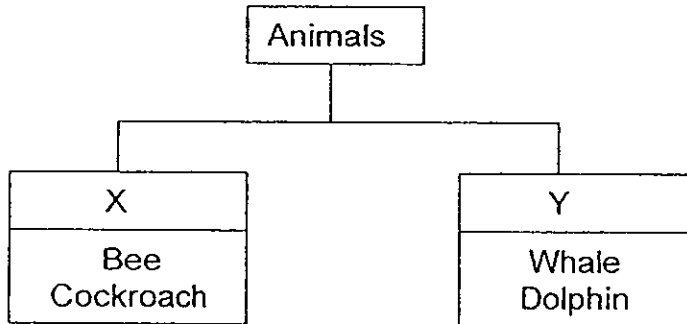


**Section A (30 x 2 marks = 60 marks)**

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 provided.

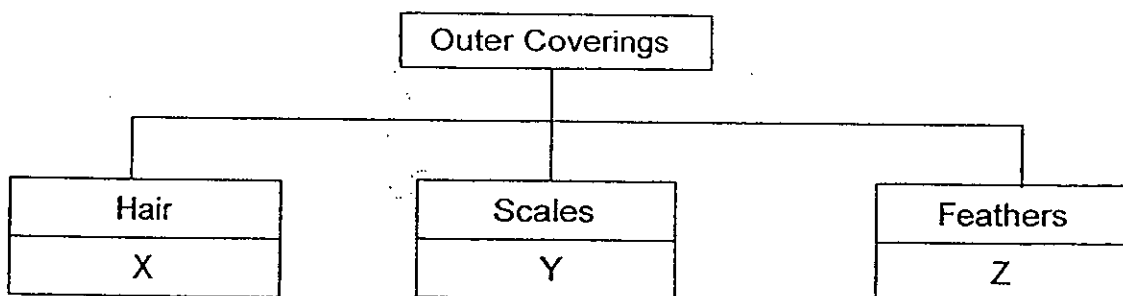
1. Study the classification chart below.



Which of the following best represents the characteristics of animals in groups X and Y?

	X	Y
(1)	Have feathers	Have scales
(2)	Lay eggs	Gives birth to young alive
(3)	Breathe through lungs	Breathe through gills
(4)	Hard outer covering	Have scales

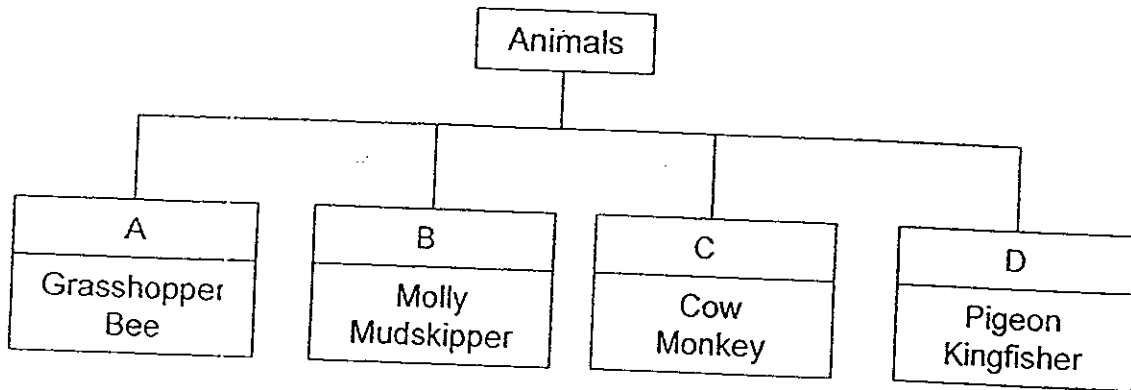
2. Some aquatic animals are grouped according to their outer coverings.



Which animals could X, Y and Z represent?

	X	Y	Z
(1)	Seal	Prawn	Butterfly
(2)	Spiders	Angelfish	Ostrich
(3)	Crab	Snake	Mynah
(4)	Bat	Swordtail	Owl

For questions 3 and 4, refer to the classification chart below.



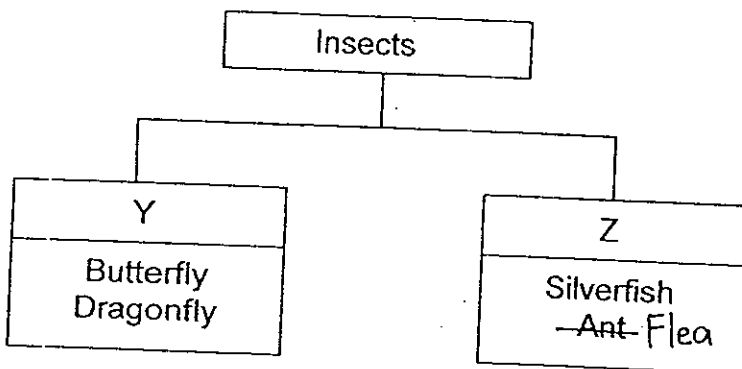
3. Which of the following best represents A, B, C and D?

	A	B	C	D
(1)	Birds	Fish	Mammals	Insects
(2)	Insects	Mammals	Birds	Fish
(3)	Mammals	Insects	Birds	Fish
(4)	Insects	Fish	Mammals	Birds

4. Which of the following animals are correctly classified based on the chart above?

	A	B	C	D
(1)	Silverfish	Guppy	Platypus	Hawk
(2)	Guppy	Hawk	Silverfish	Platypus
(3)	Platypus	Silverfish	Hawk	Guppy
(4)	Hawk	Platypus	Guppy	Silverfish

5. Study the classification chart on insects below.



Which one of the following best describes how the animals above have been classified?

- (1) The number of legs.
- (2) The presence of wings.
- (3) The way the insect ~~move~~ reproduce
- (4) The number of body parts.

6. Study the classification table below.

X	Y
duckweed water hyacinth	lotus water lily

Which one of the following could best represent headings X and Y?

	X	Y
(1)	floating plants	fully submerged plants
(2)	partially submerged plants	floating plants
(3)	floating plants	partially submerged plants
(4)	fully submerged plants	partially submerged plants

7. Which of the following statements about plants are **true**?

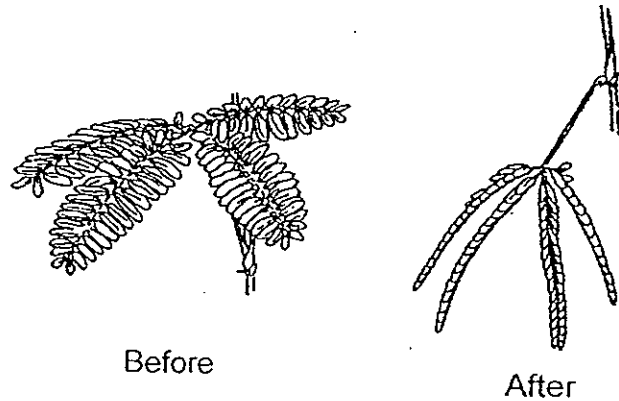
- A All plants have stem.
- B All plants have flowers.
- C All plants have leaves and roots.

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

8. Which one of the following statements about pine trees and pong pong trees is **incorrect**?

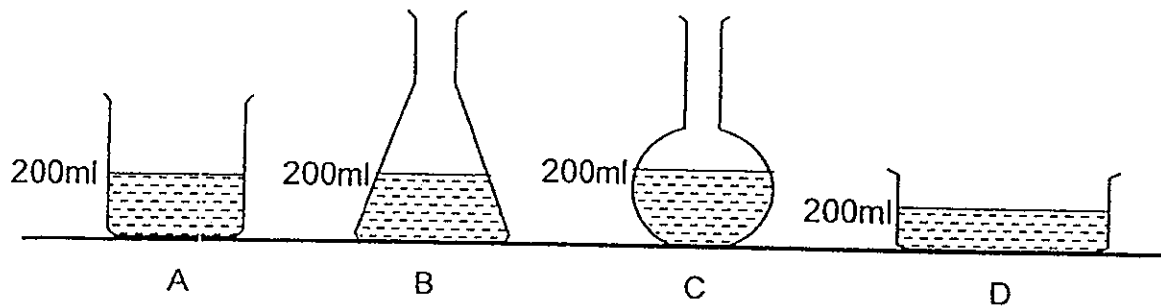
- (1) Both organisms live on land.
- (2) Both organisms are flowering plants.
- (3) Both organisms are able to make their own food.
- (4) Both organisms cannot move freely on their own.

9. Jack noticed that a mimosa plant folded its leaves when touched.



Which one of the following characteristics of living things does this observation show?

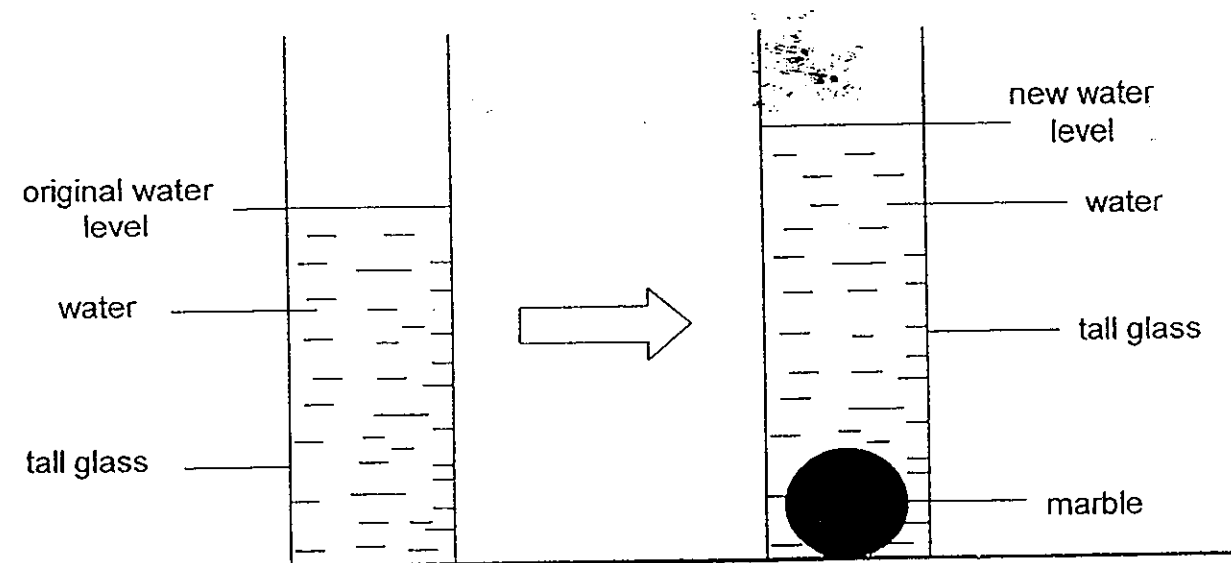
- (1) Living things can grow.
  - (2) Living things can reproduce.
  - (3) Living things need air, food and water.
  - (4) Living things can respond to changes in its surrounding.
10. During a science experiment, Annette poured 200ml of water into each of the containers, A, B, C and D, as shown below.



What does the experiment above show about the property of water?

- (1) Water has definite shape and volume.
- (2) Water has no definite shape and volume.
- (3) Water has definite shape but has no definite volume.
- (4) Water has no definite shape but has definite volume.

11. Narita filled a tall glass with water before placing a marble into it. He observed that the water level in the tall glass rose.



Which one of the following best explains Narita's observation?

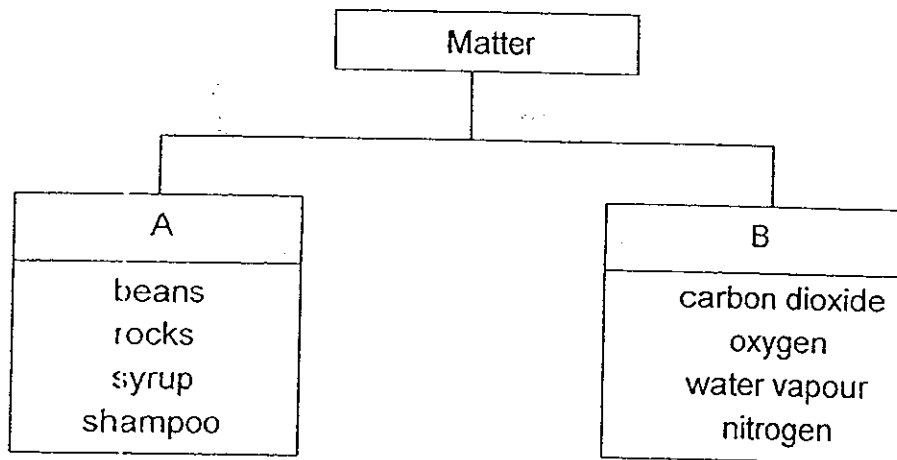
- (1) The marble took up space in the tall glass.
  - (2) The water increased in mass when the marble was put in.
  - (3) The water increased in volume when the marble was put in.
  - (4) The marble increased in volume when it was placed into the tall glass.
12. Two new substances Y and Z were discovered by some scientists. They conducted some tests on these two substances and recorded the results in the table below.

Substance	Does it have a definite volume?	Does it have a definite shape?
Y	Yes	Yes
Z	Yes	No

Which of the following matter have properties that are similar to substances Y and Z respectively?

	Matter with properties similar to substance Y	Matter with properties similar to substance Z
(1)	steam	shadow
(2)	stone	tomato juice
(3)	water	oxygen
(4)	wooden chair	paper

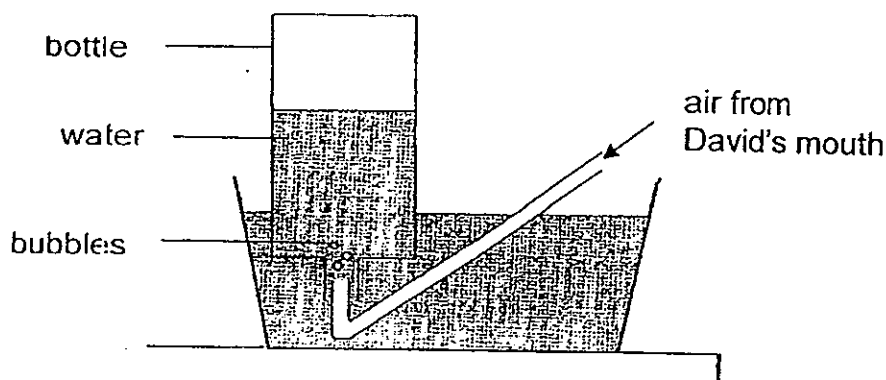
13. The diagram below shows a way of classifying some matter.



Which one of the following headings could best represent A and B?

	A	B
(1)	Takes the shape of the container	Does not take the shape of the container
(2)	Has definite shape	Has no definite shape
(3)	Has definite volume	Has no definite volume
(4)	Occupies space	Does not occupy space

14. David blew air into an inverted bottle of water through a tube as shown in the diagram below.

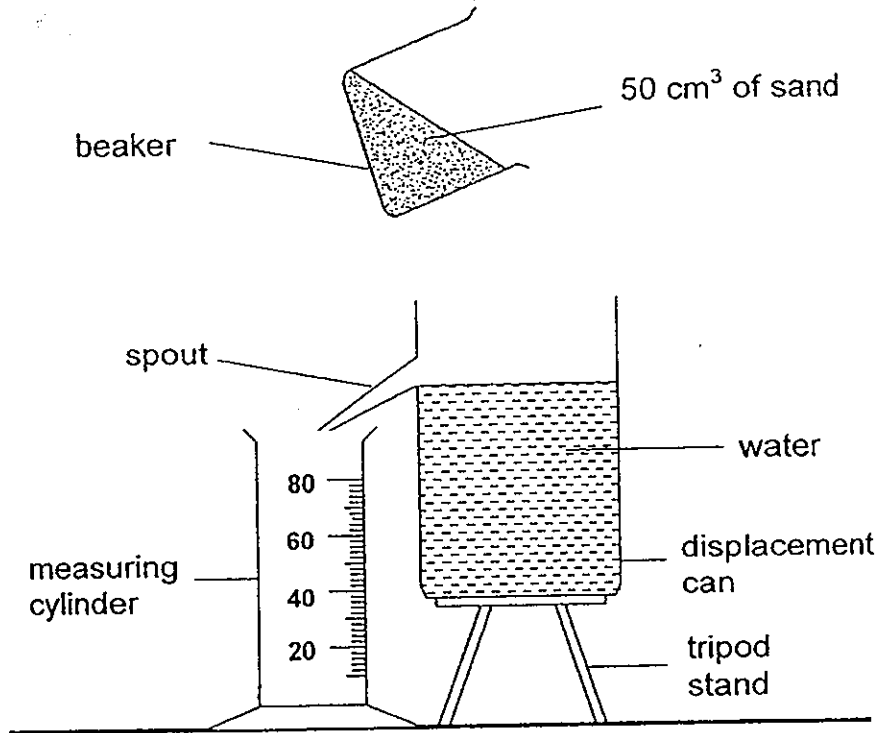


What will happen to the water level in the bottle?

- (1) The water level in the bottle will rise.
- (2) The water level in the bottle will drop.
- (3) The water level in the bottle will rise then drop.
- (4) The water level in the bottle remains unchanged.

15. Judith filled a displacement can with water as shown in the diagram below. Then, she filled a beaker with  $50 \text{ cm}^3$  of sand.

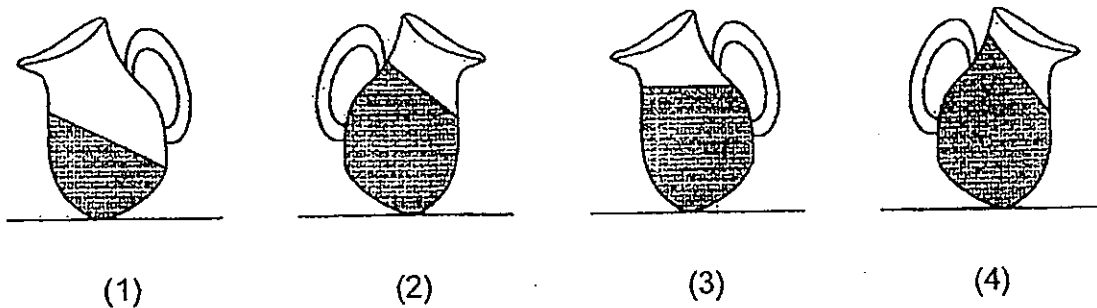
When she poured all the sand into the displacement can, water flowed out through the spout of the displacement can into the measuring cylinder.



What was the volume of water collected in the measuring cylinder?

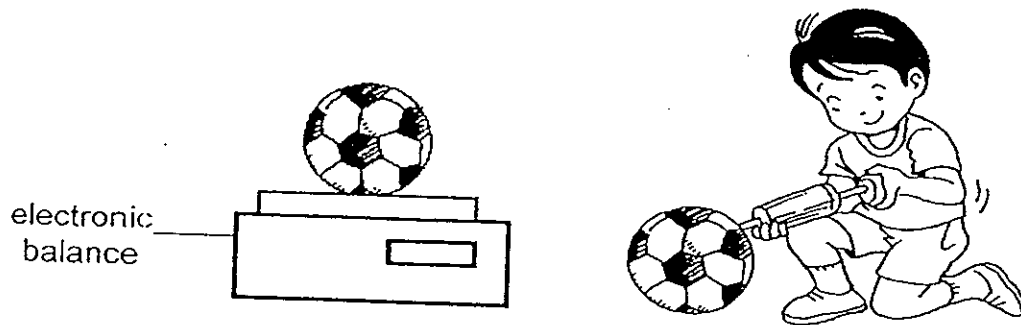
- (1)  $45 \text{ cm}^3$
  - (2)  $50 \text{ cm}^3$
  - (3)  $55 \text{ cm}^3$
  - (4)  $60 \text{ cm}^3$
16. Geraldine poured 250ml of water into 4 similar jugs and she tilted the jugs in various positions on the table.

Which one of the following diagrams correctly shows the water level in the jug after 1 minute?



17. Shaun did an experiment as shown in the diagram below.

First, he weighed a ball using an electronic balance and recorded its mass. Next, he pumped more air into the ball using a hand pump. Then, he weighed the ball again and recorded its mass.



Which one of the following results is mostly likely to be the set of readings he recorded and the conclusion he could draw from his experiment?

	Mass of ball at first (g)	Mass of ball after more air was pumped in (g)	Conclusion
(1)	480	520	Air has mass and can be compressed
(2)	480	580	Air has no definite volume
(3)	480	480	Air has mass
(4)	480	450	Air has no definite volume

18. Light is one form of energy from the sun. Which of the following activities require light?

- A Plants making food in the day.
- B Burning wood used to cook food.
- C Boiling water using an electric heater.
- D A scientist using binoculars to observe animals in a forest.

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

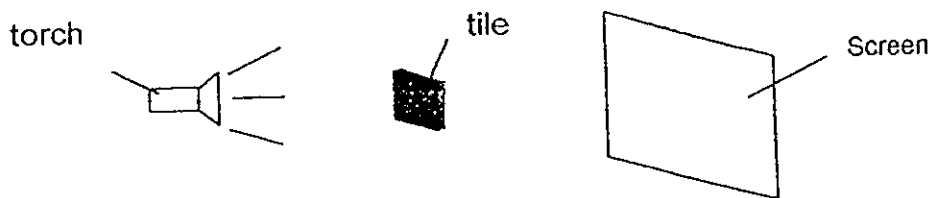


19. Which of the examples below are natural light sources?

- A star
- B moon
- C firefly
- D lamp post

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

20. Susan conducted an experiment by placing a tile in between a torch and a screen as shown below.

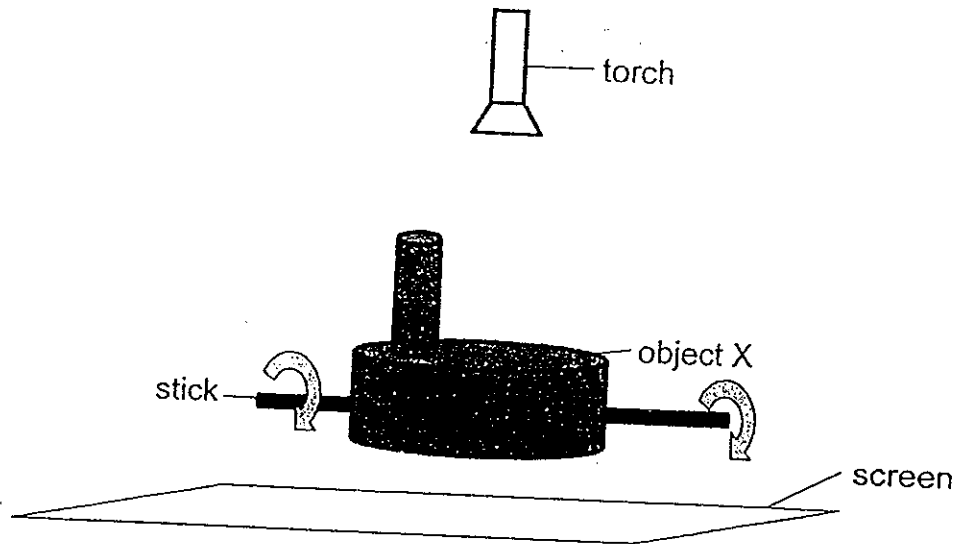


Which of the following actions will enlarge the shadow of the tile on the screen?

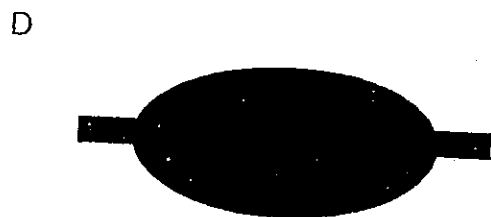
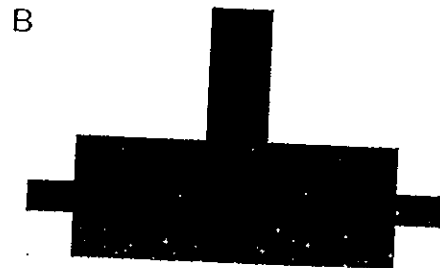
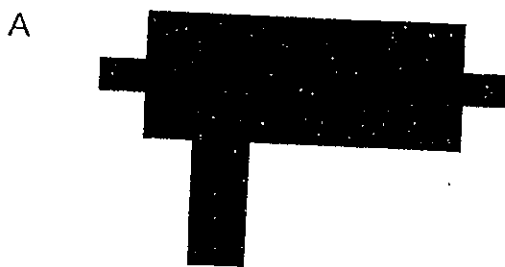
- A Moving the tile closer to the torch.
- B Moving the tile closer to the screen.
- C Moving the torch away from the tile.
- D Moving the screen away from the tile.

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

21. Study the diagram below. A stick was inserted into object X to allow the object to be rotated. A torch was then placed above it and switched on as object X rotated about the stick as shown in the diagram. A shadow of the object was then cast on a screen placed below the object.

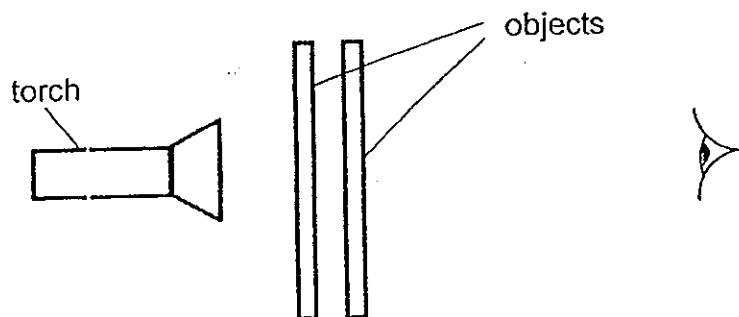


Which of the following are possible shadows of object X when it is rotated as indicated?



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

22. Ali conducted an experiment using objects A, B and C and a torch. He placed 2 objects at a time in front of the torch as shown below.



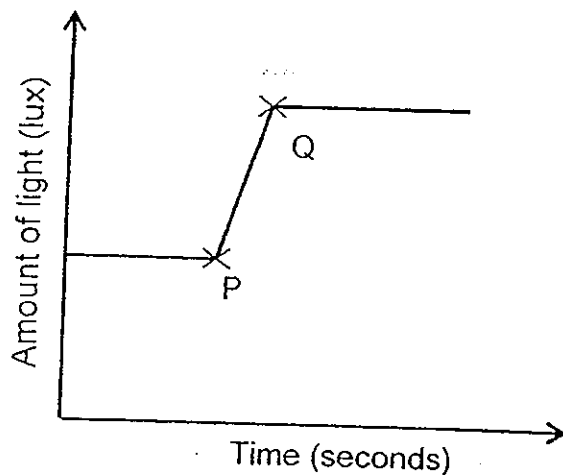
He switched on the torch and recorded if he could see light passing through. His results are shown in the table below. A tick (✓) shows that the object was placed in front of the light source.

Objects			Observation
A	B	C	
	✓	✓	No light was observed.
✓		✓	Some light was observed.
✓	✓		No light was observed.

Which one of the following options best describes the property of objects A, B and C?

	A	B	C
(1)	translucent	transparent	opaque
(2)	transparent	opaque	translucent
(3)	translucent	transparent	translucent
(4)	opaque	opaque	transparent

23. Yao Ming connected a light sensor to a datalogger in the middle of a room. He then recorded the reading from the datalogger every 10 second and then plotted a graph as shown below.



Which of the following are possible reasons why there was a sudden change from P to Q in the amount of light detected?

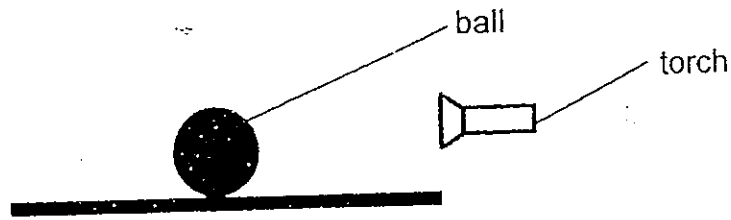
- A Someone switched on a light in the room.
- B Someone closed the curtains in the room.
- C Someone covered a light bulb in the room with a cloth.
- D Someone used a mirror to reflect more light onto the sensor.

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

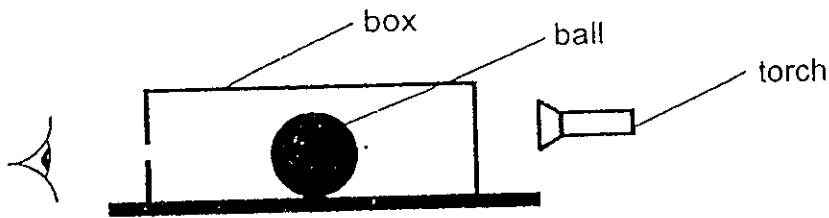
24. Kumar placed a large sheet made of material X in front of a mug. When he looked at the mug again, he noticed that the image appeared blurred. Which one of the following materials could X be?

- (1) aluminium foil
- (2) mirror
- (3) frosted glass
- (4) steel

25. Sally placed a ball on a table in a dark room. When a torch was switched on, she was able to see the ball.



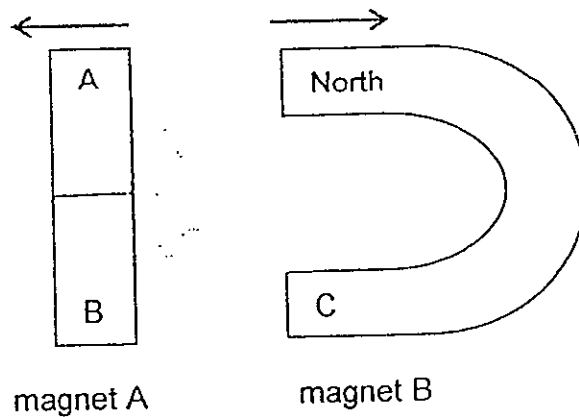
She then placed a box with a hole on its side over the ball and looked through the hole as shown in the diagram below. However, when the torch was switched on, she was unable to see the ball.



Which of the following best explains why she could not see the ball?

- (1) The light passed through the box.
- (2) The ball cast a shadow on the box.
- (3) The ball could not reflect light into her eyes.
- (4) The box occupied more space than the ball.

26. Study the magnets given below.

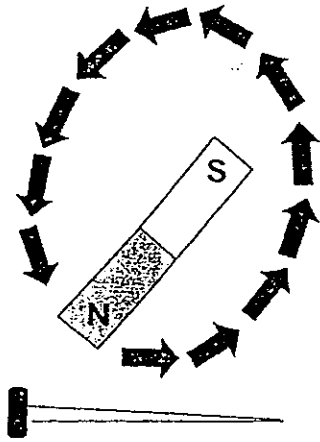


The two magnets repelled each other when they were brought towards each other. What are the poles of A, B and C?

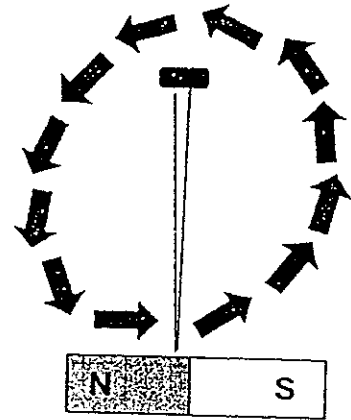
	A	B	C
(1)	North	South	North
(2)	North	South	South
(3)	South	North	South
(4)	South	North	North

27. Which one of the following diagrams shows the proper way to make a magnet by using the "stroke" method?

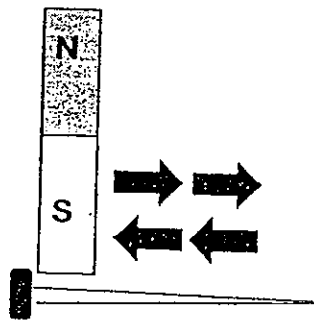
(1)



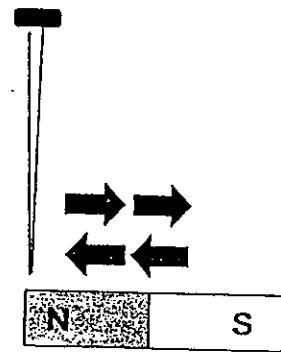
(2)



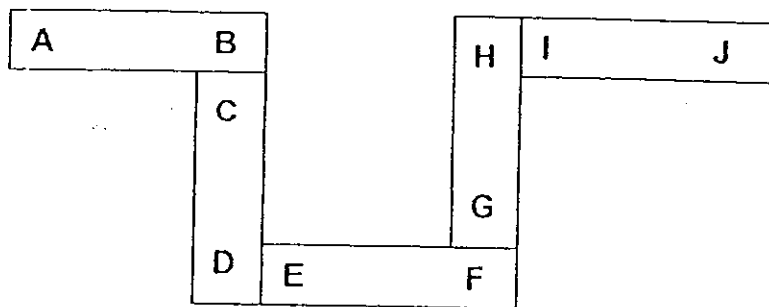
(3)



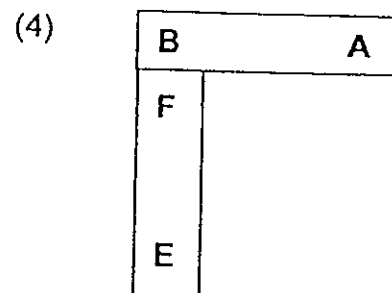
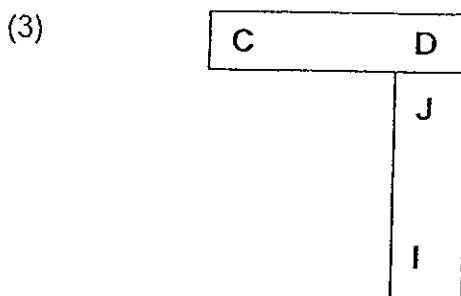
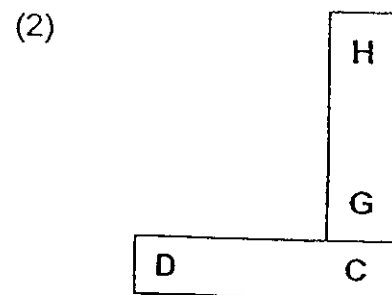
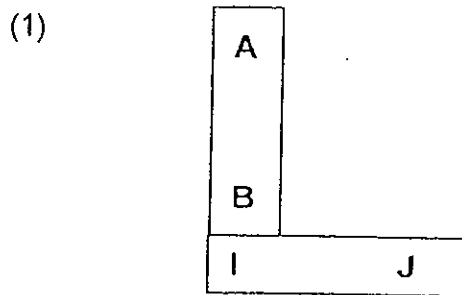
(4)



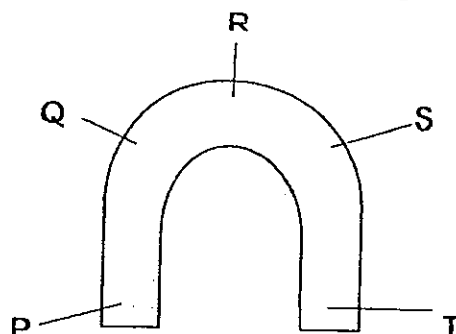
28. Five bar magnets with their ends marked A to J can be arranged as shown below.



Which one of the following diagrams shows a possible arrangement of two of the magnets?



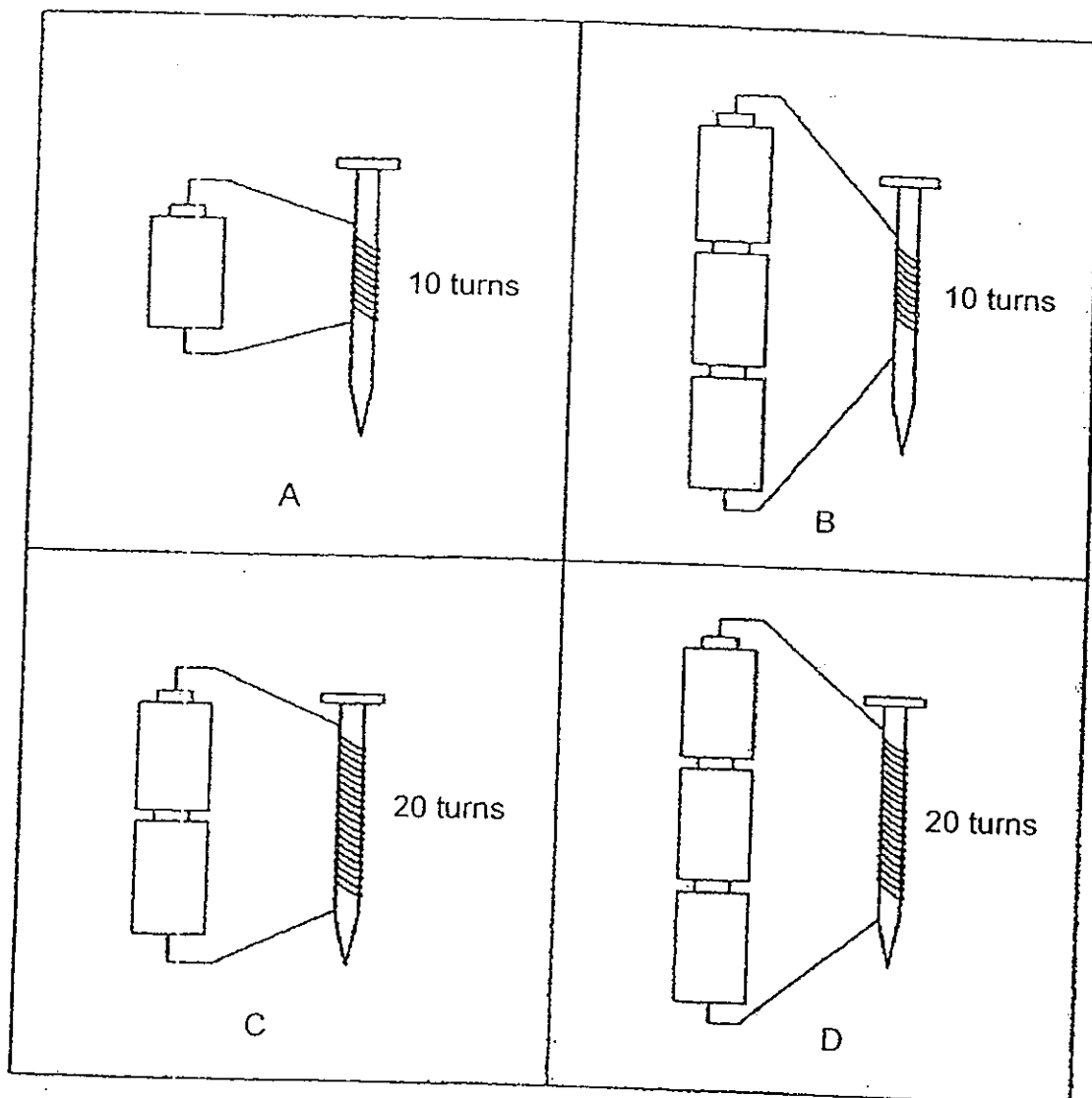
29. Study the diagram of a horseshoe magnet below.



Which part(s) of the horseshoe magnet below can attract the most number of paper clips?

- (1) R only
- (2) P and T only
- (3) Q and S only
- (4) Q, R and S only

30. Harry wants to find out if the number of turns of the coil of wire affects the strength of an electromagnet. He was given the following set-ups.



Which two set-ups should he use in order to conduct a fair test?

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





NANYANG PRIMARY SCHOOL

PRIMARY 4 SCIENCE

SEMESTRAL ASSESSMENT 1  
2013

**BOOKLET B**

Date : 14<sup>th</sup> May 2013

Duration : 1 h 45 min

Name : \_\_\_\_\_ (       )

Class: Primary 4 (       )

Marks Scored:

Booklet A:		60
Booklet B :		40
Total :		100

Any query on marks awarded should be raised by 22<sup>nd</sup> May 2013. We seek your understanding in this matter as any delay in the confirmation of marks will lead to delays in the generation of results.

Parent's signature: .....

**DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.  
FOLLOW ALL INSTRUCTIONS CAREFULLY.**

Booklet B consists of 13 printed pages including this cover page.

**Section B (40 marks)**

Write your answers to questions 31 to 44 in the spaces provided.  
Marks will be deducted for misspelt key words.

31. Cammy described an animal that she had seen at the zoo as follows:

- It has four legs
- It lives on land
- It has hair all over its body
- It produces milk to feed its young.

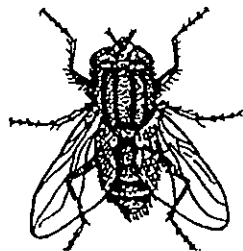
(a) Based on the descriptions above, name any one animal that Cammy might have seen at the zoo. [1]

\_\_\_\_\_

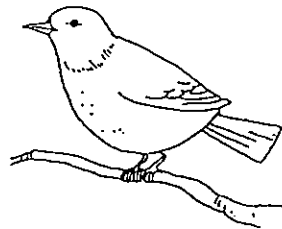
(b) Give another characteristic of the animal that Cammy had seen. [1]

\_\_\_\_\_  
\_\_\_\_\_

32. Compare the following two organisms.



organism A



organism B

Based only on the diagrams above, write down one similarity and one difference between the two animals. [2]


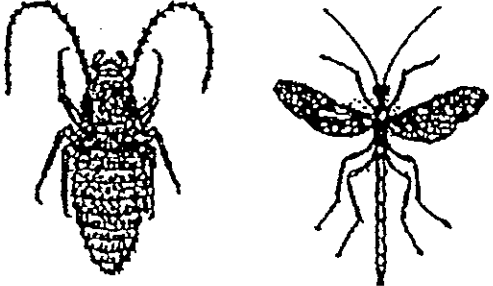
Similarity:

\_\_\_\_\_  
\_\_\_\_\_

Difference:

\_\_\_\_\_  
\_\_\_\_\_

33. Lily classified some animals she found in her garden into two groups, X and Y.

X	Y
	

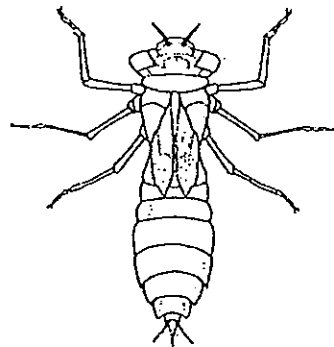
- (a) State the method that Lily had used to classify the animals. [1]

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- (b) Lily then discovered animal P in her garden.



Animal P

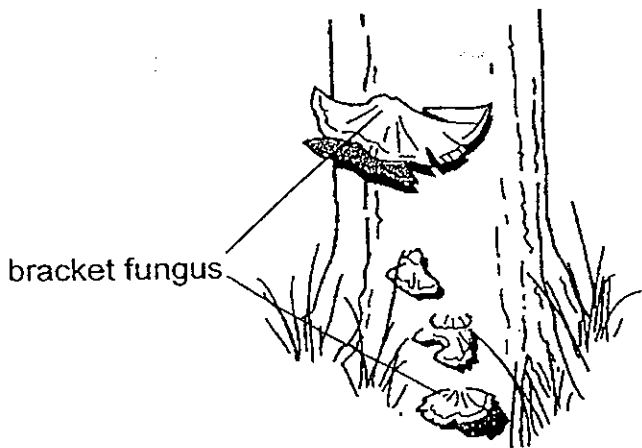
- Where should Lily place Animal P in her classification table?  
Explain your answer using animal P's characteristics. [1]

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34. Study the two living things below carefully.



ladder fern

(a) How do the two living things above reproduce? [1]

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(b) State a difference between the bracket fungus and ladder fern in terms of how they obtain food. [2]

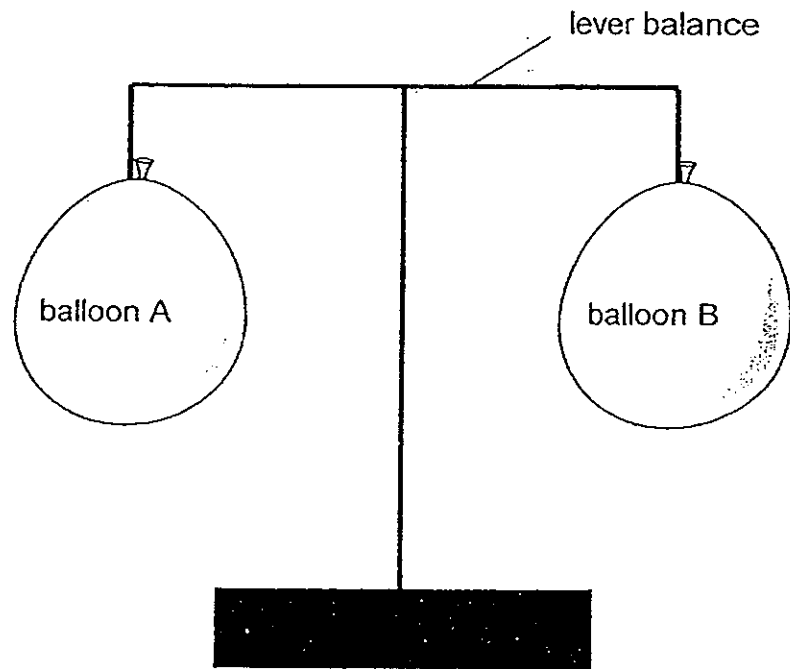
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(c) Give another example of a non-flowering plant. [1]

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35. Janice tied 2 identical balloons, A and B, to each end of a lever balance. She then filled both balloons with air using an air pump such that the two balloons are balanced on the lever balance.



(a) i) If Janice released the air from balloon A, what will she observe happening to the lever balance? [1]

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(a) (ii) Explain your answer in (i). [1]

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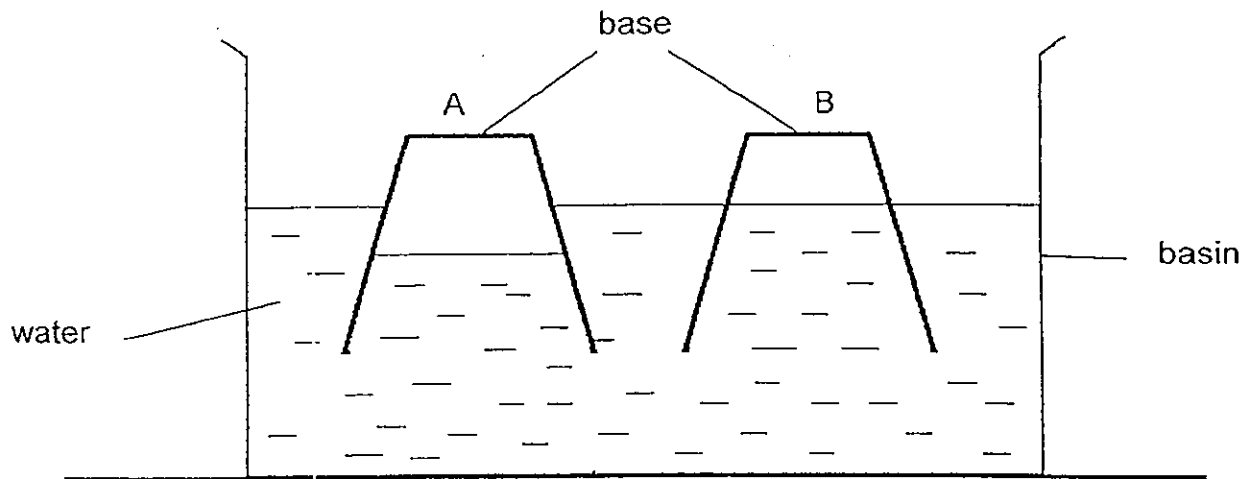
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(b) What property of air can be concluded from Janice's experiment? [1]

---

36. Jerry inverted two identical plastic cups, A and B, into a basin of water as shown in the diagram below. One of the cups had a small hole at the base.



- (i) Based on the result shown above, which cup most likely had a hole at its base? [1]

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- (ii) Explain your answer in (i). [2]

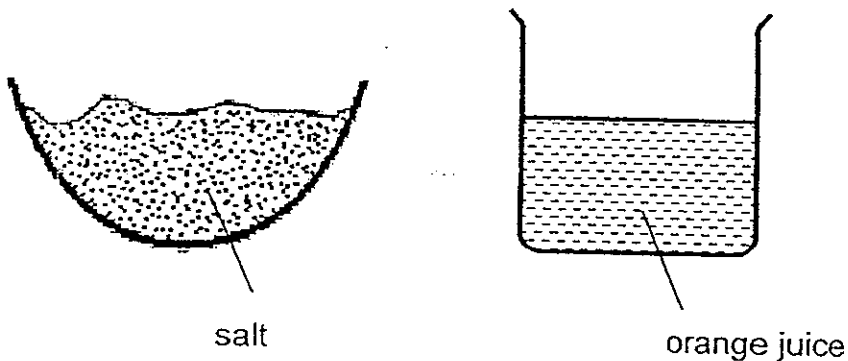
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37. Observe the diagrams below.



(a) i) What states of matter are the salt and the orange juice in? [1]

Salt: \_\_\_\_\_

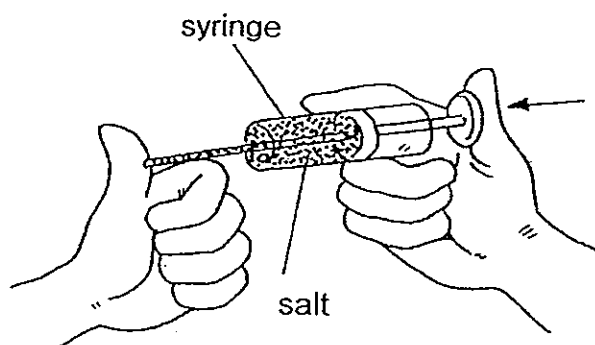
Orange juice: \_\_\_\_\_

(a) ii) State a similar property of the two matters that are demonstrated in the diagram above. [1]

\_\_\_\_\_  
\_\_\_\_\_

(b) Tasha then filled a syringe with salt and tried to push the plunger in as shown in the diagram below.

She managed to push the plunger in slightly for a few millimetres.

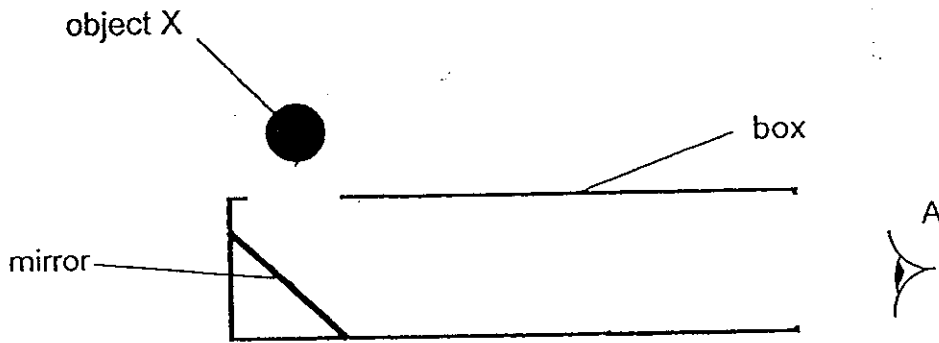


Explain why Tasha was able to push the plunger in slightly. [2]

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



38. Julius cut a hole on two sides of a box. He then placed object X near one of the holes and a mirror below it, as shown below.



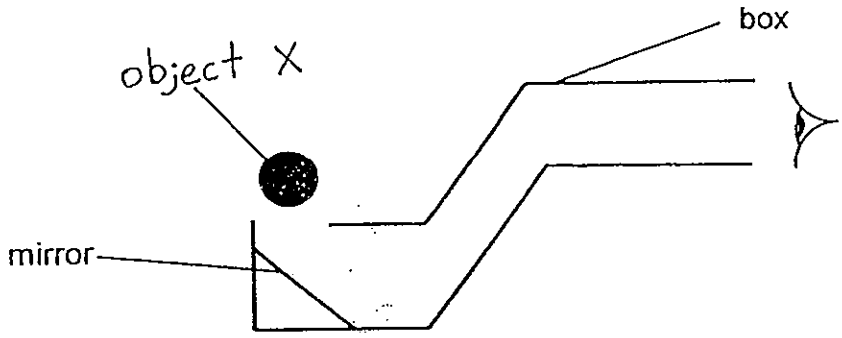
- (a) Draw light rays from the object onto the mirror such that it can be seen from point A. [1]
- (b) Explain how the mirror helps the person to see the object. [1]

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The box was then modified as shown below.



- (c) Would the person be able to see object X? Explain your answer. [2]

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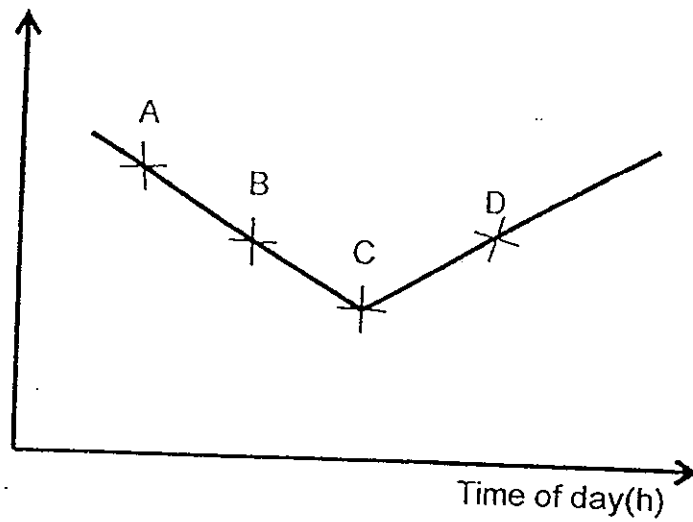


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39. Siming measured the length of the shadow of a stick cast on the ground from 6.00 a.m. to 6.00 p.m. She then plotted a graph as shown below.



- (a) i) Which point of the graph, A, B, C or D, best represents 12 noon. [1]

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- (a) ii) Explain your answer for part (i). [1]

[1]

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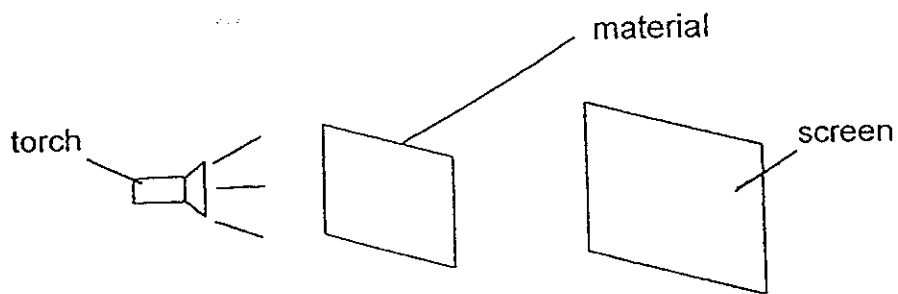
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- (b) Explain how the shadow of the stick is formed on the ground. [1]

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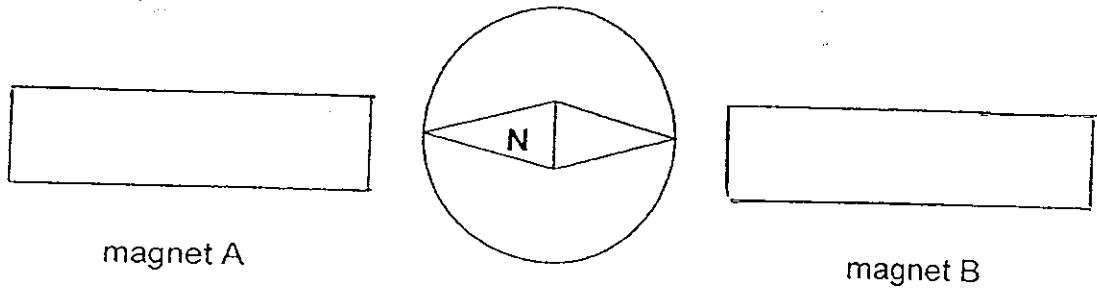
40. Rosy set up an experiment to test the ability of light to pass through different materials. She placed the materials one at a time between a torch and a screen as shown below.



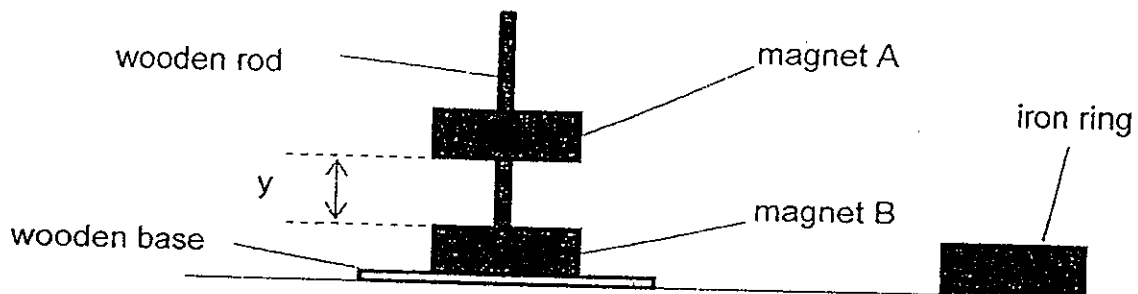
In the table below, put a tick (✓) next to the variables that must remain the same in order for Rosy to conduct a fair test. [3]

The type of torch used.	
The material used for the experiment.	
The location where the experiment is conducted.	
The distance between the material and the screen.	
The thickness of the material used for the experiment.	
The distance between the material and the light source.	

41. The diagram below shows a compass placed between two strong bar magnets, A and B. Label the poles of the two bar magnets [2]



42. Sam placed two identical ring magnets, A and B, through a wooden rod as shown in the diagram below. He observed that magnets A and B were at a distance,  $y$ , from each other.



- (a) Explain why there is a distance  $y$ , between magnets A and B? [1]

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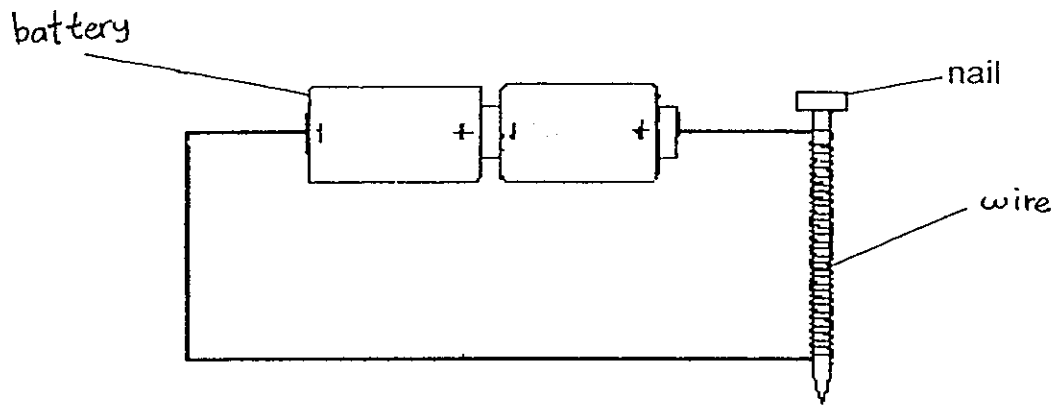
- (b) What will happen to distance  $y$ , when an iron ring, as shown above, is placed on top of magnet A? [1]

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43. Sammy made an electromagnet as shown below.



Based on the arrangement above, the electromagnet could pick up 10 paper clips.

(a) State 2 changes that Sammy could do to the electromagnet so that it could pick up more paper clips. [2]

(i) \_\_\_\_\_  
\_\_\_\_\_

(ii) \_\_\_\_\_  
\_\_\_\_\_

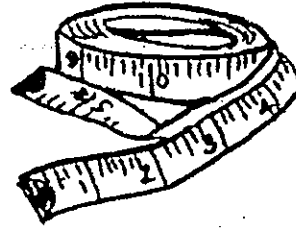
(b) State the materials that <sup>the nail</sup> object X should be made of in order for it to be an electromagnet. [1]

\_\_\_\_\_  
\_\_\_\_\_

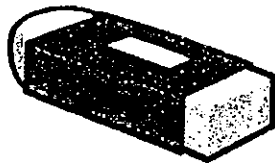
44. The objects shown below are made of different materials.



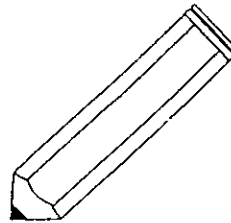
paper clip



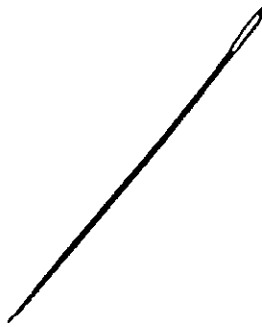
plastic measuring tape



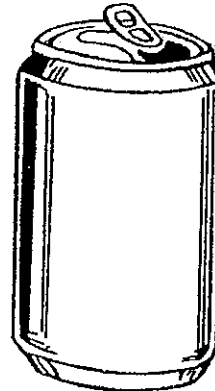
eraser



pencil



iron needle



aluminium drink can

Classify the objects shown above in the table below.

[3]

Magnetic material	Non-magnetic material

~End of Paper~



# ANSWER SHEET

**EXAM PAPER 2013**

**SCHOOL : NANYANG**

**SUBJECT : PRIMARY 4 SCIENCE**

**TERM : SA1**

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

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

**31)a)Tiger.**

**b)It gives birth to its young alive.**

**32)Similarity : Both organisms have wings.**

**Difference : Organism A has six legs whereas organism B has two legs.**

**33)a)She classified them according to how many legs they have.**

**b)She should place Animal P in Group Y. This animal has six legs, like the animals in Group Y.**

**34)a)They reproduce by spores.**

**b)The bracket fungus obtains food from its surroundings, whereas the ladder fern conducts photosynthesis to make its own food.**

**c)Bird's nest fern.**

**35)a)i)The side of the lever balance with Balloon B tied to it would tilt downwards.**

**ii)If Balloon A has no air left inside it, Balloon B would be heavier, so the side of the lever balance with Balloon B tied to it would tilt downwards.**

**b)Air has mass.**



36)i)Cup B.

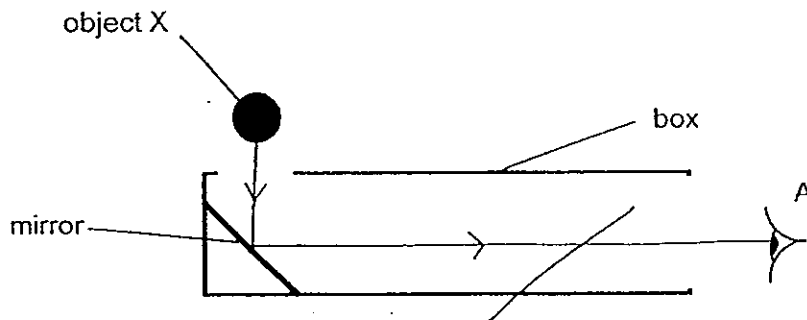
ii)The air is able to escape through the hole, hence water can flow in to occupy its space.

37)a)i)Salt : Solid      Orange juice : Liquid

ii)Both occupy space.

b)There is air between the salt, so air can be compressed.

38)a)



b)The mirror reflects the light from the object into the person's eye, allowing the person to see the object.

c)No. The light reflected from the mirror could not reach his eyes because light travels in straight lines.

39)a)i)C.

ii)At noon, the sun will be directly above, so the shadow of the stick will be shortest at that time.

b)The stick is an opaque object, so the light from the sun cannot pass through, creating a dark space behind it.

40) ✓

✓

✓

✓

✓

41)N    S            N    S

42)a)The like pole of the two magnets are facing each other, so the magnets are repelling each other.

b)It will become shorter.

- 43)a)i)He could increase the number of coils around the nail.  
ii)He could increase the number of batteries used.  
b)It should be made iron, steel, cobalt or nickel.

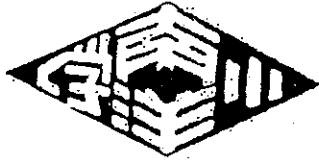
44)Magnetic material

Paper clip  
Iron needle

Non-magnetic material

plastic measuring tape  
eraser  
pencil  
aluminium drink can





NANYANG PRIMARY SCHOOL

PRIMARY FOUR SCIENCE

SEMESTRAL ASSESSMENT 2

2013

**BOOKLET A**

Date : 28 October 2013

Duration : 1 h 45 min

Name : \_\_\_\_\_ ( )

Class: Primary 4. ( )

**DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.  
FOLLOW ALL INSTRUCTIONS CAREFULLY.**

**Booklet A consists of 17 printed pages including this cover page.**