



**NAN HUA PRIMARY SCHOOL**  
**SEMESTRAL ASSESSMENT 1 – 2015**  
**PRIMARY 4**

**SCIENCE**

**BOOKLET A**

**30 Multiple Choice Questions (60 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. Shade your answers in the Optical Answer Sheet (OAS) provided.

**Marks Obtained**

<b>Booklet A</b>		<b>/ 60</b>
<b>Booklet B</b>		<b>/ 40</b>
<b>Total</b>		<b>/100</b>

**Name:** \_\_\_\_\_ (      ) **Class: P 4** \_\_\_\_\_

**Date : 13 May 2015**

**Parent's Signature:** \_\_\_\_\_

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**Section A: (30 x 2 marks = 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. Which of the following is/are source(s) of light?

- A Candle
- B Torch
- C Mirror

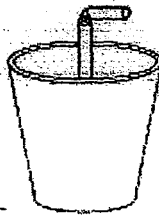
- (1) B only
- (2) A and B only
- (3) B and C only
- (4) A, B and C only

2. Daniel can see the soccer ball on the field because \_\_\_\_\_.



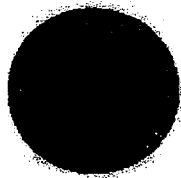
- (1) the ball gives off light
- (2) light from his eyes reaches the ball.
- (3) the sun lights up the ball and makes it bright
- (4) the ball reflects light from the sun into his eyes

3. Look at the object below.

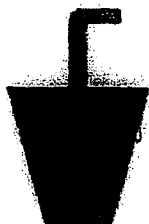


This object is placed between a lighted torch and screen in different positions. Which of the following cannot be a shadow of the object?

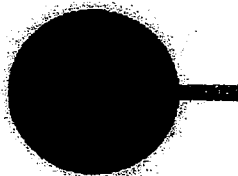
(1)



(2)



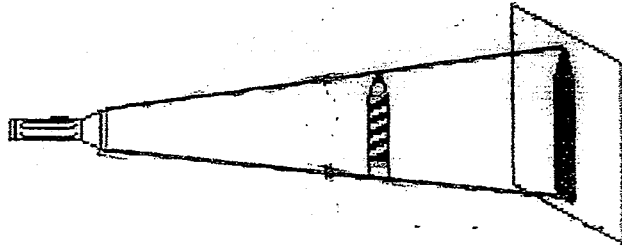
(3)



(4)



4. The diagram below shows the shadow of a pencil on a screen.



Which of the following will decrease the size of the shadow?

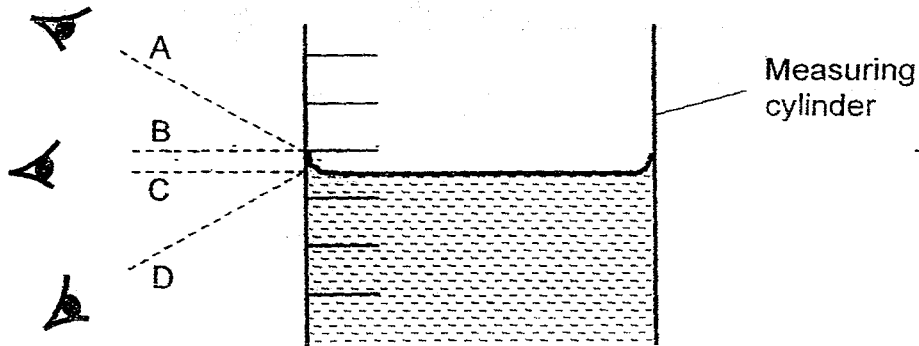
- (1) Moving the screen further from torch.
- (2) Moving the torch closer to the pencil.
- (3) Moving the pencil closer to the torch.
- (4) Moving the screen closer to the pencil.

5. Which of the following can be classified as matter?

- A: Snow.
- B: Smoke.
- C: Oxygen
- D: Sunlight

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

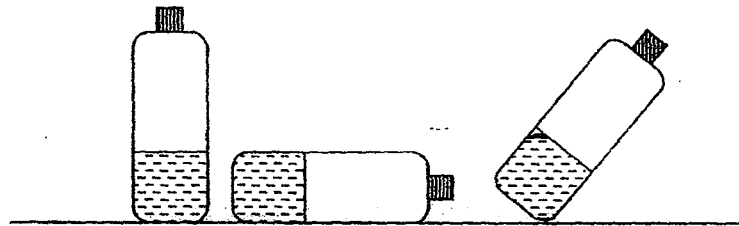
6. The diagram below shows an enlarged section of a measuring cylinder containing some water.



Which position, A, B, C and D, correctly shows how the water level should be read?

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

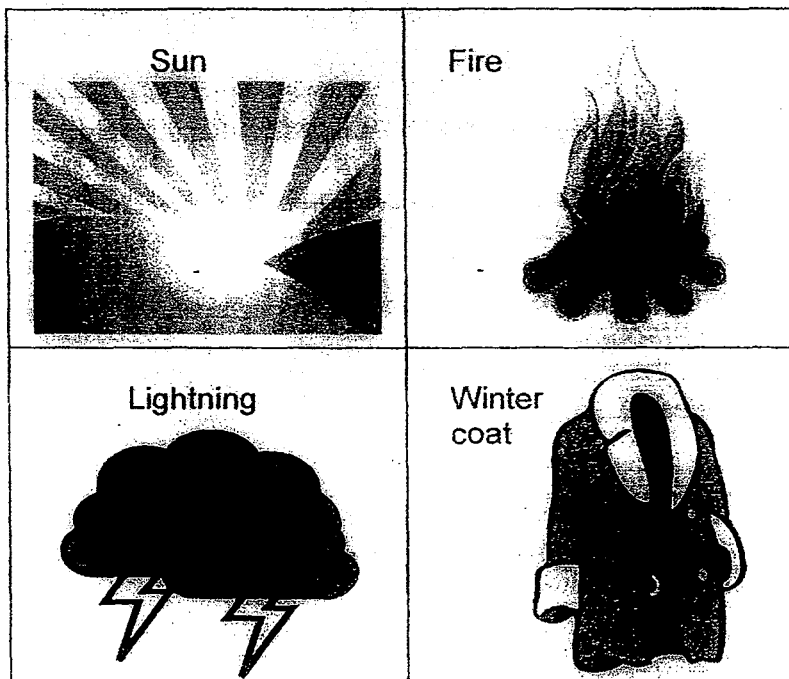
7. A bottle containing a substance was placed in various positions as shown below.



What does this experiment show about the substance?

- (1) It is a liquid as it has a fixed volume.
- (2) It is a solid as it has a fixed shape.
- (3) It is a solid as it has a fixed volume.
- (4) It is a liquid as it has a fixed shape

8. Study the diagram below carefully.



Which of the above are sources of heat?

- (1) Sun
  - (2) Sun and fire
  - (3) Sun, fire and lightning
  - (4) Sun, fire and winter coat
9. After making a cup of hot coffee, Jane realised that it was too hot to drink. A few ice cubes were added and the temperature of the hot coffee immediately dropped such that Jane could start drinking it.

What happened to the coffee that allowed Jane to be able to drink it so quickly?

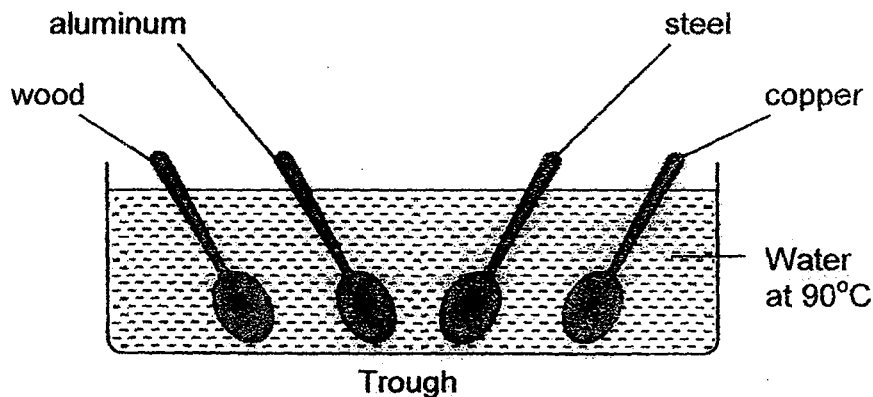
- (1) The coffee lost heat to the ice cubes.
- (2) The coffee gained heat from the ice cubes.
- (3) The coffee gained heat from the surroundings.
- (4) The ice cubes passed its coldness to the coffee.

10. Janet went to a carnival at the Singapore Botanical Gardens in a hot afternoon and brought a balloon home. In the air-conditioned room, she noticed that her balloon became smaller.

What is a possible explanation for what happened to the balloon?

- (1) The balloon expanded and the gas in the balloon contracted.
- (2) The balloon gained heat and contracted in the cool air of the air-conditioned room.
- (3) The gas in the balloon expanded less in the cool air of the air-conditioned room.
- (4) The gas in the balloon lost heat to the cool air in the air-conditioned room and contracted.

11. Four spoons of different materials are placed in a trough of hot water at  $90^{\circ}\text{C}$  as shown in the diagram below.

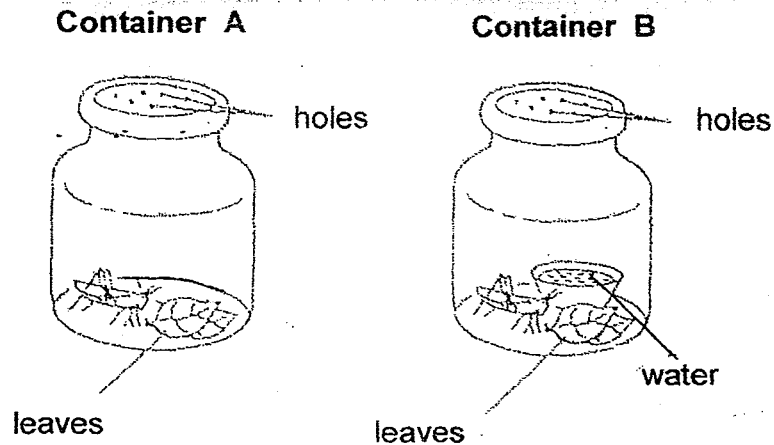


Which spoon can you pick up without burning your bare hands?

- (1) steel spoon
- (2) copper spoon
- (3) wooden spoon
- (4) aluminum spoon



12. Serena placed two grasshoppers in two identical containers as shown below. She then covered the 2 containers with a plastic cover and poked holes on each of the plastic cover.



The two containers were placed inside a wooden cupboard. After one day, the grasshopper in Container A died but the grasshopper in Container B was still alive.

This experiment shows that \_\_\_\_\_ to stay alive.

- (1) living things need air
- (2) living things need food
- (3) living things need water
- (4) living things need sunlight

13. Which of the following statements are true about fungi?

- A: They are edible.
- B: They reproduce from spores.
- C: They grow only on rotting logs.
- D: They feed on living or dead plant and animals.

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

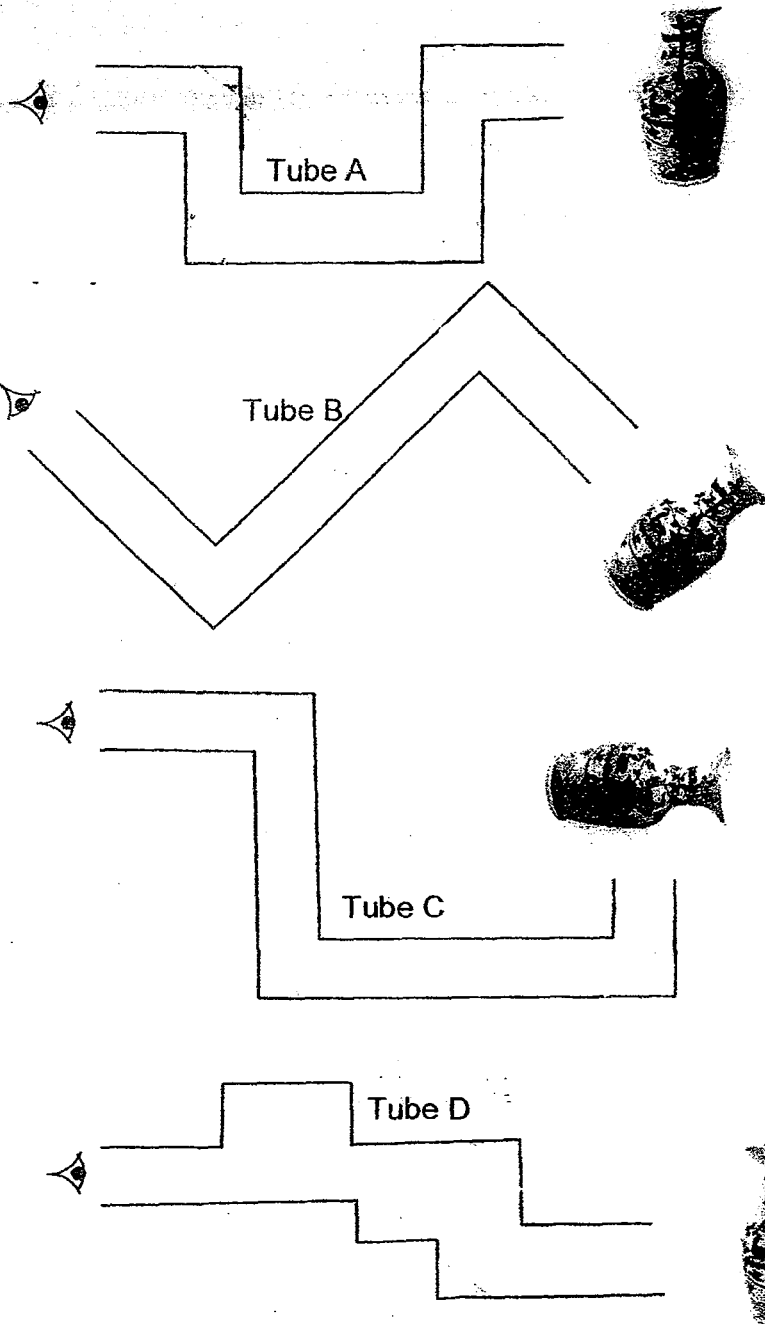
14. Alice had two types of materials, P and Q, each of the same size. She wanted to find out which material would absorb the most amount of water. The table below shows the set-ups she had done.

Set-up	Material	Amount of water added to material
A	Q	100ml
B	P	50ml
C	Q	30ml
D	P	100ml

Which two set-ups should Alice choose in order for her test to be a fair one?

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

15. Shawn was given 4 tubes, Tube A, Tube B, Tube C and Tube D, made of the same type of opaque plastic.



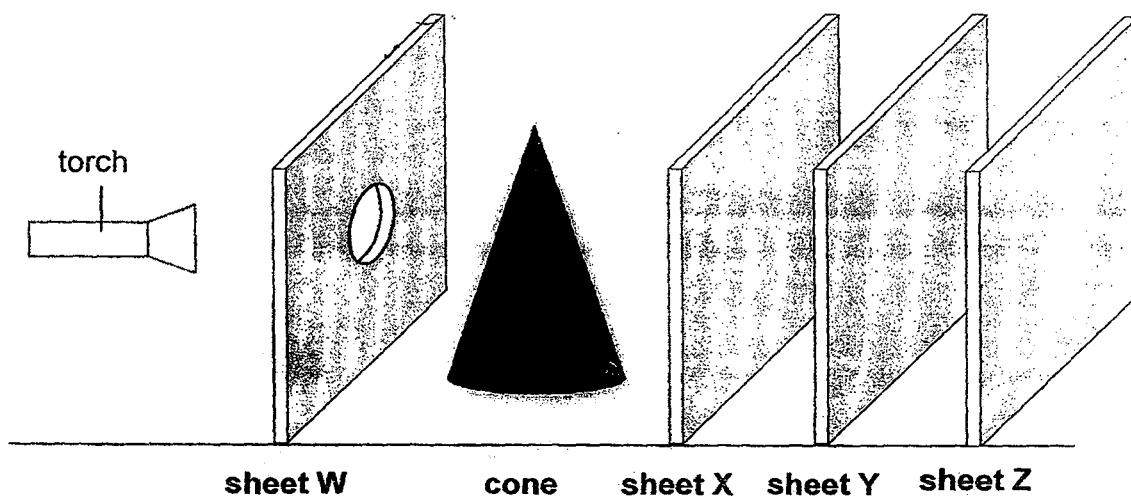
Shawn's task was to fix mirrors in the tube such that he will be able to see the vase when he looked through the tube as shown in the diagrams above.

If Shawn was given only 3 mirrors to work with each tube, which tube(s) do you think Shawn will look through and be able to see the vase?  
(Not all 3 mirrors need to be used)

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

16. Sarah set up an experiment in a dark room, using a torch, a cone and four sheets W, X, Y and Z. She arranged the items as shown in the diagram below. She cut a hole in sheet W only. The property of the four sheets of materials is shown in the table below.

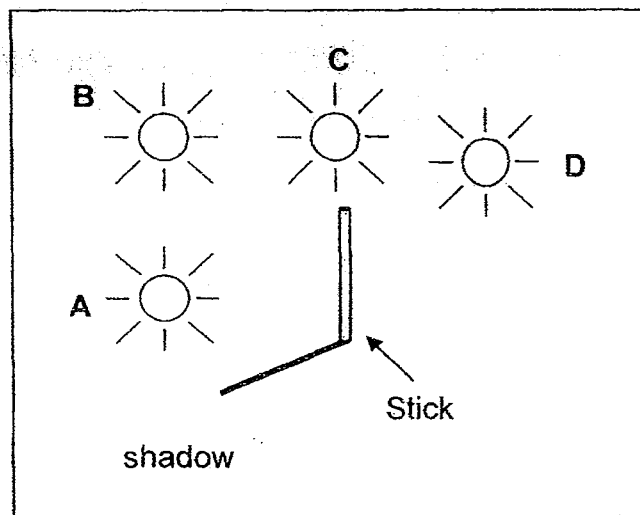
Degree of transparency	Materials
Opaque	W, X, Z
Transparent	Y



She switched on the torch and made an observation.  
Which of the following sheet will the shadow of the cone be seen?

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

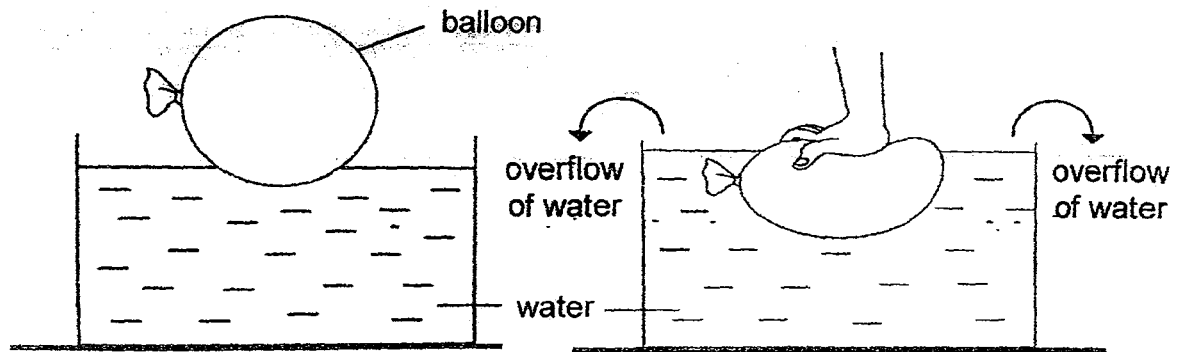
17. A, B, C and D represent the position of the Sun at different times of the day.



Based on the position of shadow in the diagram above, the Sun is likely to be at position \_\_\_\_\_.

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

18. The diagram below shows a balloon being pushed into a basin of water.

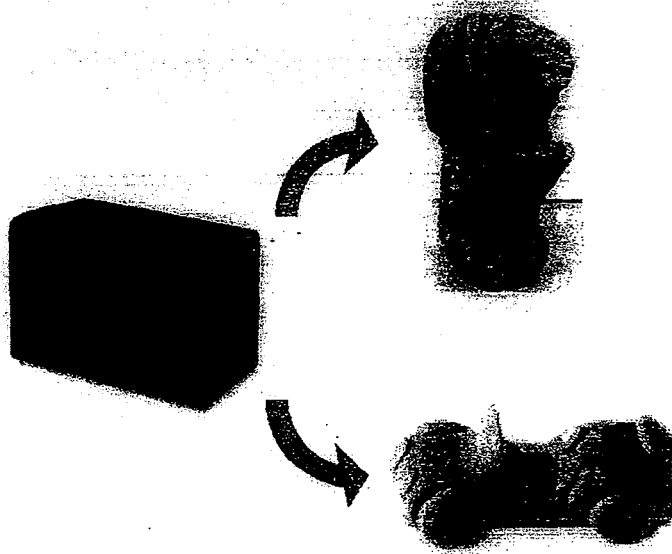


Which of the following statement(s) can be inferred from the activity?

- A Air has mass.
- B Air occupies space.
- C Air has no definite shape.

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

19. Zenith used a block of clay and made a Merlion out of it. He then used an identical block of clay and made a model car.

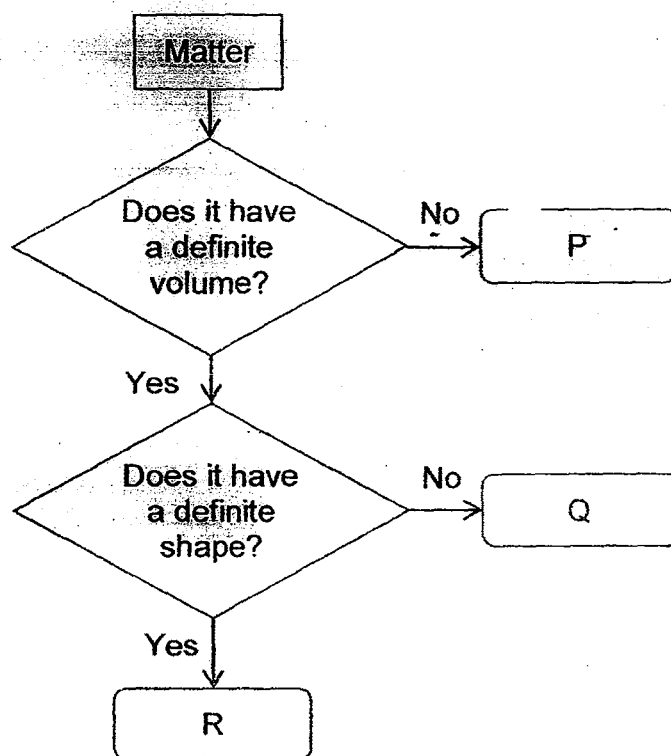


The Merlion and the model car he made both have the same \_\_\_\_\_.

- A mass
- B shape
- C volume

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

20. Study the diagram below carefully.



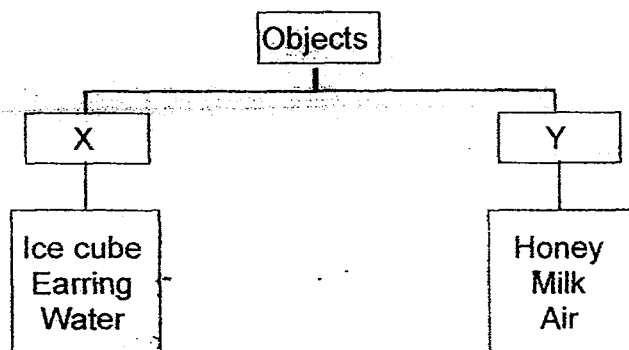
Which of the following statements about P, Q and R are correct?

- A R is definitely a solid.
- B P and Q can be compressed.
- C P can possibly be carbon dioxide

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



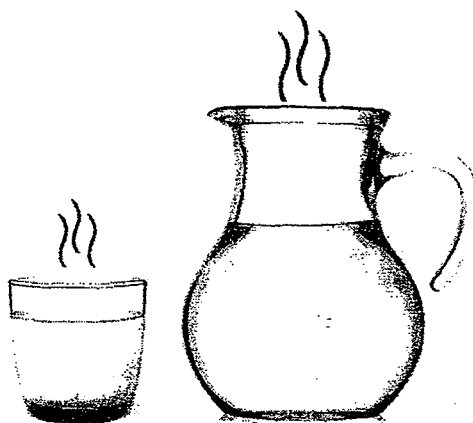
21. Study the classification below carefully.



According to the classification above, what should the headings, X and Y, be?

	X	Y
(1)	Has a definite shape.	Has a definite volume.
(2)	Has a definite volume.	Has no definite shape.
(3)	Cannot be compressed.	Can be compressed.
(4)	Has no definite shape.	Has a definite shape.

22.



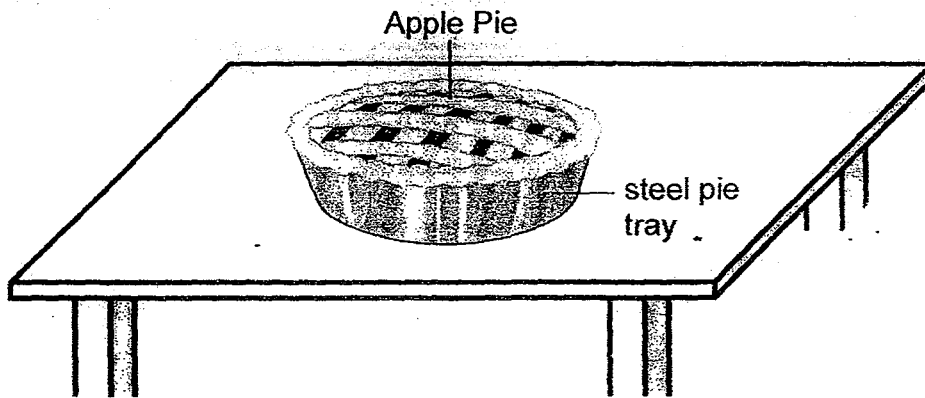
After boiling some water, Fauzi poured the water into a jug and a cup as shown in the diagram above.

Which statement(s) below about the jug and the cup of water is correct?

- A The temperature of the waters in the jug and cup are the same immediately after they were filled.
- B There was more heat energy in the jug of water than the cup of water
- C Equal amount of ice is needed to cool down the hot waters in both the jug and cup.

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

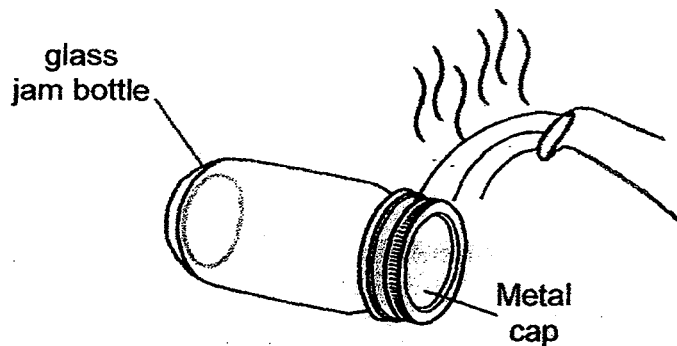
23. An apple pie was taken out of the oven and placed on a table to allow it to cool.



Which of the following statements about the cooling process of the apple pie is correct?

- (1) The pie gained heat from the steel <sup>tray</sup> ~~try~~.
- (2) The pie lost heat ~~to the surrounding air only~~.
- (3) The pie lost heat to the surrounding air and the steel pie tray.
- (4) The pie lost heat to the surrounding air, the steel pie tray and the table top.

24. Glass jam bottles tend to close too tightly that we cannot open them.

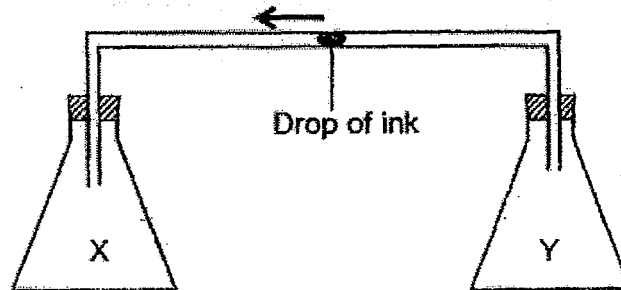


One way is to pour some hot water onto the metal cap which helps to open the cap.

Which one of the following explains why pouring hot water on the metal cap helps to open jam bottles that are closed too tight to open?

	glass jam bottle	metal cap
(1)	expanded	expanded more
(2)	contracted	expanded
(3)	expanded	contracted
(4)	expanded more	expanded

25. The diagram below shows two empty flasks, X and Y, connected by glass tube. A drop of ink is positioned in the centre of the tube.



Which of the following actions will cause the drop of ink to move to flask X?

- A Put flask X in a basin of hot water and flask Y in a basin of cold water.
- B Put flask X in a basin of cold water and flask Y in a basin of hot water.
- C Put flask X in a basin of tap water and flask Y in a basin of ice water
- D Put flask X in a basin of tap water and flask Y in a basin of warm water

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

26. The table below provides some information on W, X and Y.

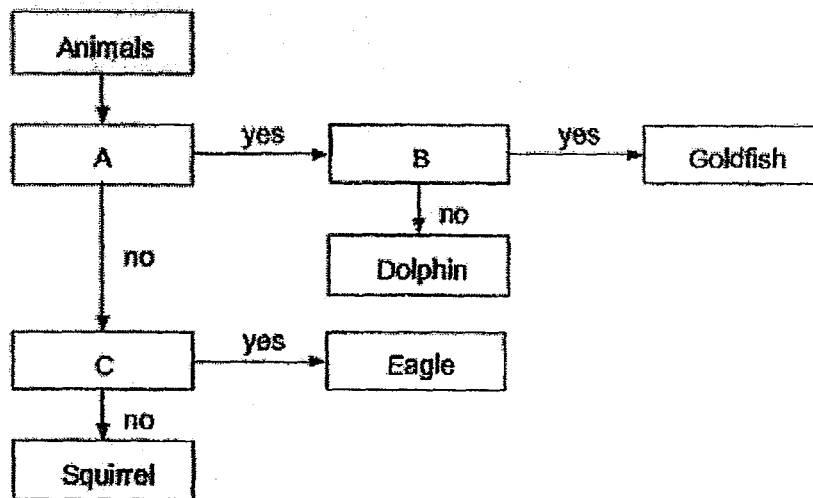
Things	Able to move on its own?	Able to reproduce?	Able to make its own food?
W	Yes	Yes	No
X	No	No	No
Y	No	Yes	Yes

Which of the following statements are true about W, X and Y?

- A Both W and X are living things.
- B W is an animal while Y is a plant.
- C Both Y and X are non-living things.
- D W is a living thing and X is a non-living thing.

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

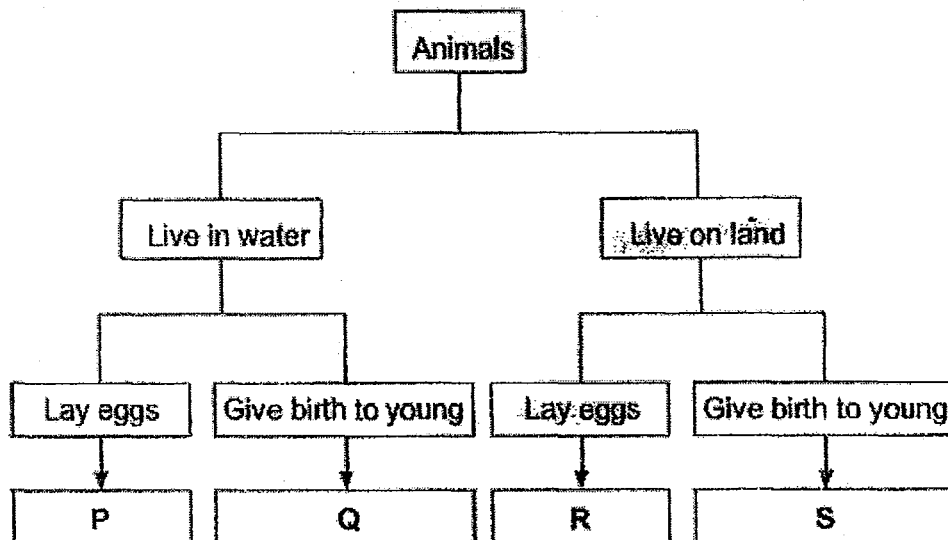
27. The flowchart below shows the characteristics of some animals.



Which of the following correctly represents A, B and C in the flowchart?

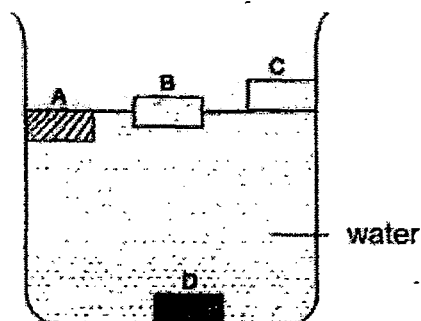
	A	B	C
(1)	Does it swim?	Does it have scales?	Does it have feathers?
(2)	Does it have scales?	Does it live in water?	Does it have fins?
(3)	Does it live in water?	Does it have scales?	Does it live on trees?
(4)	Does it have hair?	Does it lay eggs?	Can it fly?

28. Study the classification chart below carefully.



Which one of the following describes an eagle?

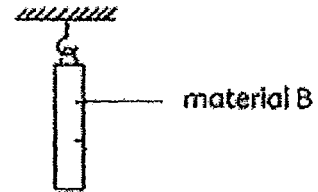
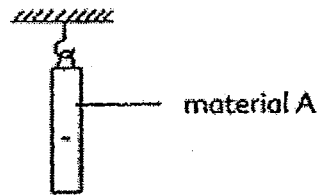
- (1) P
  - (2) Q
  - (3) R
  - (4) S
29. Materials A, B, C and D of the same size were placed into a container of water. The diagram below shows the position of the materials in the container of water.



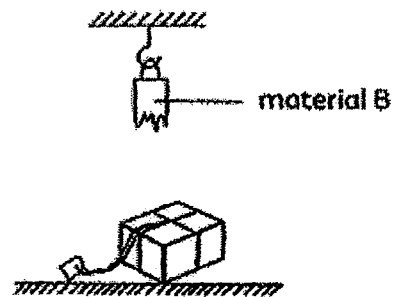
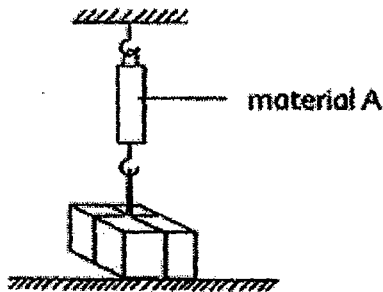
What of the materials A, B, C or D is most likely to be made of ceramic?

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

30. A strip of material A and material B were each hung on a hook as shown below.



Two boxes of the same weight were then hung onto the strips. The results are shown below.



What can be concluded from the experiment?

- (1) Material A is lighter than material B.
- (2) Material A is stronger than material B.
- (3) Material B is more waterproof than material A.
- (4) Material B is more transparent than material A.



**NAN HUA PRIMARY SCHOOL  
SEMESTRAL ASSESSMENT 1 – 2015  
PRIMARY 4**

**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**

	/40
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**Name:** \_\_\_\_\_ ( ) **Class: P 4** \_\_\_\_\_

**Date : 13 May 2015**

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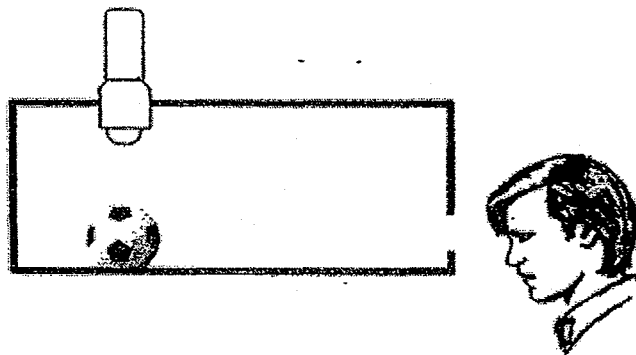


**Section B: (40 marks)**

Write your answers to questions 31 to 44.

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

31. Jack made a box out of cardboard and painted it black all round. He then fixed a torchlight into it as shown in the diagram below.



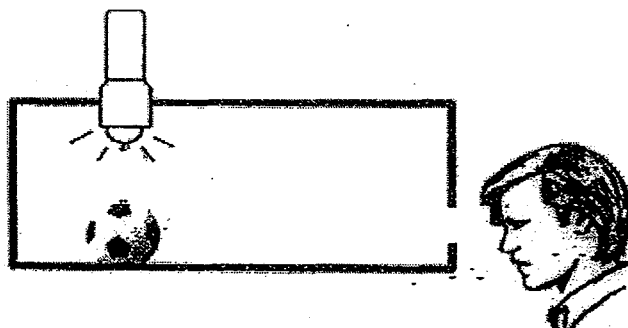
- (a) Jack placed a ball in the box and peeked into a small hole made near the bottom of the box. He realized that he was unable to see anything inside. When he switched on the torchlight fixed to the box, he could clearly see the ball.

Explain why he was able to see the ball when he switched on the torchlight that was fixed to the box. [2]

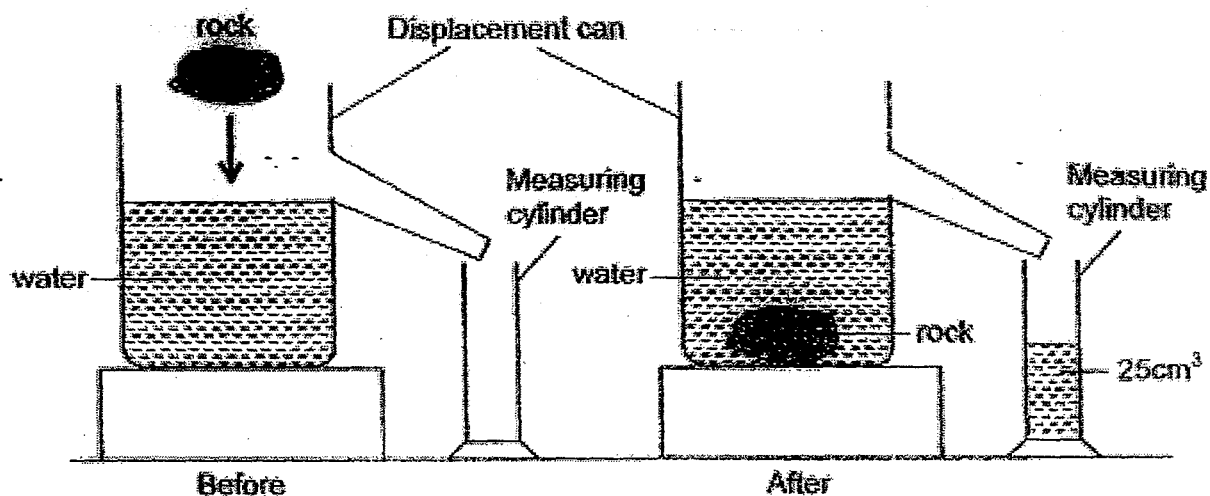
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- (b) Draw the path of light in the diagram below to show how Peter was able to see the ball after he switched on the torchlight. [1]



32. The diagram below shows a setup to find the volume of an irregular-shaped rock.



- (a) What is the volume of the rock? [1]

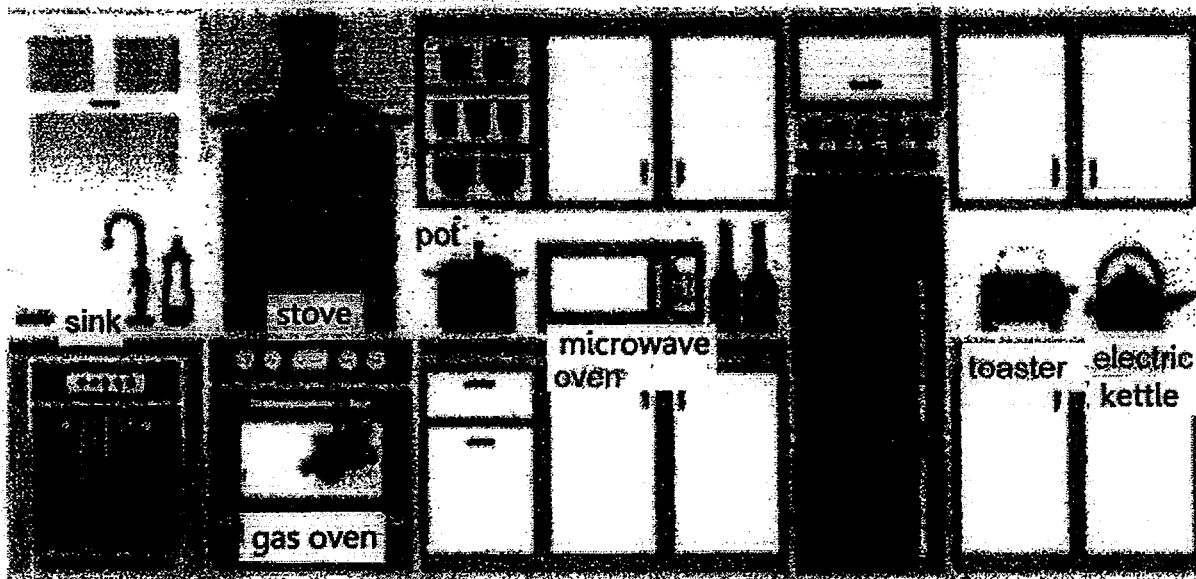
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- (b) What does the experiment show you about the property of water? [1]

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Score	<div style="border: 1px solid black; width: 100px; height: 100px; position: relative;"><div style="position: absolute; top: 0; right: 0; width: 50%; height: 50%; border-left: 1px solid black; border-bottom: 1px solid black; transform: rotate(45deg);"></div></div>
	2

33. The diagram below shows a kitchen.



Study the diagram above carefully and answer the following questions.

- (a) How many sources of heat are found in the kitchen above? [1]

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- (b) Apart from the kitchen, name 2 other electrical appliances in the other rooms of the house that produce useful heat. [1]

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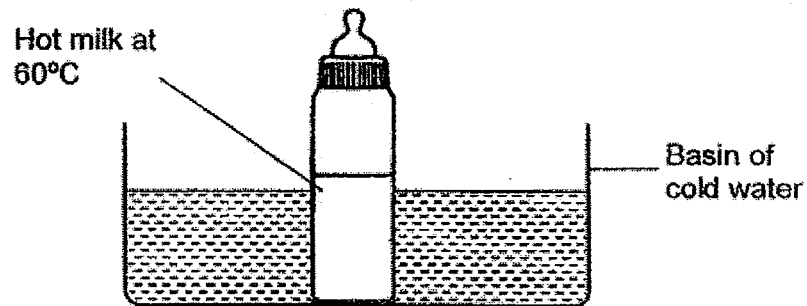
Score	<div style="border: 1px solid black; width: 100px; height: 100px; position: relative;"><div style="position: absolute; top: 0; right: 0; text-align: right;">2</div></div>
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1. The first part of the paper discusses the importance of the study of the history of the United States. It is argued that the study of history is essential for a full understanding of the present and for the development of a sense of national identity. The author points out that the study of history is not only a means of learning about the past, but also a way of understanding the present and of shaping the future.

2. The second part of the paper discusses the importance of the study of the history of the United States. It is argued that the study of history is essential for a full understanding of the present and for the development of a sense of national identity. The author points out that the study of history is not only a means of learning about the past, but also a way of understanding the present and of shaping the future.

3. The third part of the paper discusses the importance of the study of the history of the United States. It is argued that the study of history is essential for a full understanding of the present and for the development of a sense of national identity. The author points out that the study of history is not only a means of learning about the past, but also a way of understanding the present and of shaping the future.

34. Mrs Tay made some milk for her baby but realised that it was too hot. She then put the milk bottle into a basin of cold water to cool it down.



- (a) What will happen to the temperature of the milk? [1]

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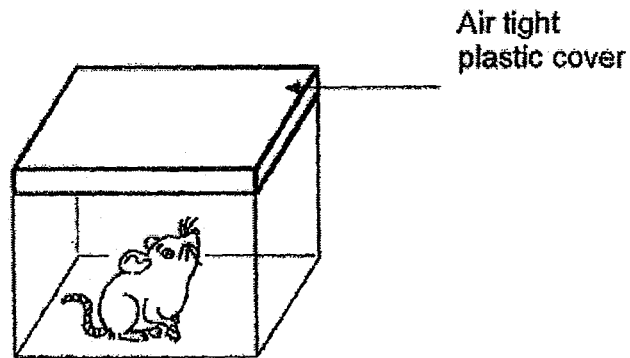
- (b) Explain what happened in part(a) above. [1]

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Score	<div></div> <div>2</div>
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35. Joshua caught a mouse in his kitchen last night and placed it in an air-tight container as shown below.



- (a) What will happen to the mouse the next morning? [1]

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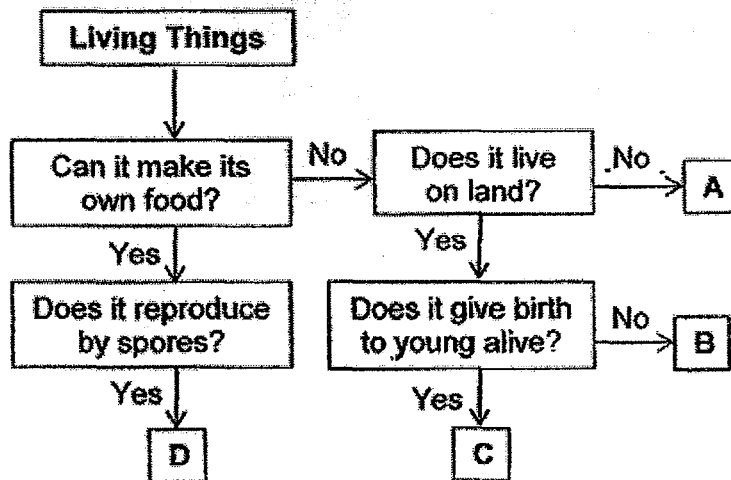
- (b) Give a reason for your answer in (a). [1]

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- (c) Write (T) for 'True' or (F) for 'False' on the blanks provided. [2]

- (i) All living things can make their own food. \_\_\_\_\_
- (ii) Fish do not need air because they live in water. \_\_\_\_\_
- (iii) Micro-organisms are very tiny living things. \_\_\_\_\_
- (iv) Mammals feed their young with milk. \_\_\_\_\_

36. Study the flowchart below.



- (a) Which letter represents a chicken? Explain your answer. [1]

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- (b) Based on the flowchart, state 2 similarities between B and C. [2]

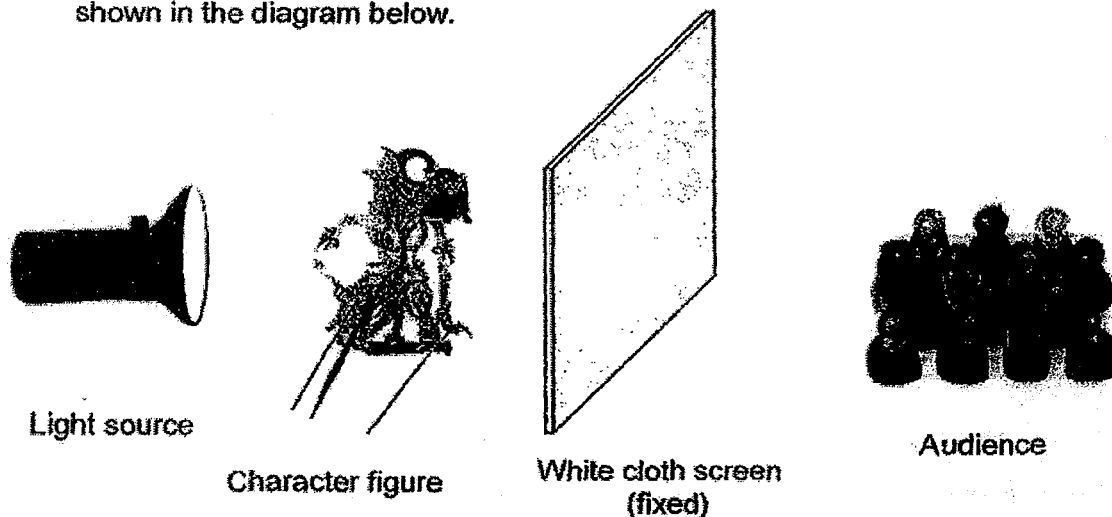
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37. Brian's teacher took his class to watch a 'wayang kulit' performance which uses shadows to depict their characters.



They could not see the performers but only shadows of figures on the white cloth screen. The performers are on the other side of the cloth screen as shown in the diagram below.



- (a) Brian went back to school and decided to put up a similar performance. Explain how the shadow of the figure was formed on the screen. [1]

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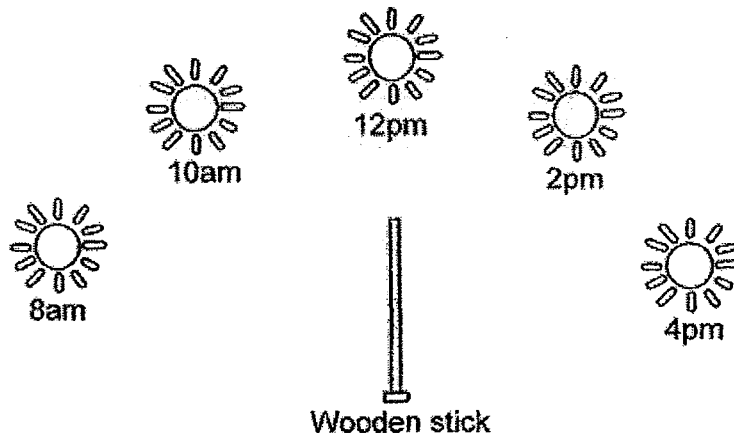
- (b) However, while practising, he discovered that the shadow of the figure on the white cloth screen were too light and blur. Without moving the white screen, what should he do to make the shadow darker? [1]

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38. Shannon placed a wooden stick on the assembly ground as shown below.



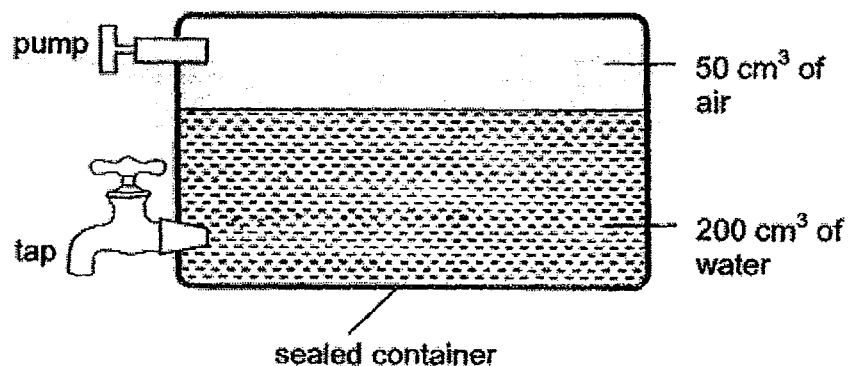
She measured the length of the shadow at 8am, 10am, 12pm and 2pm, and recorded them in the table below.

Time	Length of Shadow
8am	12 cm
10am	8 cm
12pm	1 cm
2pm	8 cm
4pm	

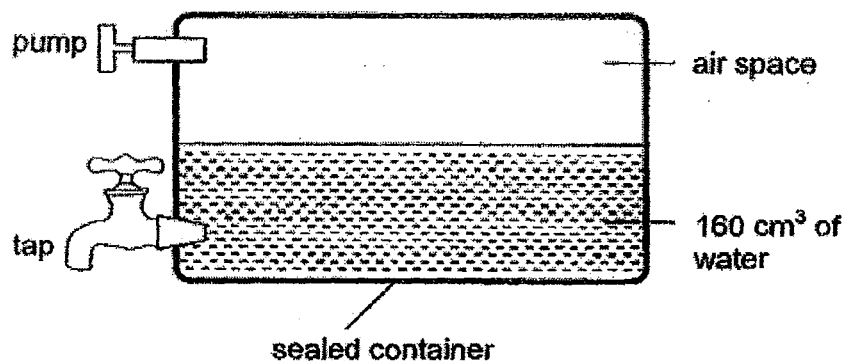
- (a) In the table above, Shannon had missed the time to measure the length of the shadow at 4pm. Based on the information given, what do you think is the estimated length of the shadow at 4pm? Fill in the blank provided above. [1]
- (b) For the experiment to be a fair test, identify the variables to change, to measure and to keep the same by putting a tick (✓) in the respective columns. [2]

Variables	Variable to change	Variable to measure	Variable to keep the same
Height of wooden stick			
Position of wooden stick			
Height of shadow			
Time interval when height of shadow is recorded (i.e. every 2 hours)			

39. Amy conducted an experiment using the set-up as shown below.



She used the tap to remove  $40 \text{ cm}^3$  of water.



She then pumped in  $60 \text{ cm}^3$  of air into the container.

- (a) What is the final volume of air in the container? [1]

\_\_\_\_\_

- (b) Name the properties of water and air that you used to obtain your answer in part (a). [2]

i) Air : \_\_\_\_\_

ii) Water : \_\_\_\_\_

40. Guowei wanted to find out the states of three samples, P, Q and R. He tested the samples according to the table below. A tick (✓) means the behaviour was observed whereas a (x) means it was not.

Sample	Flows easily	Can be compressed
P	✓	x
Q	✓	✓
R	x	x

- (a) From Guowei's findings above, his classmate identified sample P to be a liquid. Explain how his friend was able to identify P to be a liquid. [2]

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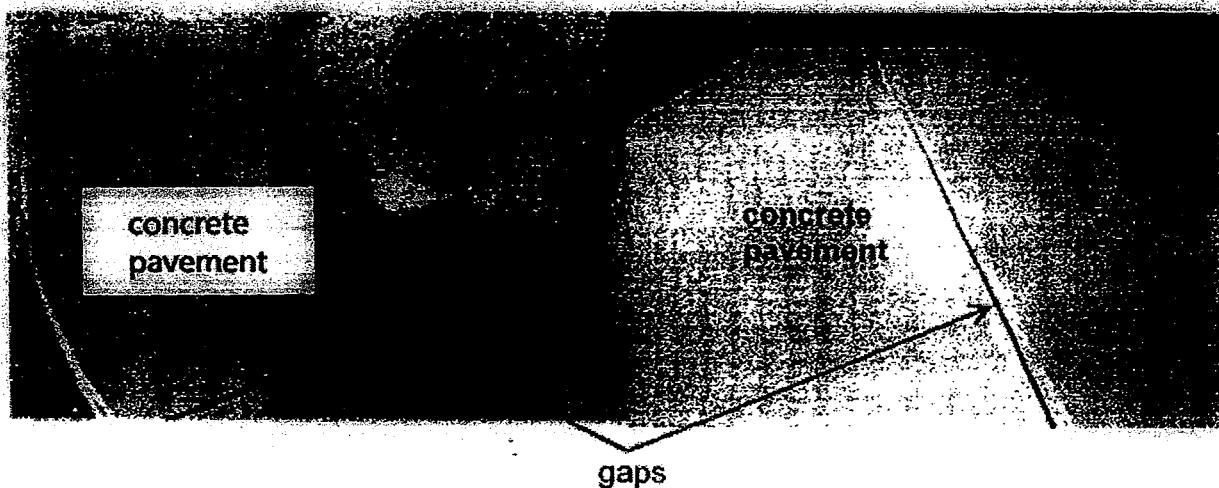


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- (b) From the observations made above, only one sample matches a substance in the table below. Fill in the blanks space to identify the sample that matches the substance. [1]

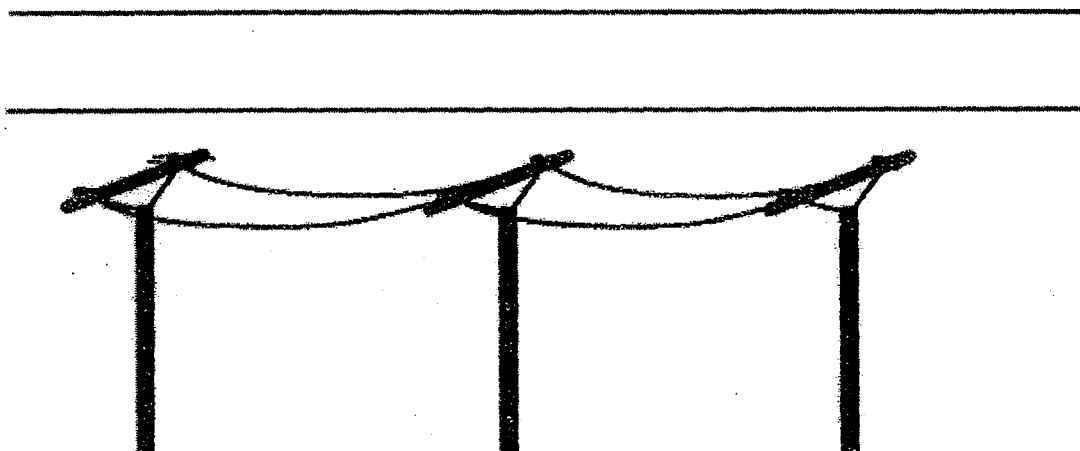
Substance	Sample P, Q or R
oxygen	
rubber	

41. Study the picture of a concrete pavement below.



- (a) These concrete pavements were purposely built with gaps in between. Why is this so?

[2]



Jason visited his uncle who lives in the countryside. One hot afternoon, he noticed that the electrical wires are hanging loosely downwards. He suggested to his uncle to tighten the wires but his uncle refused. His uncle warned that the wires might snap in the night if they are too tight.

- (b) Do you agree with Jason's uncle? Explain why.

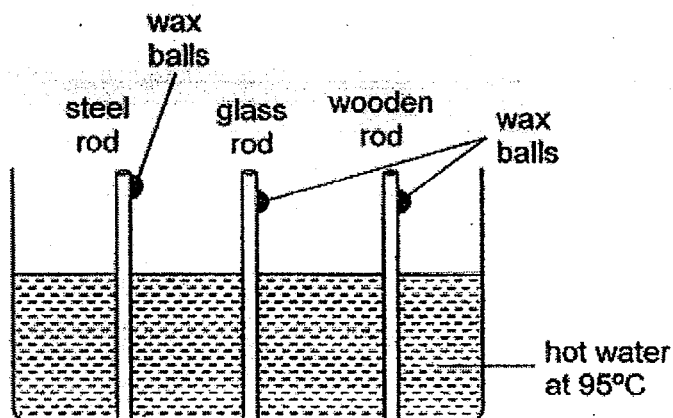
[2]

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42. Henry set up an experiment as shown below.



He observed that the wax balls fell off one by one after some time.

- (a) What variable should he measure if he wanted to find out which rod was the best conductor? [1]

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- (b) However, his experiment was not a fair one. Explain what was wrong with it. [1]

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- (c) Besides the temperature of the water, identify one other variable to keep the same to ensure a fair test in this experiment. [1]

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43. The table below shows the characteristics of four animals W, X, Y and Z. Some of the information about the animals is missing.

Outer body covering	-	hair	-	feathers
Special	3 body parts	mothers produce milk for young	Breathes through gills	-
Movement	flies	swims	swims	runs
Reproduction	lays eggs	-	lays eggs	lays eggs

- (a) Based on the information given in the table above, match the animals, W, X, Y and Z, to the correct animal group below. [2]

<b>Fish</b>	
<b>Bird</b>	
<b>Insect</b>	
<b>Mammal</b>	

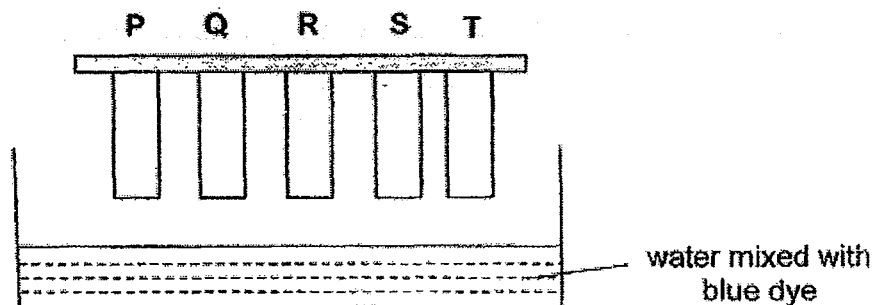
- (b) State one other characteristic of Animal W that is not stated in the classification table above. [1]

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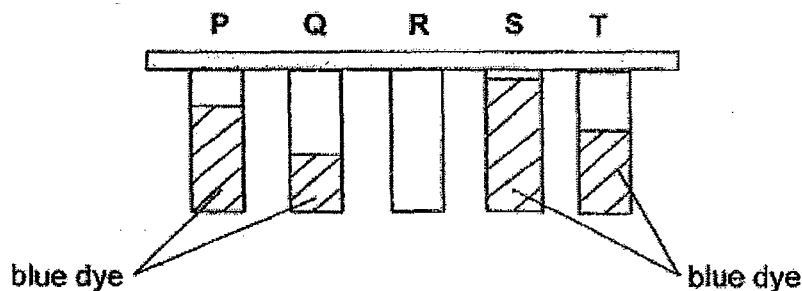


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44. Samuel dipped 5 strips of different material into a beaker of water mixed with blue dye for 10 minutes, as shown in the diagram below.



After 10 minutes, the result of the investigation is shown in the diagram that follows.



- (a) What can you conclude about material R and material S respectively, from the experiment above? [1]

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- (b) Samuel wanted to make a raincoat from one of the materials listed above. Which material (P, Q, R, S or T) would be most suitable? Explain your answer. [2]

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End of paper

Score	<div style="border: 1px solid black; width: 100px; height: 100px; position: relative;"><div style="position: absolute; top: 0; right: 0; width: 50%; height: 50%; border-left: 1px solid black; border-top: 1px solid black;"></div></div>
	3





# Answer Key

EXAM PAPER 2015

SCHOOL : NAN HUA

SUBJECT : P4 SCIENCE

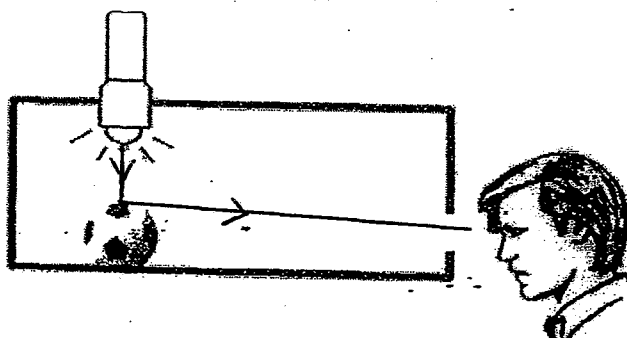
TERM : SA1

ORDER CALL : MR GAN @ 92998971 92475053 86065443

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

31)a) Light from the torch is reflected off the ball and entered Jack's eyes.

b)



**32)a) 25cm<sup>3</sup>**

**b) Water occupies space.**

**33)a) There are five sources of heat founding kitchen.**

**b) Water heater**

**34)a) The temperature of the milk decrease.**

**b) The milk lost heat to the cold water in the basin causing the temperature of the milk to decrease.**

**35)a) The mouse will die.**

**b) It has no air**

**c)i)F    ii)F    iii)T    iv)T**

**36)a) B. The chicken cannot make its own food, chicken live on land and lay egg.**

**b) they both cannot make food and both live on land.**

**37)a) the shadow of the figure was formed on the screen when the puppet blocks the path of the light from passing through.**

**b) Increase the intensity of the light source, move to darker place, make the character figure with a darker material, move the light source nearer to the character figure.**

**38)a) 12cm**

38) b)

Variables	Variables to change	Variables to measure	Variables to keep the same
Height of wooden stick			✓
Position of wooden stick			✓
Height of shadow		✓	
Time interval when height of shadow is recorded			✓

39)a) 90cm<sup>3</sup>

b)i) Can be compress.No definite volume.

ii) Has definite volume. Cannot be compressed.

40)a) A liquid has no definite shape so it can flow easily.A liquid has a definite volume so it cannot be compressed.

39)b)

Substance	Sample P,Q or R
Oxygen	Q
Rubber	R

41)a) To provide space for the concrete to gain heat and expand on a hot day so it will not crack.

b) Yes. The wires will lose to the cold surrounding air and contract in the cool night causing the wire to snap.

42)a) The time taken for each wax ball to fall off rods.

b) There should only be one changed variable which is the material of the rod but the position height of the wax ball is not the same and will affect the result of the experiment.

c) The amount/size/type of the wax OR

the size/length/thickness of rods OR

position of the wax ball the the rod.

43)a) Fish = Y   Bird= Z   Insect= W   Mammal= X

b) Has 6 legs/ a pair of feelers / hard outer covering/  
exoskeleton/ compound eyes

**44)a) S is the most absorbent. R is the least absorbent.**

**b) material R would be the most suitable as it is waterproof since a raincoat is to protect the person wearing it on raining day.**

