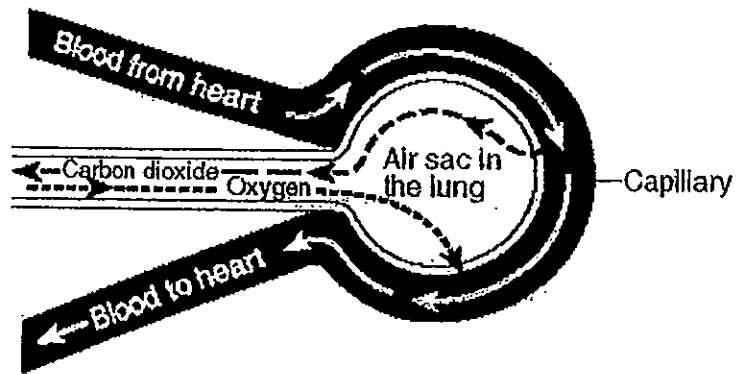
Which pairs are correctly matched?

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

20. Which one of the following shows the correct path taken by the blood in the human body?

- (1) Body parts → lungs → heart → body parts
- (2) Body parts → heart → lungs → body parts
- (3) Body parts → lungs → heart → lungs → body parts
- (4) Body parts → heart → lungs → heart → body parts

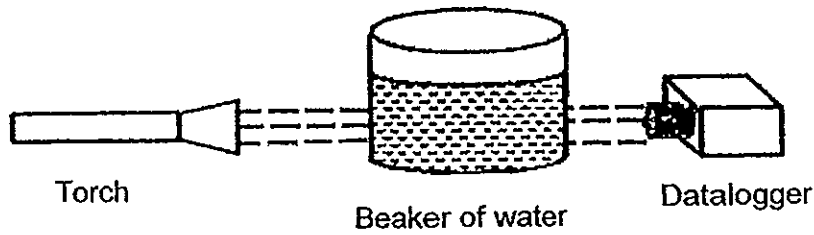
21. The diagram below represents a magnified view of an air sac in the human being. The white arrows indicate blood flow.



Which two body systems are interacting in the above diagram?

- (1) skeletal and muscular
- (2) nervous and respiratory
- (3) reproductive and digestive
- (4) respiratory and circulatory

22. Jerry collected three beakers of water from different sources. He shone a torch at each beaker of water and recorded the amount of light passing through the beaker of water as detected by a datalogger as shown below.



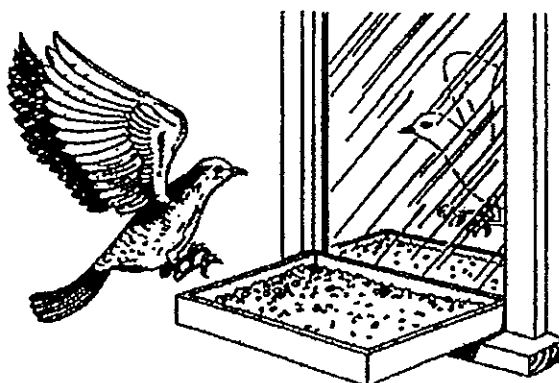
The results are shown below.

Beaker	Amount of light detected by datalogger (lux)
A	60
B	1000
C	300

Which of the following shows the most likely source of the three beakers of water?

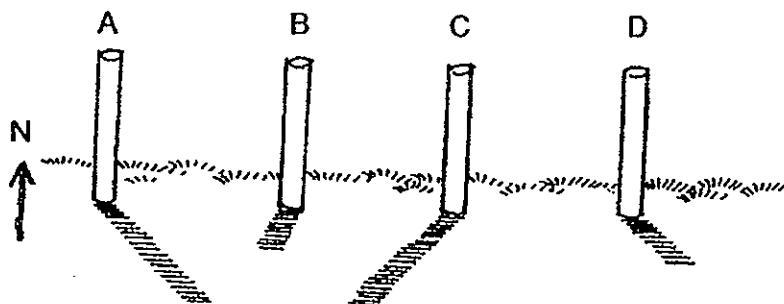
	A	B	C
(1)	Pond	Muddy stream	Reservoir
(2)	Reservoir	Pond	Muddy stream
(3)	Muddy stream	Reservoir	Pond
(4)	Pond	Reservoir	Muddy stream

23. The picture below shows a bird landing at a bird feeder outside a window. The bird can see its own reflection in the presence of light.



Which one of the following correctly shows the path of light that makes it possible for the bird to see its reflection?

- (1) From sun to window to bird
 - (2) From bird to sun to window
 - (3) From bird to sun to window to bird
 - (4) From sun to bird to window to bird
24. The diagram below shows the shadow of the same vertical pole at different times of the day.



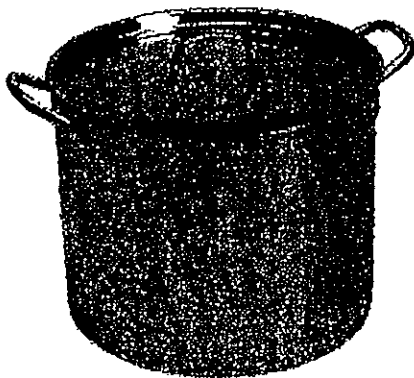
Which of the following shows the correct shadow for the different times?

	7 a.m	11 a.m	3 p.m	5 p.m
(1)	A	D	B	C
(2)	A	B	D	C
(3)	C	B	D	A
(4)	C	B	A	D

25. A wet shirt is put on a clothesline to dry on a sunny day. The shirt dries because _____.

- (1) the shirt gains heat and evaporates
- (2) the shirt loses heat and condenses
- (3) the water in the shirt loses heat and condenses
- (4) the water in the shirt gains heat and evaporates

26. Two pots, X and Y, of the same size, shape and thickness, contained 800 ml and 300 ml of water respectively. The materials of the pots are different. Both were heated over two separate flames till the water in them boiled.



Pot X
(800 ml of water)



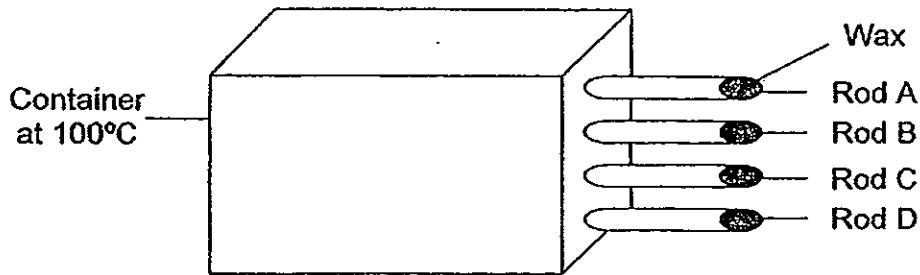
Pot Y
(300 ml of water)

If the water in both pots took 10 minutes each to reach boiling point, what possible conclusions can be made?

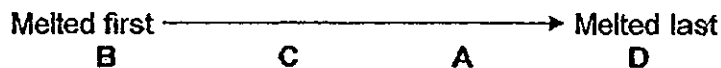
- A The material of Pot X is a better conductor of heat than Pot Y.
- B The water in Pot X is colder than that in Pot Y.
- C The flame used for Pot Y was weaker than that used for Pot X.

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

27. In the diagram below, Rods A, B, C and D are of the same length but are made of different materials. They are attached to a container which was heated to 100°C. At the tip of each rod is a piece of candle wax.



The pieces of candle wax melted in the following order.



Which rod provides the best material for making the handle of a kettle?

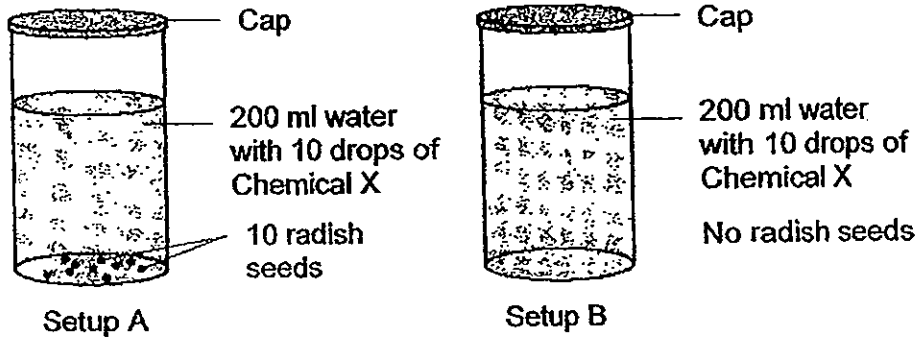
- (1) A (2) B
 (3) C (4) D
28. Below are observations made of four objects.

Object	observations
A	Is able to cast a faint shadow when light is shone on it.
B	Is able to complete the electrical circuit to light up a bulb.
C	Is attracted to magnets.
D	Is able to keep hot soup warm for a longer time.

Which of the following can represent Objects A, B, C and D?

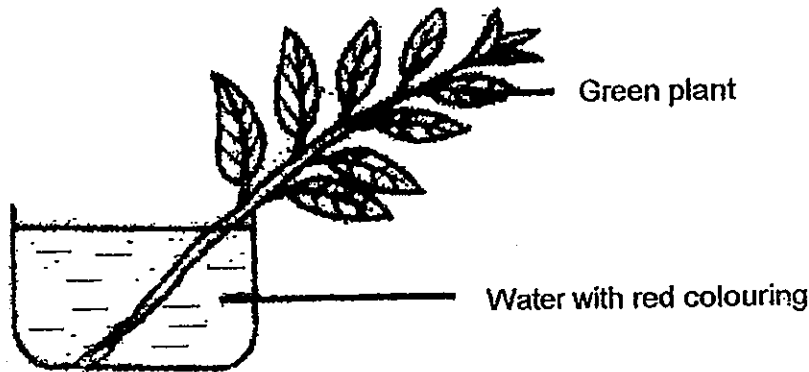
	A	B	C	D
(1)	Tracing Paper	Steel paper clip	Copper nail	Aluminium pot
(2)	Clear plastic sheet	Iron nail	Steel paper clip	Aluminium pot
(3)	Cardboard	Steel paper clip	Iron nail	Clay pot
(4)	Tracing Paper	Copper nail	Steel paper clip	Clay pot

29. A student set up the experiment shown below to determine if radish seeds take in oxygen as they germinate. Chemical X turns blue when oxygen is present in the water, but is colourless when oxygen is not present in the water. Setups A and B each contained 200 ml of water and 10 drops of Chemical X. Ten radish seeds were added to Setup A. Setup B had no radish seeds.



What is the purpose of Setup B in this experiment?

- (1) To be used as the control setup.
 - (2) To be used as the experimental setup
 - (3) To show that seeds do not give off oxygen.
 - (4) To show that seeds do not give off carbon dioxide.
- 30.



Kenny carried out an experiment as shown above. On the following day, the stem is cut across with a knife. The cross-section of the stem appears reddish. The leaves also appear red. This shows that _____.

- A the leaves make food
 - B the stem carries water through it
 - C the leaves carry water to all parts of the plant
- (1) B only
 - (2) C only
 - (3) A and B only
 - (4) A and C only



NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 1 – 2013
PRIMARY 5

SCIENCE
BOOKLET B

14 Open-ended questions (40 marks)

Total Time for Booklets A and B : 1 hour 45 minutes

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the space provided.
2. Do not turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write your answers in this booklet.

Marks Obtained

Section B

	140
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Name: _____ () Class: P 5 _____

Date : 14 May 2013

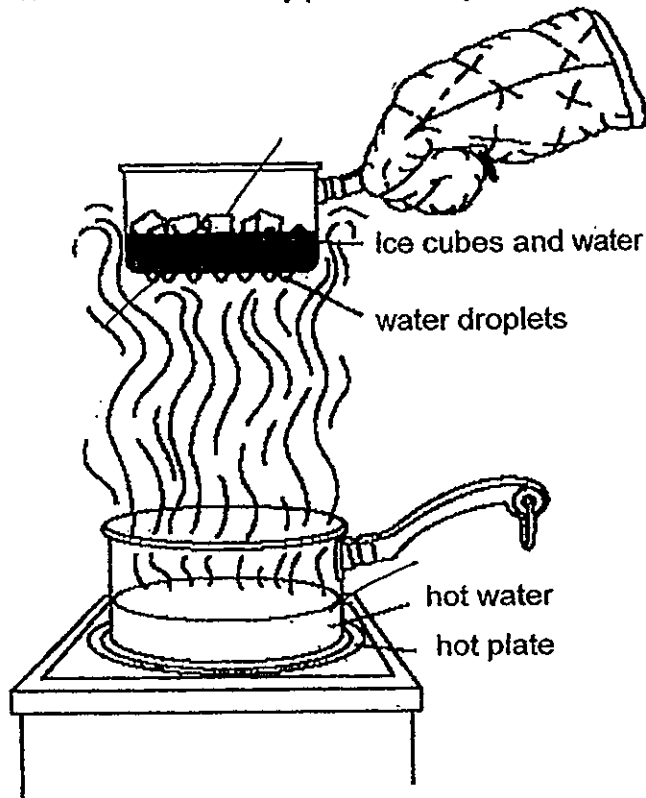
Parent's Signature: _____

Section B: (40marks)

Write your answers to question 31 to 44 in the spaces provided.

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

31. The diagram below shows an activity performed by a student in a classroom.

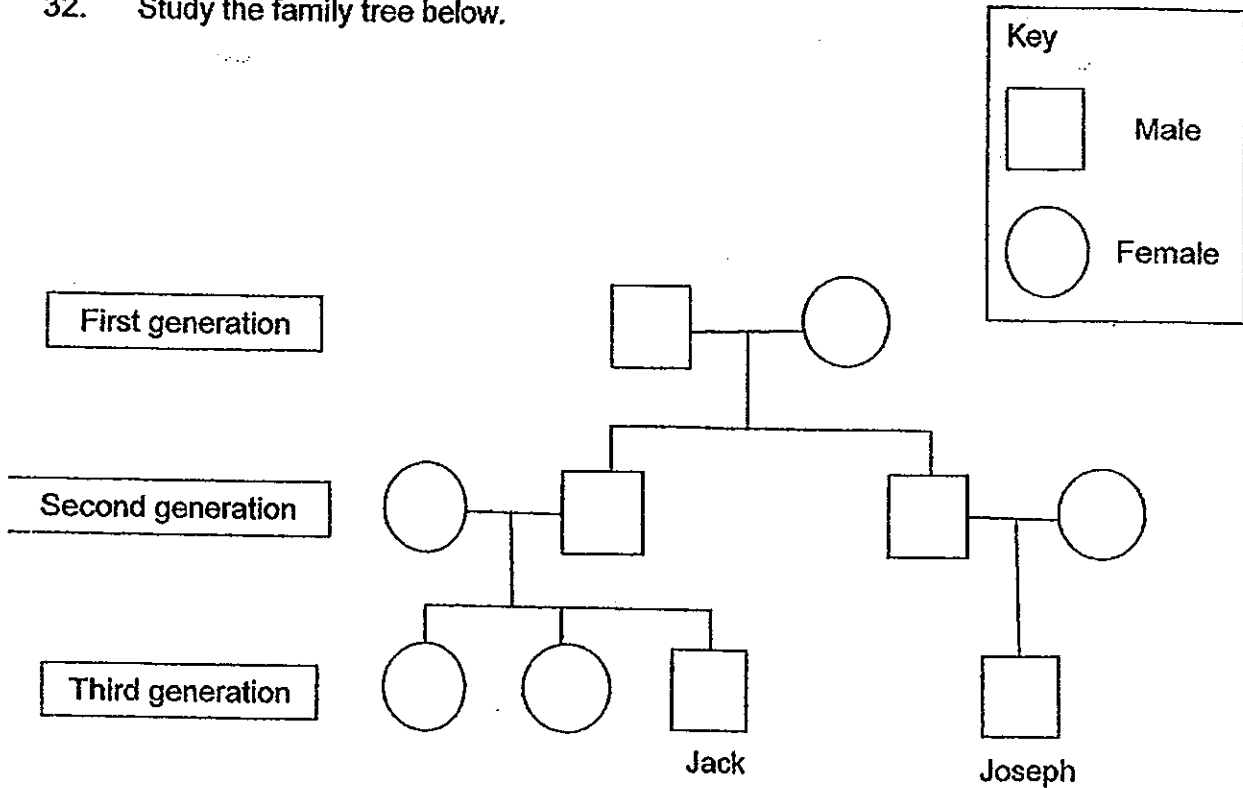


(a) Name three processes that are occurring in the above activity. [1]

(b) Explain clearly why there are water droplets on the underside of the pan? [2]

Score	3
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32. Study the family tree below.



(a) How is Jack related to Joseph?

[1]

(b) Tongue-rolling is one of the characteristics that is passed from parents to offsprings. It is observed that if only 1 parent could roll his or her tongue, all their children could roll their tongues.

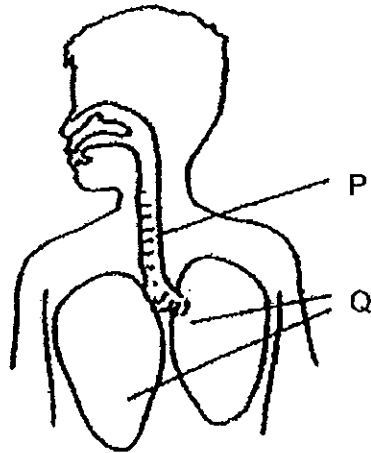
In the first and second generation of the above family tree, there are a total of two males who could roll their tongues.

What is the **minimum** number of females in the family tree who can roll their tongues?

[1]

Score	2
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33. The diagram below shows one of the important systems in the human body.



(a) Name parts P and Q in the diagram above. [1]

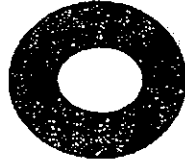
P : _____ Q : _____

(b) Which human body system does the above diagram represent? [1]

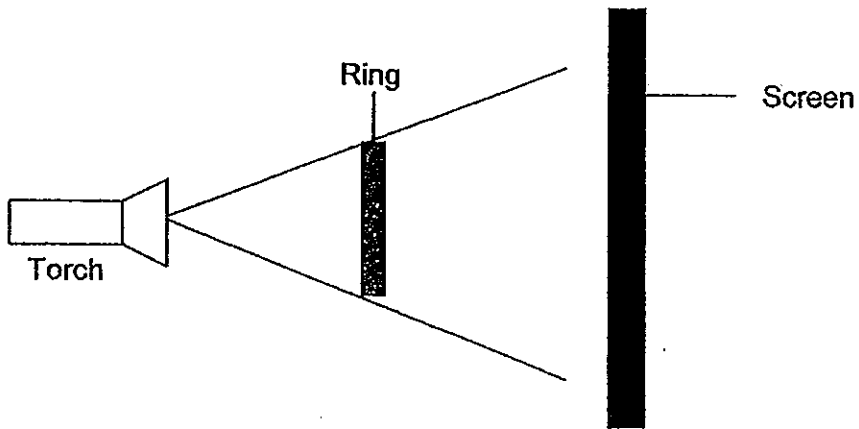
(c) Name the part of the skeletal system that protects part Q. [1]

Score	3
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34. Alice shone a torch on the metal ring shown below.

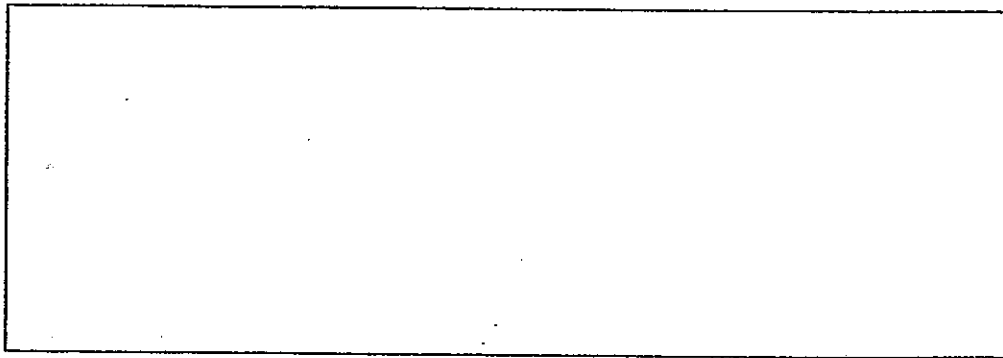


Its shadow is formed on the screen.



(a) Draw the shadow formed on the screen in the box below.

[1]

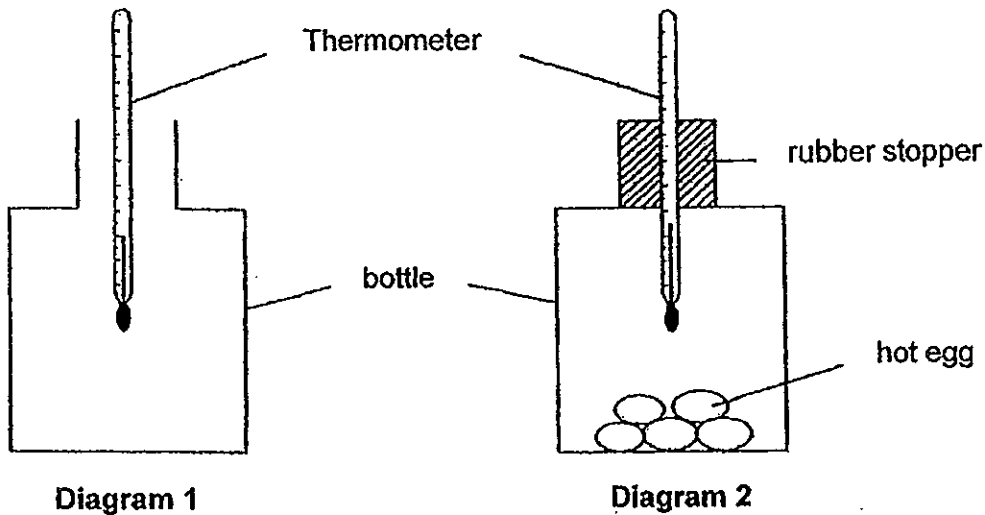


(b) State two actions that Alice can take to increase the size of the shadow.

[2]

Score	3
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35. Hector carried out an experiment to learn more about heat and temperature. He first recorded the temperature of the air in a bottle as shown in Diagram 1. Then he placed several hot eggs in the bottle and sealed the bottle with a rubber stopper so that it was air-tight. After 5 minutes, he recorded the temperature of air in the bottle as shown in Diagram 2.



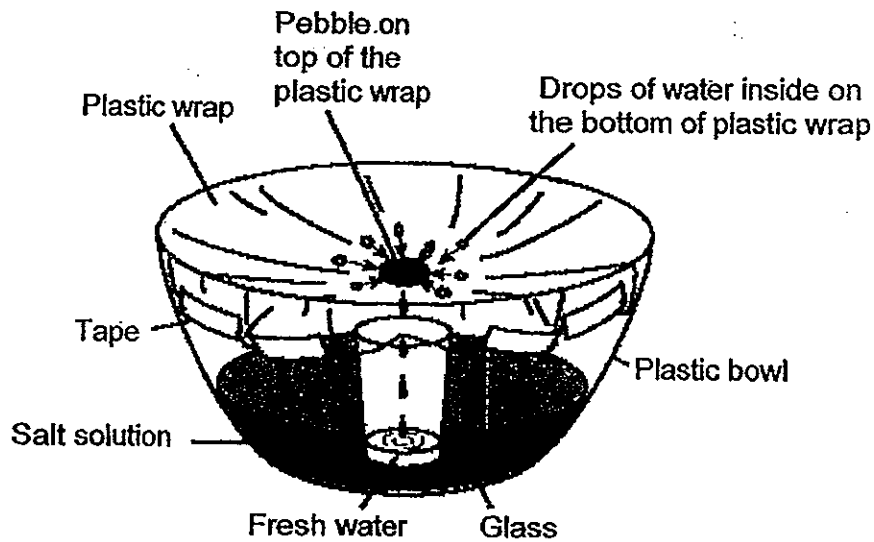
His results are shown in the table below.

Temperature of air in the bottle	
Diagram 1	Diagram 2
28°C	36 °C

- (a) Explain why there is an increase in the temperature of the air in Diagram 2. [1]

- (b) A refrigerator uses electricity to keep the temperature of the air inside at 10°C. Hector has the habit of putting his hot milo in the refrigerator. His mother advises him to let the hot milo cool before putting it in the refrigerator, otherwise it will increase the household electricity bill. Explain how this will help the family to save electricity. [2]

36. Mabel wanted to set up a model of the water cycle. She dissolved 5g of salt in 50ml of water and put the salt solution in the setup below.

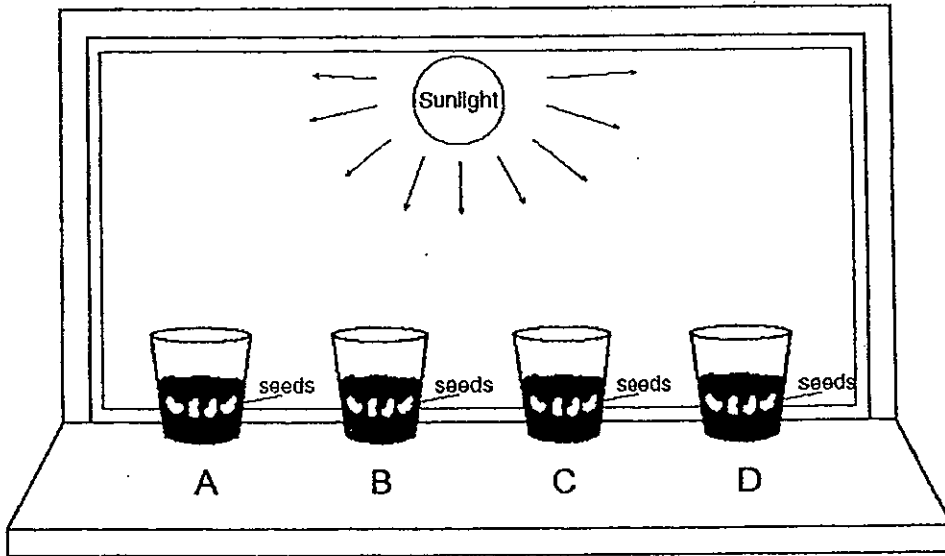


- (a) Explain why the level of the salt solution will decrease slightly if the model is left in a sunny location for several days? [1]

- (b) What is the purpose of the plastic wrap? [1]

- (c) Explain why the mass of salt in the salt solution will remain as 5g after several days. [1]

37. Jenny set up the experiment below to learn about plant growth. She added a different amount of water to four identical containers, each containing four seeds in 100 cm³ of soil as shown in the table below. All the four containers were placed in the same sunny location.



	A	B	C	D
Water (ml)	0	10	20	40
Soil (cm ³)	100	100	100	100

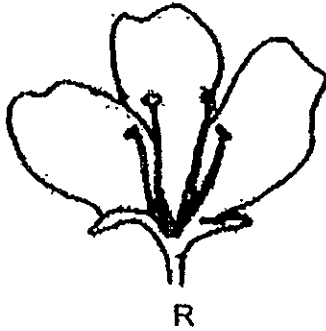
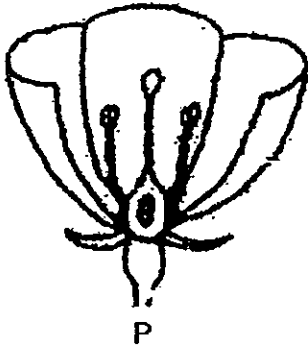
- (a) What is the aim of Jenny's experiment? [1]

- (b) Identify two variables that are being held constant in her experiment. [1]

- (c) Explain clearly why these variables need to be held constant in her experiment. [2]

Score	4
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38. Look at the diagrams below.

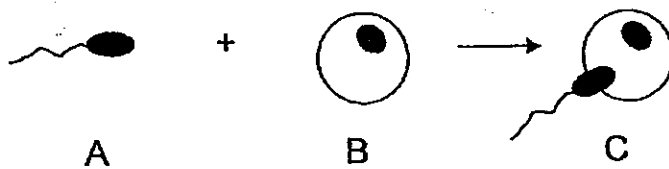


(a) Which of the flower(s) shown above can never develop into a fruit? [1]

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

Score	2
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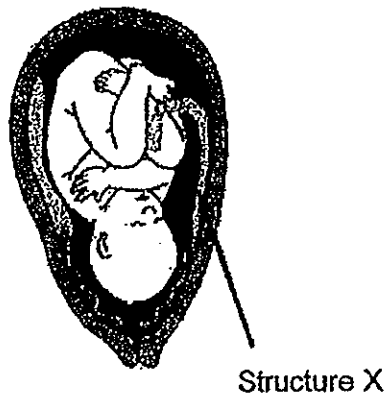
39a. The diagram below shows a model of sexual reproduction in humans.



(i) Which letter in the diagram represents a female sex cell? [1/2]

(ii) What is the process occurring at C? [1/2]

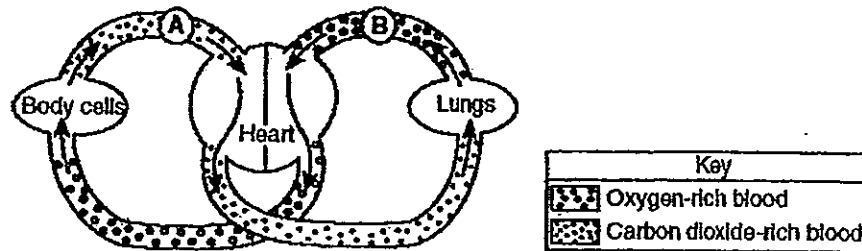
39b. The diagram below shows a developing human baby.



(i) Identify Structure X and state its function. [1]

Score	2
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40. The diagram below represents a human organ system. The arrows show the directions of blood flow. Letters A and B represent locations in this system.



(Not drawn to scale)

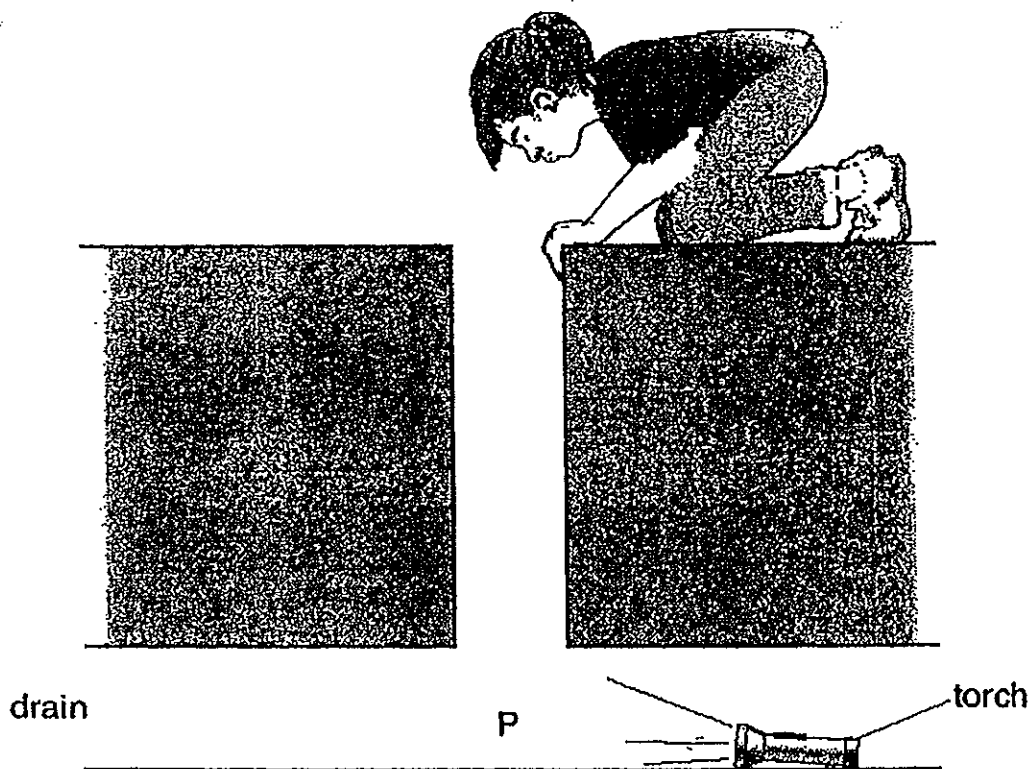
- (a) Identify the human organ system for the movement of blood shown in the diagram.

_____ system [1]

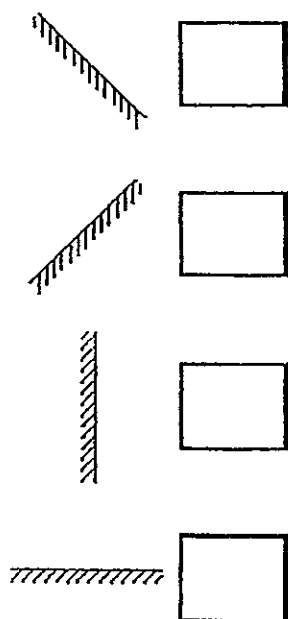
- (b) Explain clearly why blood at location B contains more oxygen than blood at location A. [2]

Score	3
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41. Samantha dropped her torch in a drain. The torch was still switched on but Samantha could not see it.

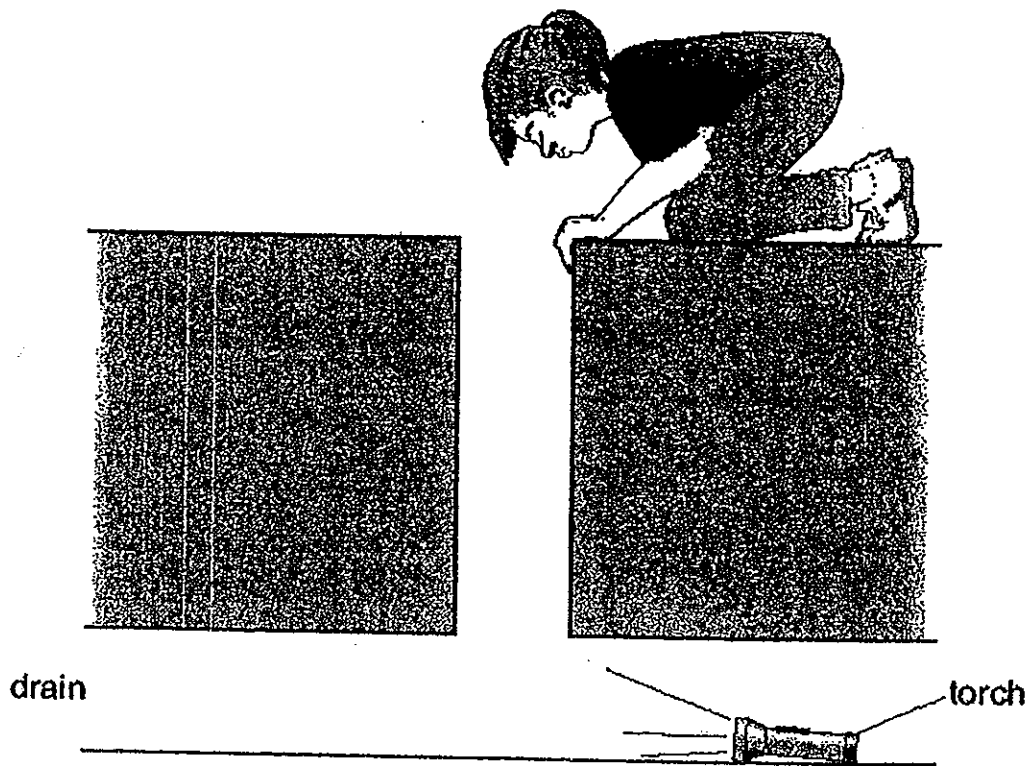


- (a) Samantha lowered a mirror into the drain and placed it at position P. At which angle should Samantha put the mirror to see the torch? Tick the correct box. [1]



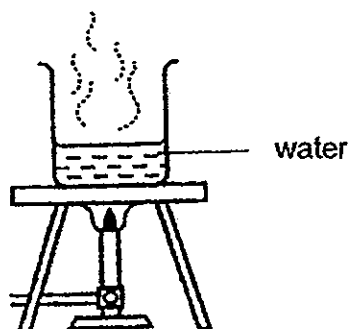
(b) What happens to the light from the torch when it hits the mirror? [1]

(c) Draw the mirror of your choice in (a) in the diagram below. Then draw arrows to show how Samantha can see the torch. [1]



Score	3
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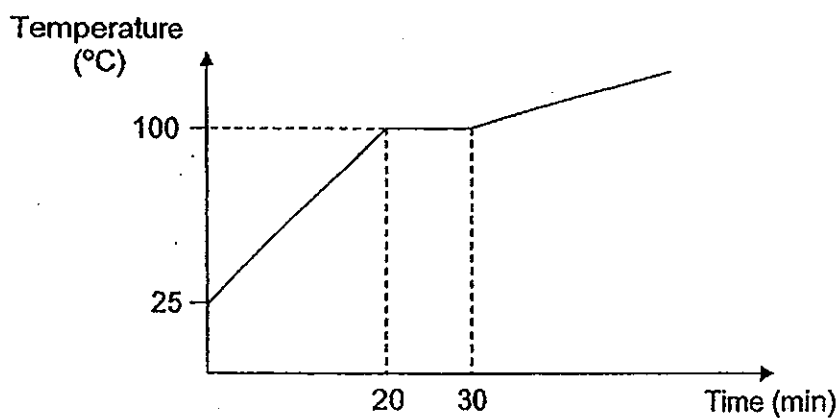
42. Michael set up an experiment as shown in the diagram below.



He noted that the mass of the beaker was 100g. He added 100g of water at 25°C and started heating. After every 10 minutes, he lifted the beaker and weighed it. At the same time, he placed a thermometer in the beaker to measure the temperature. He then quickly returned the beaker to the flame to continue heating. He recorded his results in a table as shown below.

Time (min)	Temperature (°C)	Total mass of beaker and water (g)
0	25	200
10	71	183
20	100	165
30	100	126
40	107	100
50	118	100

He drew a graph as shown below to help him understand the results he obtained.



- (a) Why did the total mass of beaker and water decrease during the first 10 minutes of the experiment? [1]

(b) What was happening to the water in the beaker at the 20th minute? [1]

(c) Why did the total mass of beaker and water remain at 100g after 40 minutes? [1]

Score	3
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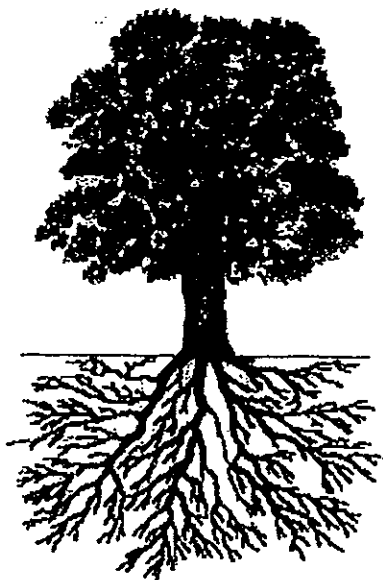
43. Ellen clears her drawer and finds some objects made from different types of materials. She lists down some properties of each object into a table shown below.

Properties	Objects							
	A bottle cork	A pencil lead	A glass marble	A bar magnet	A plastic ruler	A rubber band	A styrofoam ball	A wooden toothpick
Is flexible						✓	✓	✓
Is waterproof		✓	✓	✓	✓	✓	✓	
Floats on water	✓			✓			✓	✓
Comes from living things	✓	✓				✓		✓

However, she puts four ticks in the wrong boxes. Circle the wrong ticks in the table above. [2]

Score	2
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44. The diagram below shows a tree.

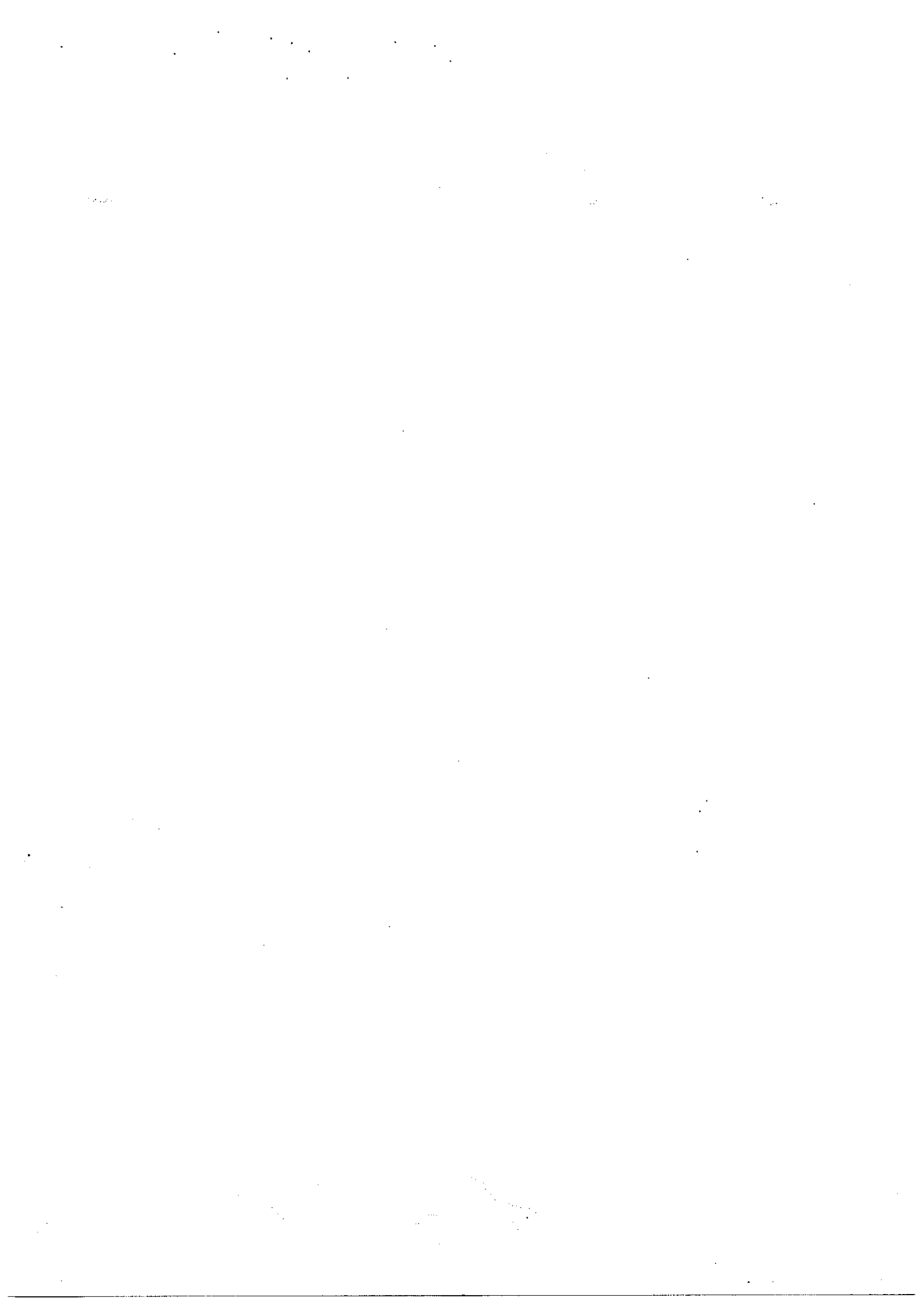


(a) The tree takes in water and oxygen from the soil. Name one other type of substance the tree needs to take in from the soil. [1]

(b) The roots of the tree above are long and split into many smaller roots. How does this help the tree to absorb water? [2]

(c) When the weather turns cold, the tree will shed most of its leaves. Explain why the tree grows slower during this period. [1]

Score	4
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ANSWER SHEET

EXAM PAPER 2013

SCHOOL : NAN HUA

SUBJECT : PRIMARY 5 SCIENCE

TERM : SA1

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

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

31)a)Evaporation, Condensation and melting.

b)The hot water evaporated and the warm water vapour condensed on the cooler underside of the pan to form water droplets.

32)a)Jack is Joseph's cousin.

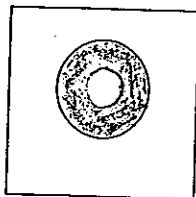
b)The minimum number is three.

33)a)P: Windpipe Q: Lungs

b)Respiratory system.

c)The ribcage.

34)a)



Screen

b)1)Move the ring nearer to the torch.

2)Move the screen further away from the ring.

35)a)The air in the bottle in Diagram 2 gains heat from the hot eggs and thus there is an increase in the temperature of the air in Diagram 2.

b)The cooler milo will not cause the air inside the refrigerator to gain as much that heat, hence less electricity is was to therefore helping the family to save electricity.

36)a)The water from the salt solution had evaporated.

b)To allow water vapour to condense on the cooler inner surface of the plastic wrap.

c)The salt did not evaporate, so it's mass will remain the same.

37)a)The aim is to find out whether the amount of water used affects the growth of the seeds.

b)The area where the seeds were placed and the type of soil.

c)It is to ensure a fair test. The variable that should be changer in this experiment is the amount of water. Changing the amount of soil will affect the results of the experiment.

38)a)Flower R.

b)There is no pistil so no pollen grains can land on that flower. Fertilisation will not occur and therefore it cannot become a fruit.

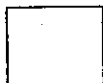
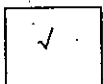
39)a)i)Letter B ii)Fertilisation

b)i)It is the umbilical cord. It transports food, water nutrients and oxygen to the baby. When the baby produces waste and carbon dioxide, it gets through the umbilical cord and to the mother's body and the mother will release it.

40)a)Circulatory

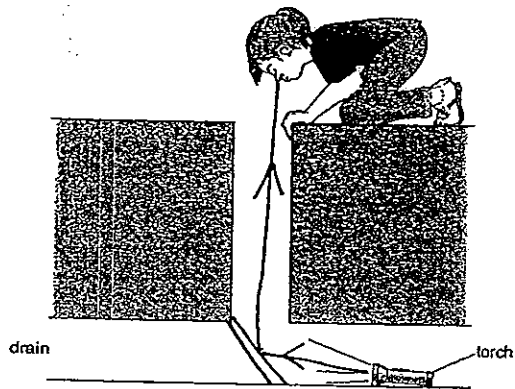
b)The blood at Location B has picked up absorbed oxygen in the lungs while the oxygen in the blood at location A has been used.

41)a)



b)It gets reflected.

41)c)



42)a)The water had gained heat and evaporated.

b)The water was boiling.

c)The water in the beaker boiled. All the water changed into water vapour at 100°C.Only the beaker which is 100g is left.

43)

Properties	Objects							
	A bottle cork	A pencil lead	A glass marble	A bar magnet	A plastic ruler	A rubber band	A styrofoam ball	A wooden toothpick
Is flexible						✓	✓	✓
Is waterproof		✓	✓	✓	✓	✓	✓	
Floats on water	✓			✓			✓	✓
Comes from living things	✓	✓				✓		✓

44)a)Nutrients.

b)There will be more roots in contact with the soil and hence able to absorb more water.

c)There are fewer leaves to make food.

