

TAO NAN SCHOOL

PRIMARY 4 SCIENCE MID-YEAR EXAMINATION – 2010

Name: _____ () Date: 12 May 2010

Class: P4 _____

Duration: 1h 30min

BOOKLET A

INSTRUCTIONS TO CANDIDATES

Do not open this booklet until you are told to do so.

Follow all instructions carefully.

Answer all questions.

	Score	Marks
Section A		60
Section B		40
Total		100

Parent's signature: _____

Section A (30 x 2 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 two of the following are examples of cycles?

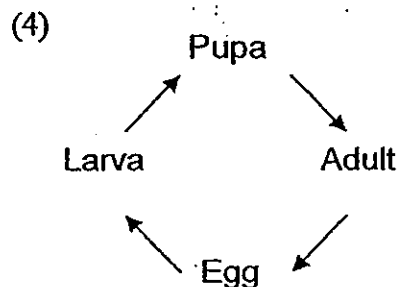
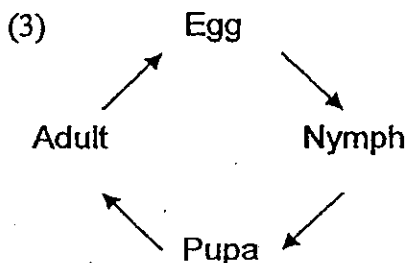
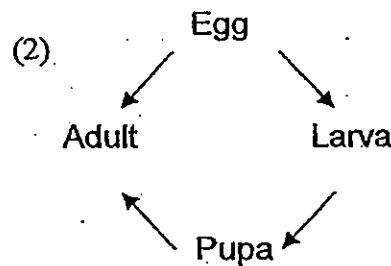
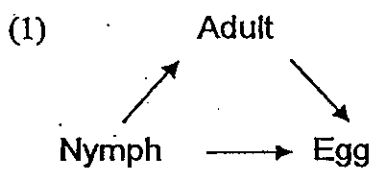
- A: Clouds moving in the sky
- B: Lion chasing a zebra for food
- C: Four seasons in a year
- D: Day and night

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

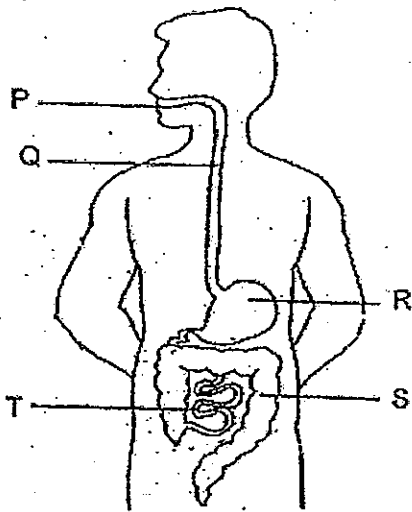
2. Amanda bought a fruit from a market. She described to her friend that it was smelly and rough but tasty. How many senses did she use in order to describe the fruit?

- (1) One
- (2) Two
- (3) Three
- (4) Four

3. Which of the following shows the correct order of stages in the life cycle of an insect?



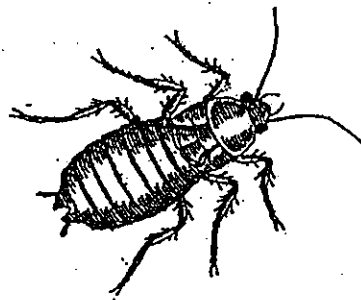
4. The diagram below shows the human digestive system.



Which of the following shows the parts where digestion starts and where digestion is completed?

	Digestion starts	Digestion is completed
(1)	P	T
(2)	Q	S
(3)	R	S
(4)	R	T

5. The pictures below show the young of two animals, X and Y.



X



Y

Based on the pictures, in what way are they similar to each other at this stage of their life cycle?

- (1) They cannot fly.
- (2) They eat similar food.
- (3) They moult a few times.
- (4) They have segmented bodies.

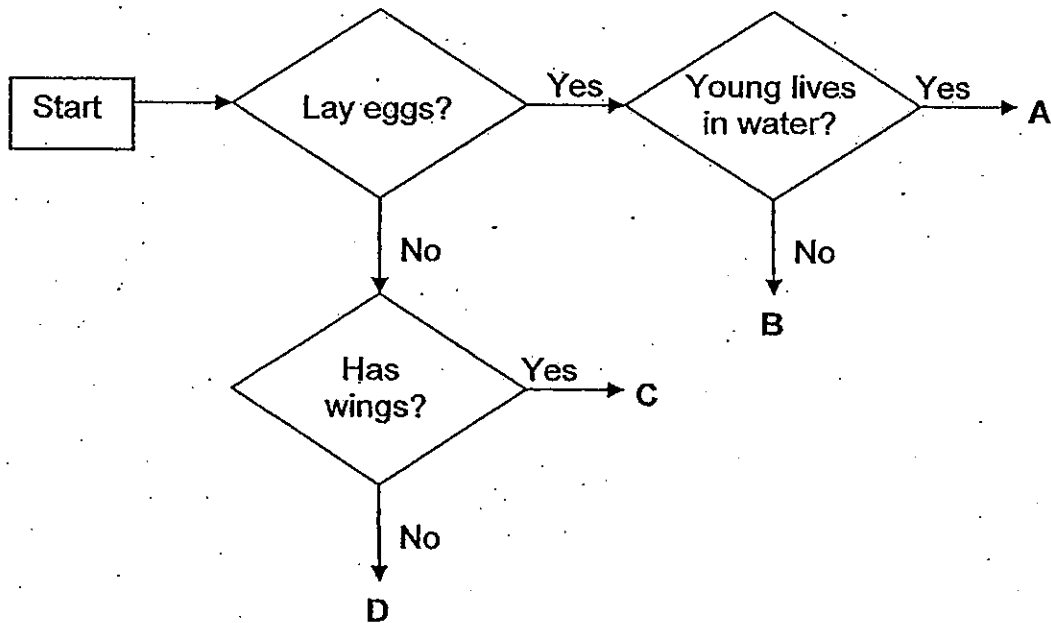
6. The table below shows some information about four organisms A, B, C and D?

	A	B	C	D
Can it make its own food?	No	Yes	No	Yes
Can it move freely from place to place?	No	No	Yes	No
Does it reproduce by spores?	Yes	Yes	Yes	No

Which organism, A, B, C or D, best represents 'mushroom'?

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

7. Study the flow chart below carefully. A, B, C and D represent four organisms.



Which organism, A, B, C or D, represents a toad?

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

8. What is the function of a seed coat and seed leaves?

	Function of a Seed Coat	Function of Seed Leaves
(1)	To protect the seed.	To provide food for the germinating seed.
(2)	To provide food for the germinating seed.	To protect the seed.
(3)	To grow into a new plant.	To make food.
(4)	To keep the seed warm.	To grow into a new plant.

9. Which of the following about saliva are true?

- A: Saliva is a liquid.
- B: Saliva helps to digest food.
- C: Saliva makes food easier to swallow.

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

10. Which of the following plants develop from seeds?

- (1) Grass
- (2) Jew's ear
- (3) Mushroom
- (4) Bird's nest fern

11. Which function of the stem of a banana tree is shown by the picture below?



- (1) It stores food for the plant.
- (2) It transports water and food.
- (3) It helps the plant to reproduce.
- (4) It supports the leaves and fruits of the tree.

12. Brian, Jamie and Eunice made a statement each.

Brian : A bird flies away when a dog charges at it .

Jamie : A mimosa plant closes its leaves slowly whenever I touch it.

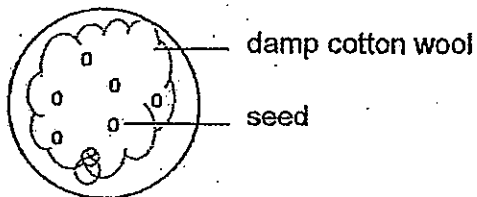
Eunice : We must run for shelter now as it has started to rain!

What do the statements show about living things?

- (1) They fly away from danger.
- (2) They need shelter to survive.
- (3) They respond to changes around them.
- (4) They move to ensure the survival of their own kind.

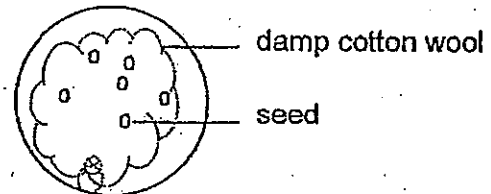
13. In which of the following set-ups, A, B, C and D, would the seeds germinate?

put in light



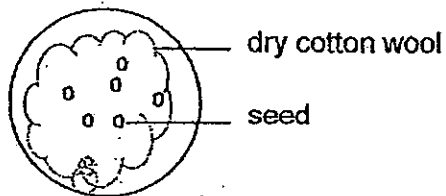
Set-up A

put in the dark



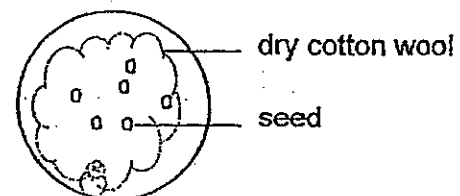
Set-up B

put in light



Set-up C

put in the dark



Set-up D

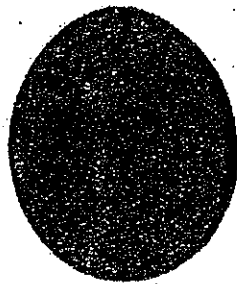
- (1) A and B only
- (2) A and D only
- (3) B and C only
- (4) C and D only

14. Which function of the skeletal system is shown below?

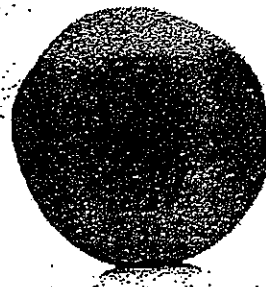


- (1) It supports the body.
- (2) It protects internal organs.
- (3) It gives the body its shape.
- (4) It works with the muscular system to enable us to move.

15. Based on the picture and the information given below, which of the following is true about the egg and ball of plasticine?



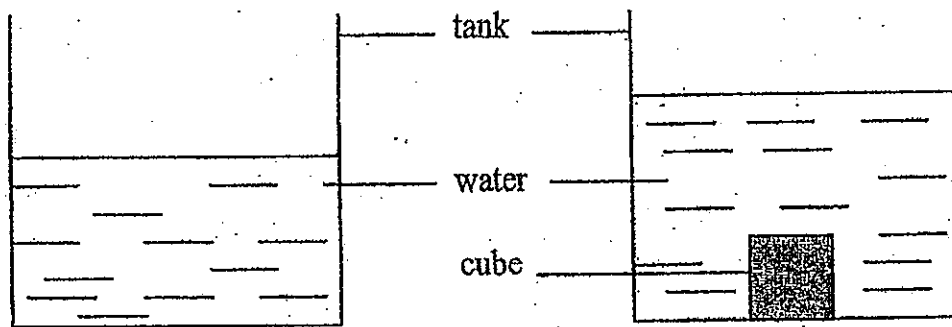
Egg
(50cm³)



Ball of plasticine
(50cm³)

- (1) Both are round.
- (2) Both are made of the same material.
- (3) Both occupy the same amount of space.
- (4) Both have the same amount of matter in them.

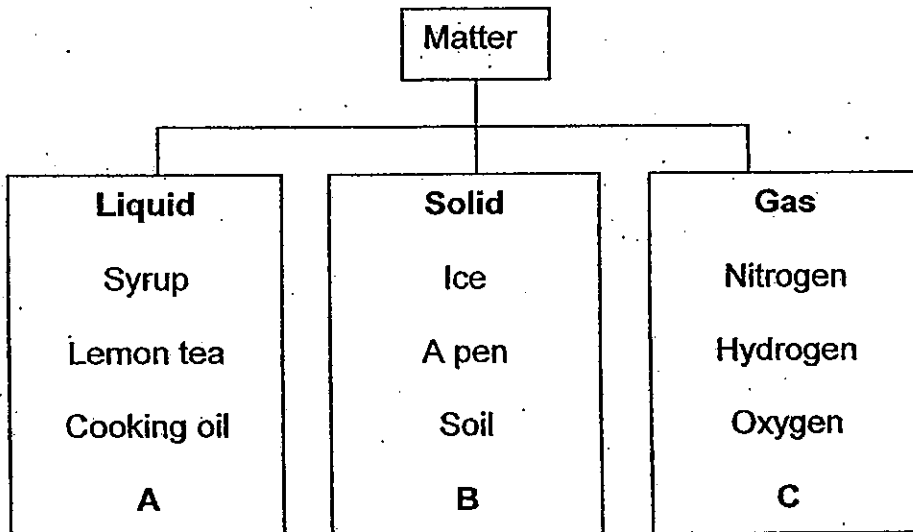
16. Jenny filled a tank with water. When she dropped a cube into the tank, she observed that the water level rose as shown in the diagram below.



What causes the water level to rise?

- (1) The cube has the same mass as the water.
- (2) The cube increases the volume of the water.
- (3) The cube sinks when it was dropped into the water.
- (4) The cube takes up the space previously occupied by the water.

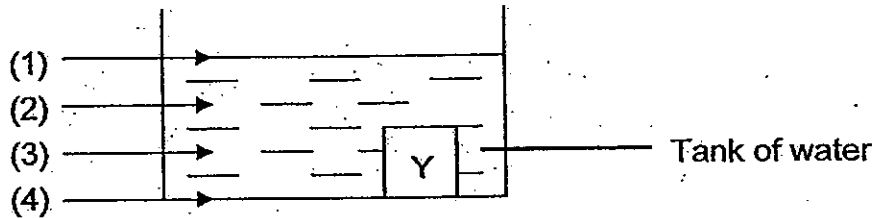
17. Study the classification chart below. A, B and C represent three examples of matter.



Which of the following are represented by A, B and C?

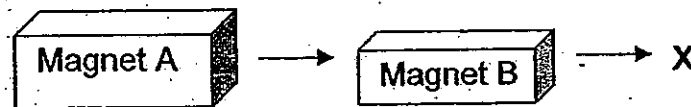
	A	B	C
(1)	Carbon dioxide	Ruler	Smoke
(2)	Raindrops	Powder	Carbon dioxide
(3)	Soya bean milk	Honey	Fume
(4)	Powder	Sponge	Steam

18. Siti has two solid cubes, X and Y, of different volumes. The volume of X is 10cm^3 and the volume of Y is 40cm^3 . They are made of the same material. She accidentally dropped both solid cubes into a tank of water. Y sank to the position as shown in the diagram below.



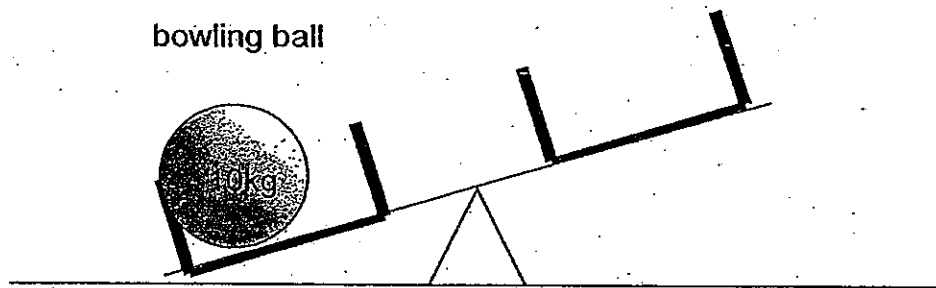
At which position would the base of the solid cube X be after it was dropped into the tank of water?

19. When Magnet A was brought near to a Magnet B, Magnet B moved towards point X as shown below. What is the reason for this?



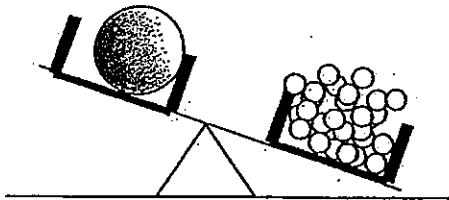
- (1) The mass of Magnet A is greater than that of Magnet B.
- (2) The volume of Magnet A is greater than that of Magnet B.
- (3) The like poles of Magnet A and Magnet B are facing each other.
- (4) The unlike poles of Magnet A and Magnet B are facing each other.

20. Paul put a 10kg bowling ball on a lever balance as shown.

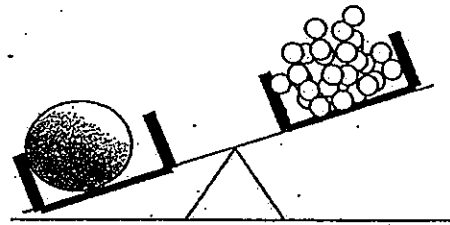


If he put 10kg of tennis balls on the other side of the lever balance, which of the following would show the final position of the lever balance?

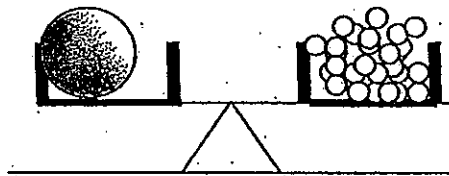
(1)



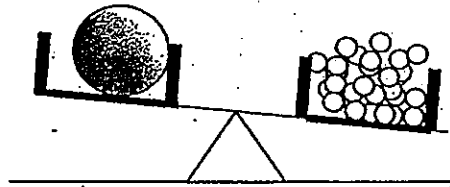
(2)



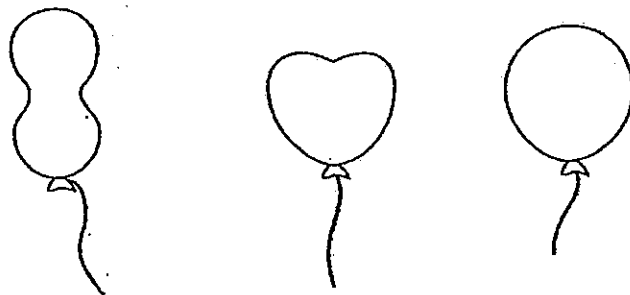
(3)



(4)



21. The same volume of air is pumped into three balloons as shown below. Which property of air does it show?

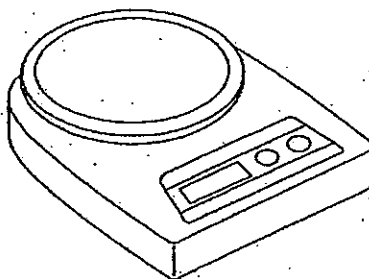


- (1) Air has mass.
- (2) Air can be compressed.
- (3) Air has no definite shapes.
- (4) Air has no definite volume.

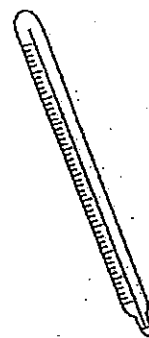
22. Which of the following can be used to measure the mass of an orange?



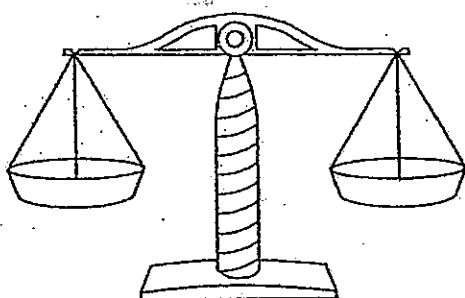
Measuring cylinder



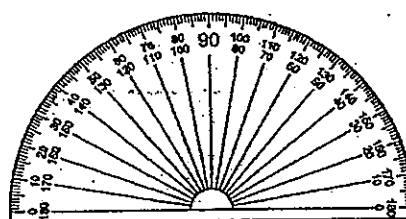
Electronic balance



Thermometer



Lever balance



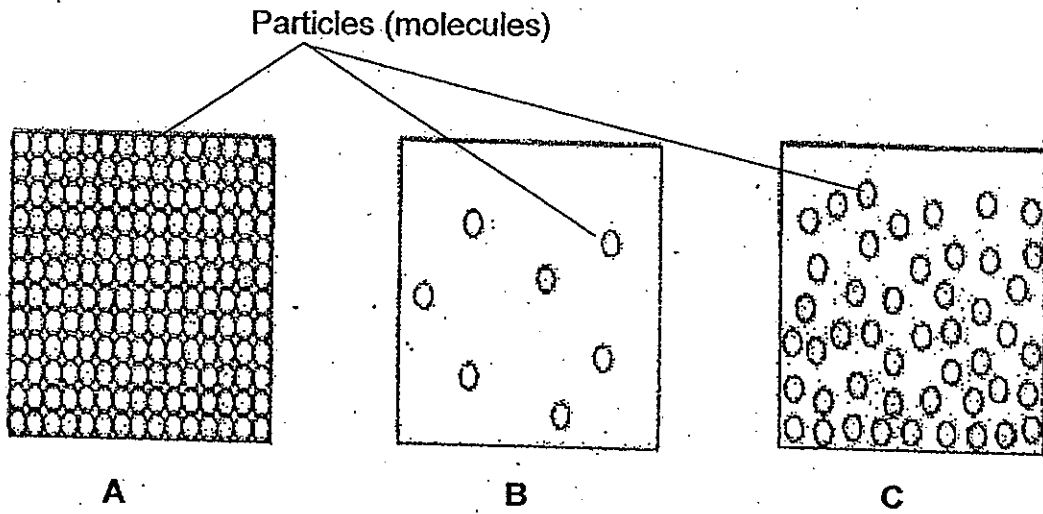
Protractor

	Measuring cylinder	Electronic balance	Thermometer	Lever balance	Protractor
(1)	✓				✓
(2)		✓		✓	
(3)	✓		✓		✓
(4)	✓	✓		✓	

23. Which of the following is the main reason why raincoats are made of plastic?

- (1) It is soft.
- (2) It is flexible.
- (3) It is waterproof.
- (4) It is transparent.

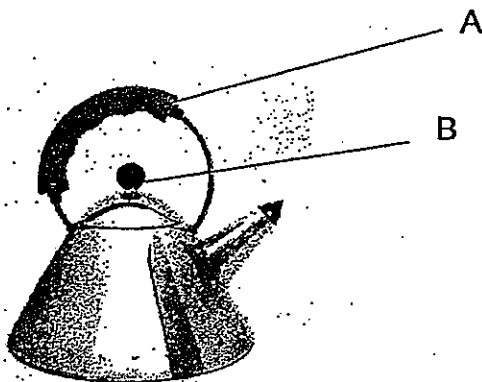
24. The diagrams, A, B and C, represent the three states of matter.



What state of matter are A, B and C?

	A	B	C
(1)	Solid	Gas	Liquid
(2)	Liquid	Gas	Solid
(3)	Solid	Liquid	Gas
(4)	Gas	Liquid	Solid

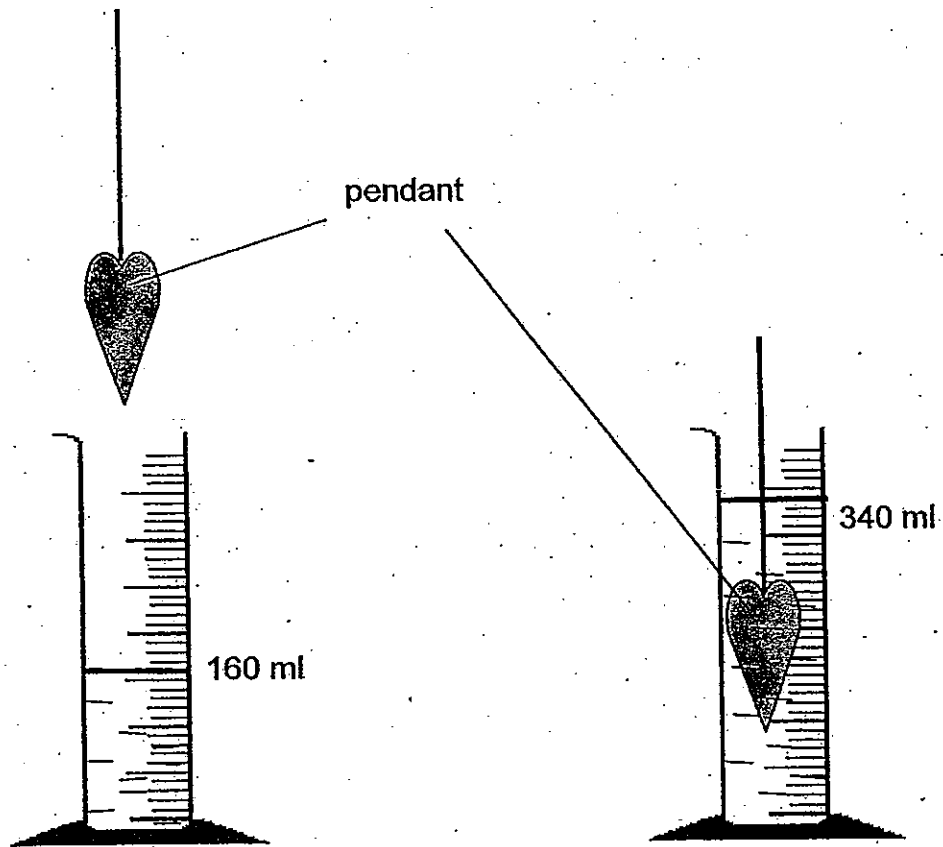
25. The diagram below shows a kettle.



Which property of plastic makes it suitable for making the parts, A and B?

- (1) It is soft.
- (2) It is flexible.
- (3) It is a poor conductor of heat.
- (4) It is a poor conductor of electricity.

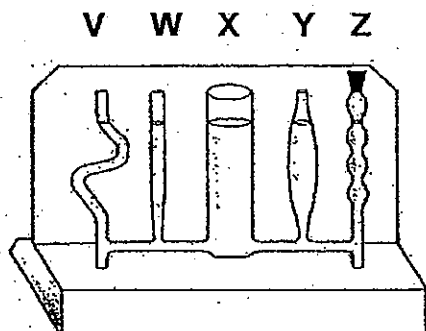
26. A pendant is dropped into a cylinder of water as shown below.



What is the volume of the pendant?

- (1) 160 cm³
- (2) 180 cm³
- (3) 340 cm³
- (4) 500 cm³

27. John poured 500 ml of water into a communicating vessel and put a black stopper at tube Z as shown in the diagram below. John then sucked 20 ml of water from tube X using a straw.



What is the final water level in the tubes, V, W, X, Y and Z?

	V	W	X	Y	Z
(1)	decreased	Decreased	decreased	decreased	decreased
(2)	increased	Increased	decreased	increased	unchanged
(3)	unchanged	unchanged	decreased	unchanged	unchanged
(4)	decreased	Decreased	decreased	decreased	unchanged

28. Peter has 25g of plasticine. He did the following activity.

Step 1: He lowered the plasticine into a cylinder containing 50ml of water.

Step 2: He recorded the changed water level.

Step 3: He calculated the volume of the plasticine.

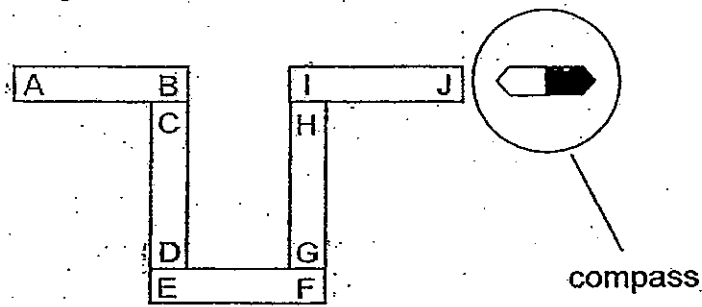
Step 3: He removed the plasticine and moulded it into another shape.

He repeated the activity three times.

What was Peter trying to find out?

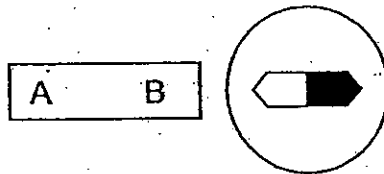
- (1) To find out if the volume of the plasticine affects its mass.
- (2) To find out if the mass of the plasticine affects its volume.
- (3) To find out if the volume of the plasticine affects its shape.
- (4) To find out if the shape of the plasticine affects its volume.

29. Five bar magnets with their ends marked A to J can be arranged such that one magnet attracts another magnet as shown below.

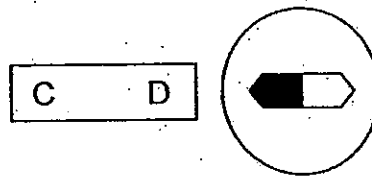


Which of the following shows the correct arrangement of the magnet and the compass?

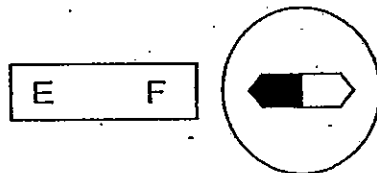
(1)



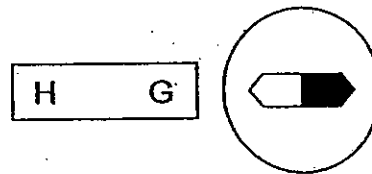
(2)



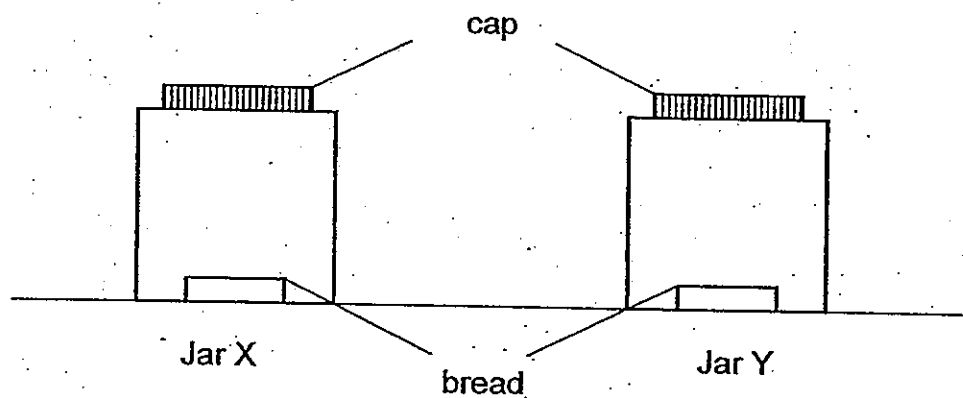
(3)



(4)



30. Jim wanted to find out if the presence of water affects the growth of mould on bread. He left two pieces of bread in two identical jars, X and Y, as shown below.



A few drops of water were added to the bread in Jar X only. Then Jar X and Jar Y were capped. Which of the following variables must Jim keep the same to conduct a fair test?

- A: Temperature of the surroundings
- B: Material the jars are made of
- C: The type of bread
- D: The size of the bread

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

— End of Booklet A —

TAO NAN SCHOOL

PRIMARY 4 SCIENCE MID-YEAR EXAMINATION – 2010

Name: _____ (_____) Date: 12 May 2010

Class: P4 _____ Duration: 1h 30min

BOOKLET B

INSTRUCTIONS TO CANDIDATES

Do not open this booklet until you are told to do so.

Follow all instructions carefully.

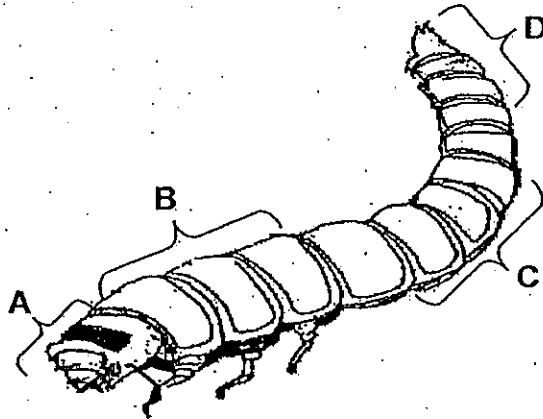
Answer all questions.

	Score	Marks
Section B		40

Section B (40 marks)

For the questions, 31 to 44, write your answers in the spaces provided.

31. The diagram below shows a mealworm.



(a) Which of the following parts, A, B, C or D, is the thorax of the mealworm? [1]

(b) Explain your answer in (a). [1]

32. Study the classification table below.

Animals	
Group P	Group Q
Mosquito	Cockroach
Butterfly	Grasshopper
Flea	Cricket

(a) Give a suitable heading for Group P and Group Q. [2]

Group P: _____

Group Q: _____

(b) In which group would you put the following? [1]

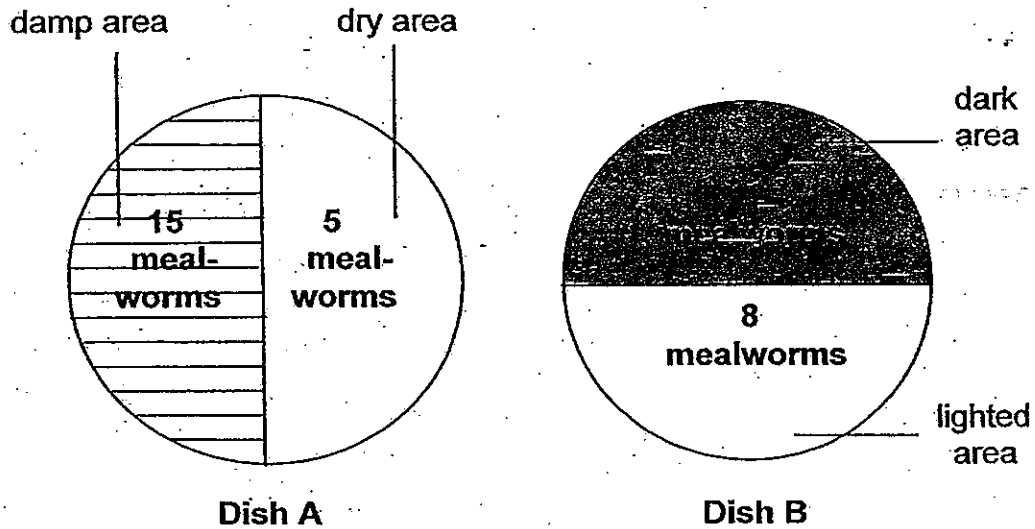
A beetle: _____

A dragonfly: _____

33. Charmaine wanted to find out if mealworms prefer damp areas or dry areas. She put 20 mealworms at the centre of Dish A. After 10 minutes, she found 15 mealworms at the damp area and 5 mealworms at the dry area.

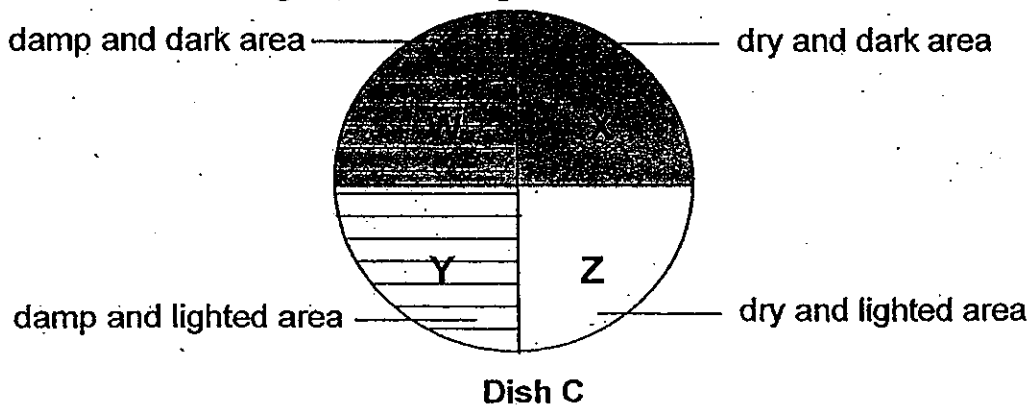
Charmaine repeated the activity, with Dish B, by exposing half of the dish to light and covering the other half of the dish with a black cloth.

She recorded her findings in the diagram below.



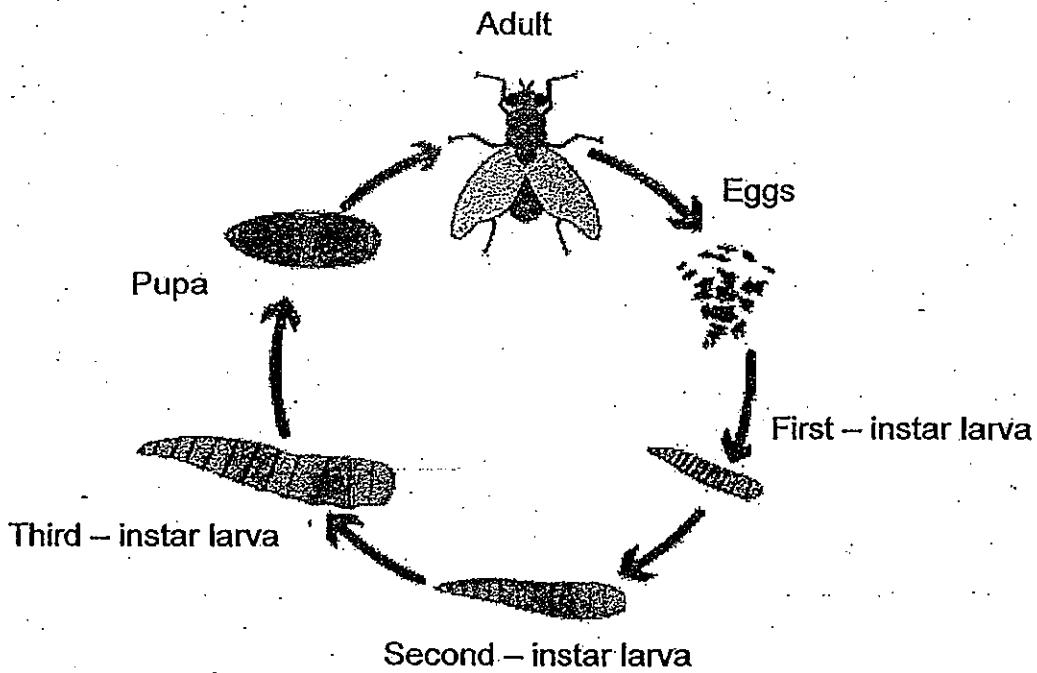
- (a) From the above findings, what are the two conditions which mealworms prefer? [2]

Charmaine then set up Dish C and placed 20 rhinoceros beetle larvae at the centre of Dish C which was divided into 4 equal parts, W, X, Y and Z, with the conditions given in the diagram below.



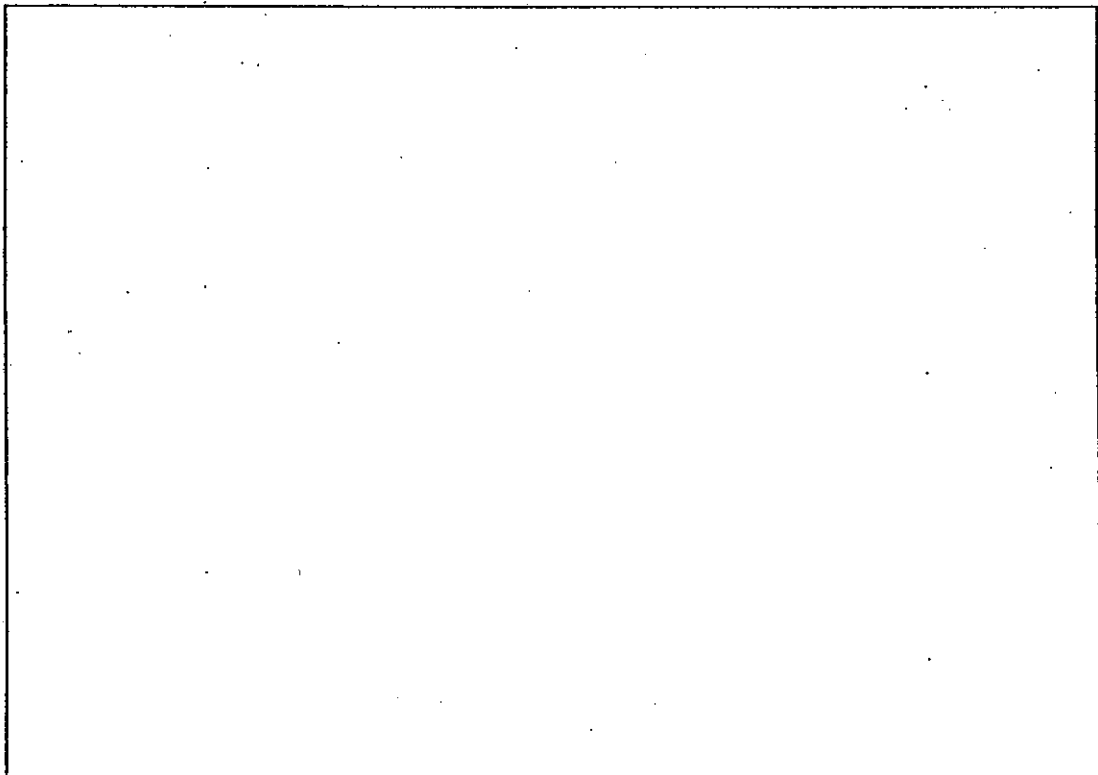
- (b) Which of the parts, W, X, Y or Z, would you find most rhinoceros beetle larvae after 10 minutes? Explain why. [2]

34. The diagram below shows the development of a housefly.

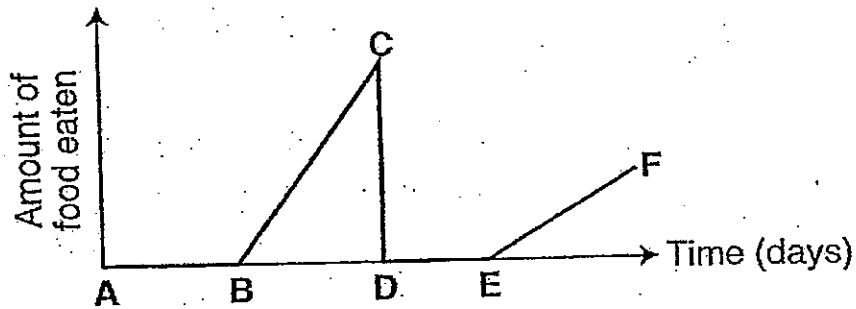


(a) How many stages are there in the life cycle of a housefly? [1]

(b) Draw and label the stages in the life cycle of a bee in the box below. [2]



- (c) The graph below shows the amount of food eaten by a butterfly through the different stages of its life cycle represented by AB, BC, DE and EF.

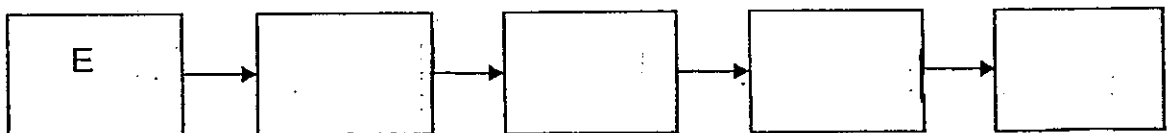


Which part of the graph, BC, CD, DE or EF, represents the pupa stage of the butterfly? Explain why. [2]

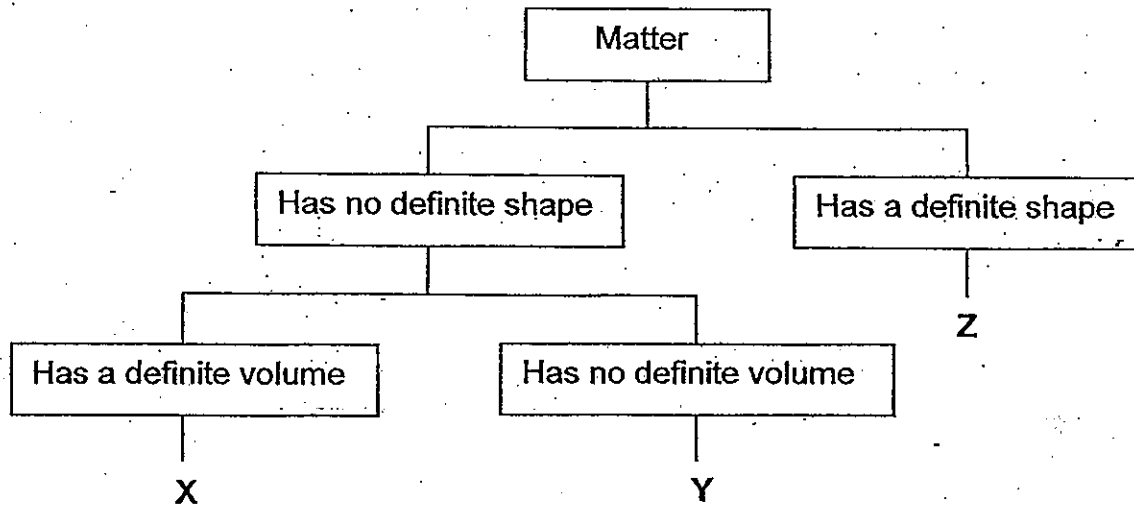
35. The following statements, A to E, describe the germination of a seed. They are **not** in the correct order.

- A: The root appears.
- B: The seed leaves drop off as the seedling can make its own food.
- C: The shoot appears.
- D: The leaves develop and the seedling starts to make food.
- E: The seed is put into the soil.

Complete the order of germination of a seed with the letters A, B, C and D. [2]



36. The classification chart below shows the properties of X, Y and Z, which represent the three states of matter.



- a) Based on the classification chart above, identify the three states of matter, solid, liquid and gas represented by letter X, Y and Z. [1]

X: _____

Y: _____

Z: _____

- b) Write down a property that X and Y share. [1]

37. Classify the following into matter and non-matter. [3]

chair	ice	sound	shadow	steam	light
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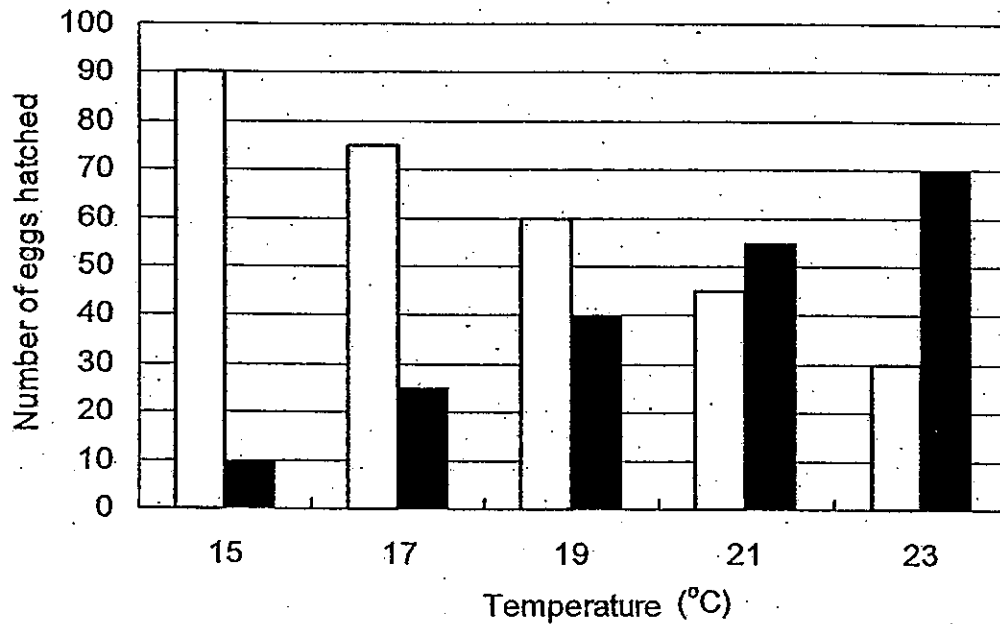
Matter	Non-matter

38. Ali studied the eggs of a certain kind of animal. He wanted to find out how temperature of its surroundings affects whether the eggs would hatch into male or female animals. His results are shown below.

Key:

□ Number of eggs hatched into female animals

■ Number of eggs hatched into male animals



- (a) Based on Ali's results, what is the relationship between the number of eggs which are hatched into male animals and the temperature of the surroundings? [1]
-

- (b) A farmer would like to have equal number of male and female when he hatch the eggs of this animal in an incubator. Based on Ali's results, suggest a temperature which he could do so. [1]
-

39. For each of the statements below, write True or False in the boxes provided.

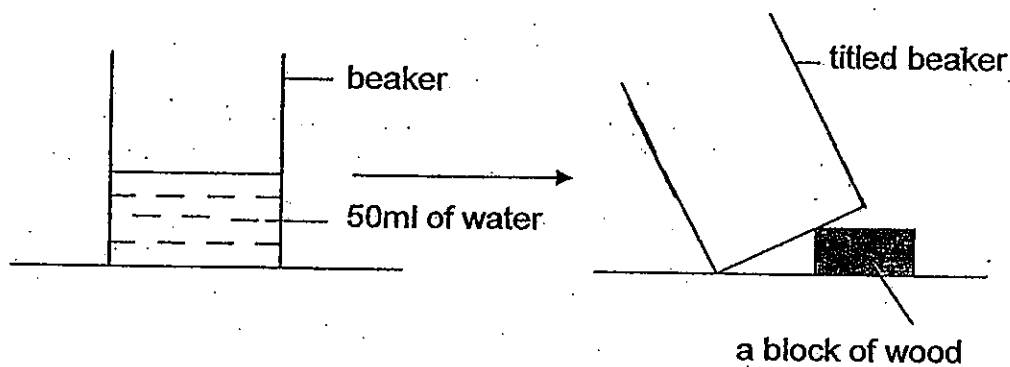
[2]

(a) Sand and rice are liquids because they take the shape of their containers.	
Sponges are gases because they can be compressed.	
All metals are magnetic.	
Iron and steel can be magnetised using the 'stroking' method.	

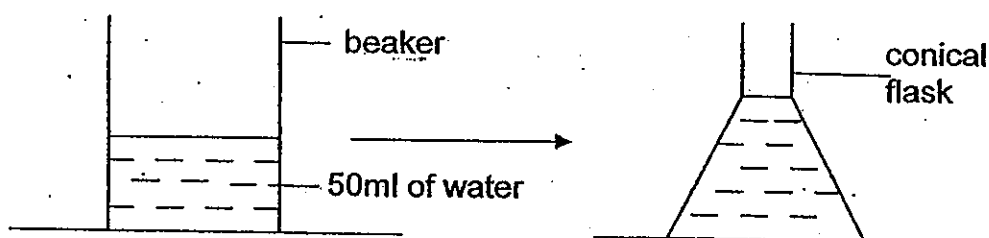
40. Jenny fills a beaker with 50ml of water and she tilts the beaker to one side.

(a) Draw the water level in the tilted beaker below.

[1]



(b) Next, Jenny pours all the water from the beaker into a conical flask.



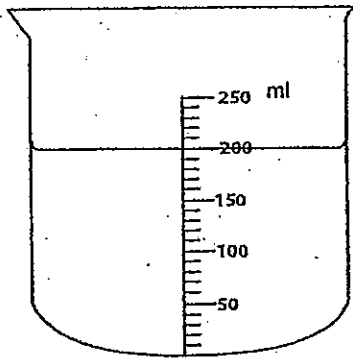
(i) Which property of a liquid does the above show?

[1]

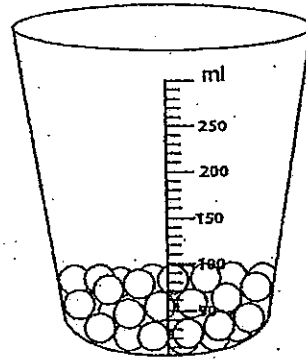
(ii) What is the volume of the water in the conical flask?

[1]

41. Sam fills a beaker with 200 ml of water and then puts all his marbles in a cup as shown below.



beaker

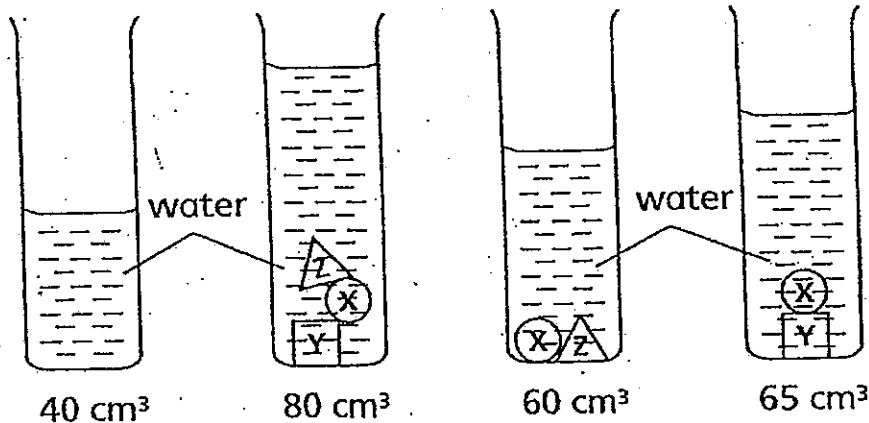


cup

- (a) He decides to pour all the water in the beaker into the cup. What is the new water level in the cup? [1]

- (b) Explain your answer in (a). [1]

42. Study the diagram below. The same volume of water is poured into each cylinder.



Write down the volume of X, Y and Z

[3]

X: _____

Y: _____

Z: _____

43. Tommy holds an inverted plastic cup just above the water as shown in Diagram A.

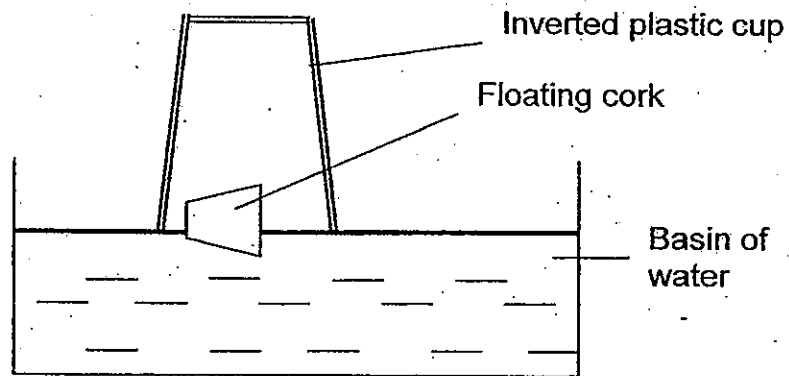


Diagram A

He then pushed the inverted plastic cup fully into the water as shown in Diagram B.

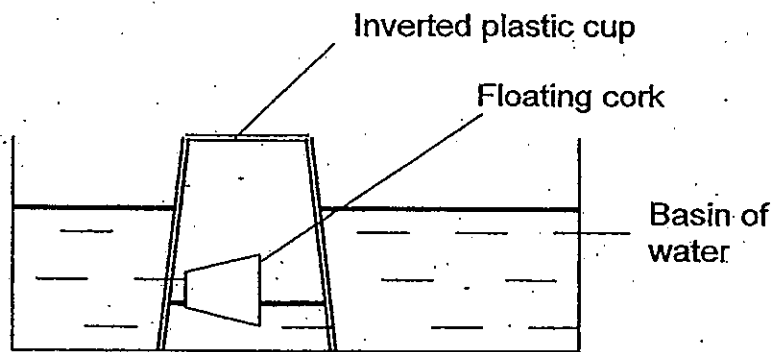
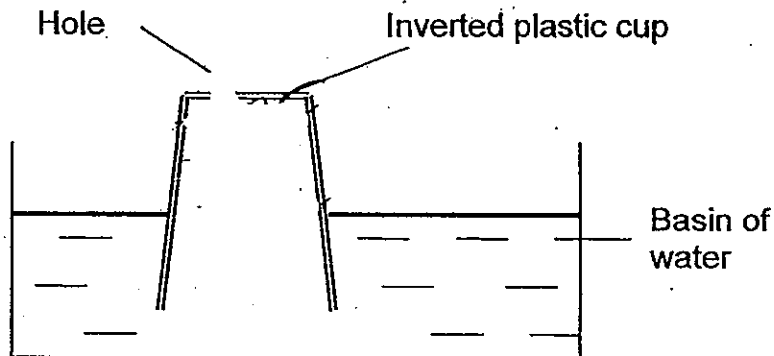


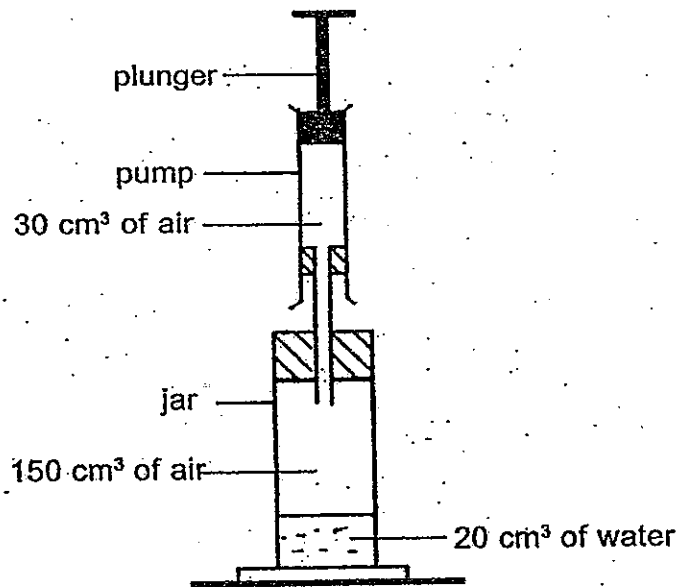
Diagram B

- (a) Explain why there is some water inside the inverted plastic cup? [2]

- (b) Tommy then pricks a hole at the bottom of the inverted plastic cup as shown below. What would happen to the water and the floating cork inside the inverted plastic cup? Draw the water level and floating cork in the diagram below. [1]



44. A pump is attached to a sealed glass jar as shown in the diagram below. The pump is filled with air.



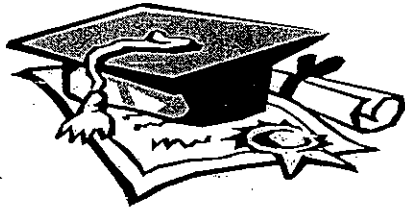
- (a) What is the volume of the air in the jar? [1]

- (b) The plunger is pushed in all the way. What is the final volume of the air in the jar? Explain why. [2]

- (c) What is the volume of the water in the jar at the end? [1]

End of paper



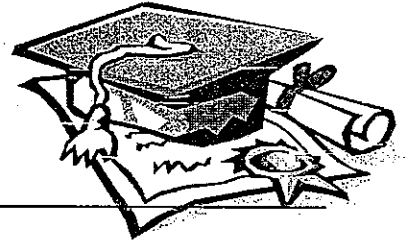


ANSWER SHEET

EXAM PAPER 2010

**SCHOOL : TAO NAN PRIMARY
SUBJECT : PRIMARY 4 SCIENCE**

TERM : SA1



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

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

31)a)B

b)The through is in the middle of the insect. The legs are also at the thorax.

32a)P: Four-stage life cycle Q: Three-stage life cycle

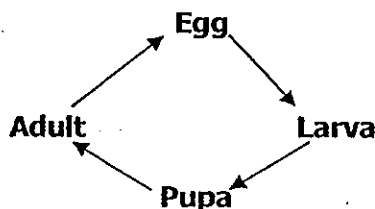
b)A beetle: Group P A dragonfly: Group Q

33)a)They like damp and dark areas.

b)W. The rhinoceros beetle larvae is mealworms and it likes lamp and dark areas.

34)a)Four.

b).



c)DE. The pupa does not eat at all.

35)E-->A->C->D->B

36)a)X: Liquid Y: Gas Z: Solid

b)Both of them have no definite shape.

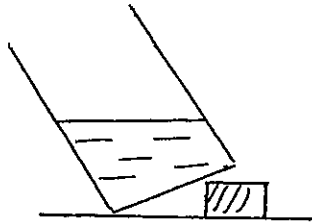
37)Matter
chain
ice
steam

Non-matter
sound
shadow
light

38)a)The higher the temperature, the more eggs hatched into male animals.
b)20°C.

39)a)F F F T

40)a)



b)i)A liquid has no definite shape.
ii)50ml.

41)a)250ml.

b)The water will take up the air gaps in the marbles.

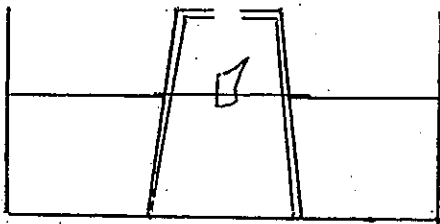
42)X: 5cm³

Y: 20cm³

Z: 15cm³

43)a)As air can be compressed, water can enter the glass.

b)



44)a)150cm³

b)150cm³. The air can be compressed.

c)20cm³.