NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 2 – 2012
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

Booklet A		**/ 60**
Booklet B		**/ 40**
Total		**/100**

Name: _____ ( ) **Class: P 4** _____

Date : 23 October 2012 **Parent's Signature:** _____

75

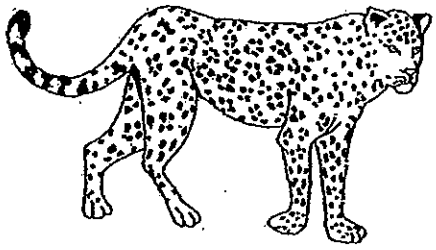
Section A: (30 x 2marks = 60marks)
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. Which of the following is a non- living thing?

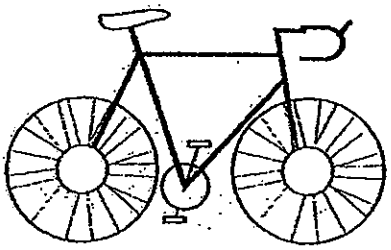
(1)

(2)

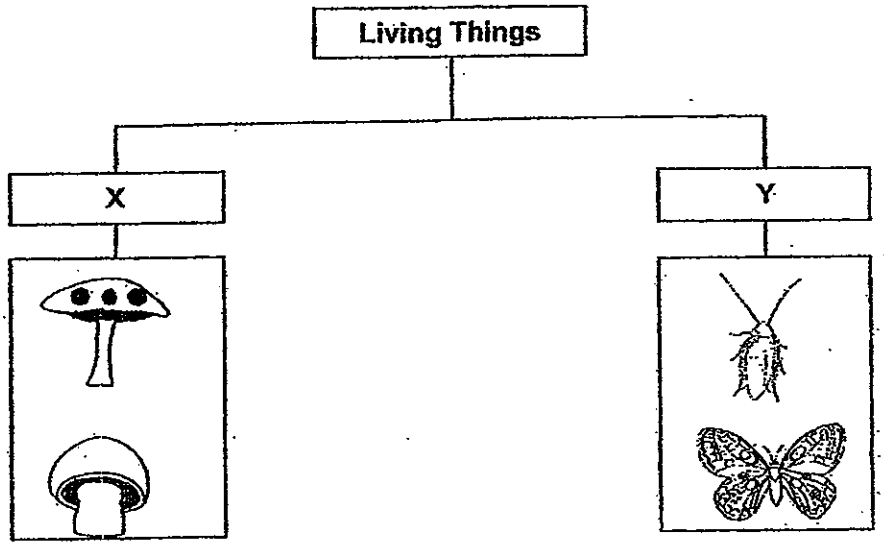
(3)



(4)



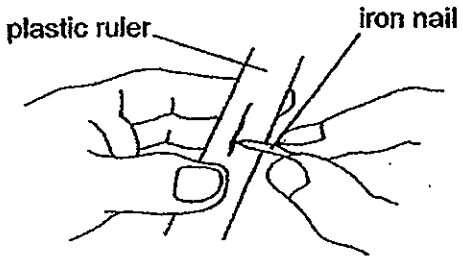
2. The table below shows how some living things can be grouped.



Which one of the following is the most suitable heading for group X?

	Group X	Group Y
(1)	bacteria	pest
(2)	fungi	insect
(3)	micro-organism	mammals
(4)	animals	fern

3. Jane uses an iron nail to scratch a plastic ruler. She observes that there are many scratches on the plastic ruler.



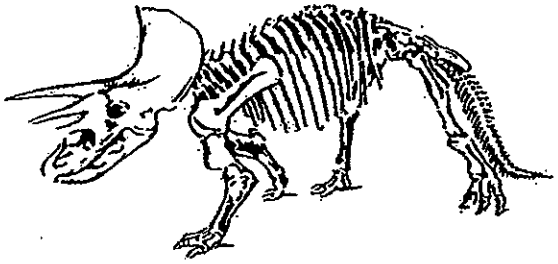
This experiment shows that the iron nail is_____ than the plastic ruler.

(1) harder
(2) stronger
(3) more flexible
(4) more absorbent

4. Which one of the following is the function of a leaf on a plant?

(1) It makes food for the plant.
(2) It takes in water from the rain.
(3) It absorbs minerals salts from the soil.
(4) It holds the plant upright to reach for sunlight.

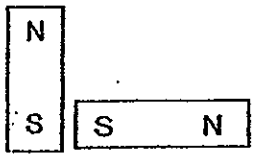
5. The diagram shows the skeleton of a dinosaur.



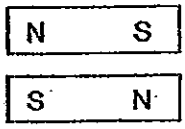
We can identify the type of dinosaurs although they had been extinct for many years as their skeletons _____.

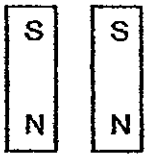
(1) help the dinosaurs to breathe
(2) give the dinosaurs their shapes
(3) protect the dinosaurs from injury
(4) help to digest food for the dinosaurs

6. In which one of the following arrangements will the two magnets pull towards each other?

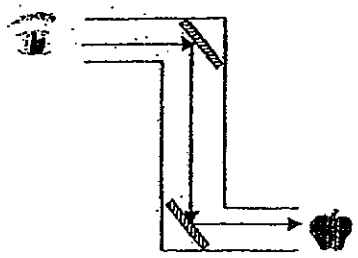
(1) 

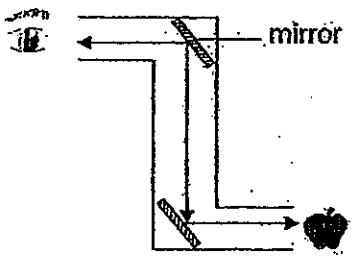
(2) 

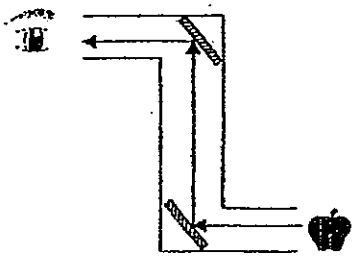
(3) 

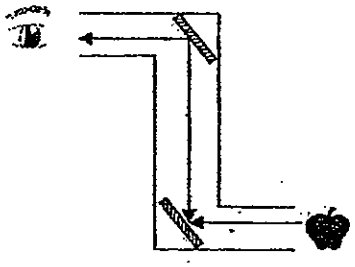
(4) 

7. Sally is looking into the periscope. There are two mirrors in the periscope. Which one of the following diagrams shows the correct direction of light rays that allows Sally to see the apple?

(1) 

(2) 

(3) 

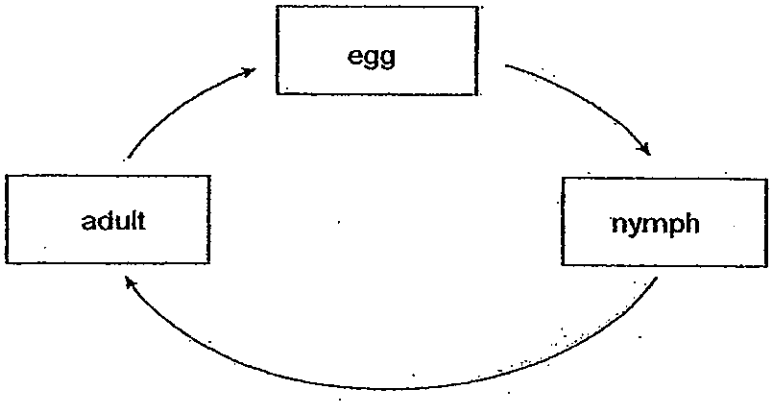
(4) 

79

8. Which one of the following is a source of heat?

(1) An unlit lamp
(2) A woollen cap
(3) A metal spoon
(4) A candle flame

9. The diagram below shows the life cycle of an animal.



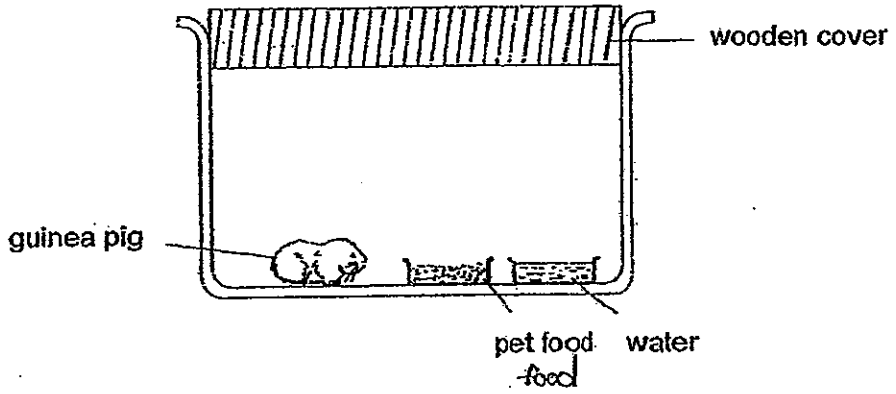
Which one of the following animals is likely to have the life cycle shown above?

(1) Butterfly
(2) Mosquito
(3) Cockroach
(4) Mealworm beetle

10. Matter is anything that has mass and occupies space
Which one of the following is NOT matter?

(1) Milk
(2) Brick
(3) Oxygen
(4) Shadow

11. The diagram below shows a guinea pig in a sealed container.



The guinea pig is found dead after 1 day.
Which of the following is most likely to have caused the guinea pig to die?

(1) There is not enough air in the container.
(2) There is not enough food in the container.
(3) There is not enough water in the container.
(4) There is not enough space for it to move about in the container.

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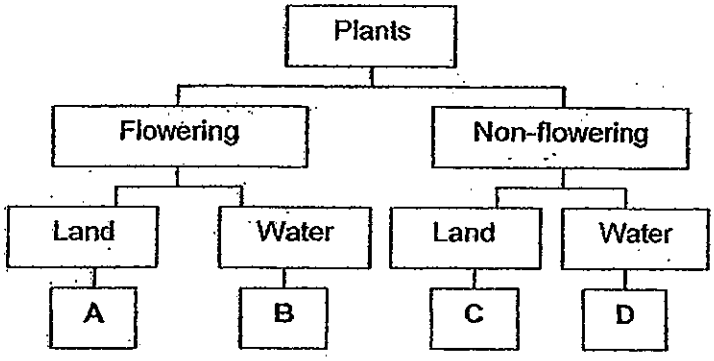
12. The following table provides information on four plants, P, Q, R and S, based on two characteristics. A tick (✓) shows that the plant has the characteristic stated.

	Characteristics	
	Bears flowers	**Grows in the water**
Plant P	✓	✓
Plant Q	✓	
Plant R		✓
Plant S		

From the information given above, where should Plant P be placed in the classification table below?



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

13. The mug and bucket is made from plastic. Which of the following properties of plastic is important for making these objects?

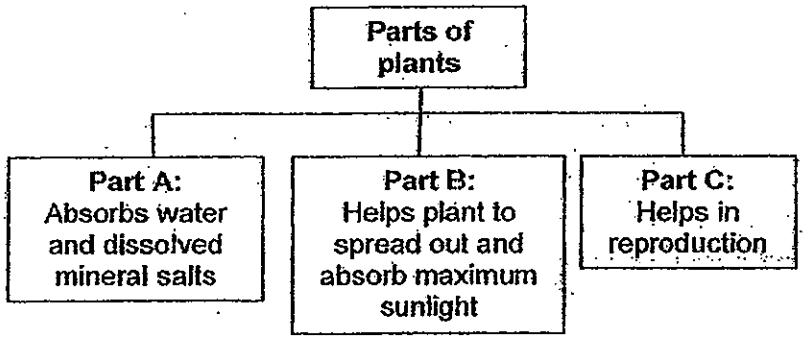
mug

bucket

A It is strong.
B It is flexible.
C It is waterproof.
D It is transparent.

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

14. Study the classification table below carefully. The plant parts are grouped according to their functions.



Which of the following represents the plant parts correctly?

	A	B	C
(1)	Roots	Flowers	Fruit
(2)	Roots	Stems	Flowers
(3)	Stems	Fruits	Buds
(4)	Stems	Roots	Seeds

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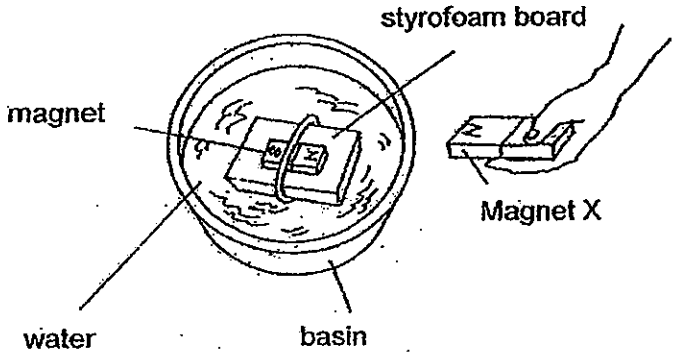
15. Which one of the following statements about the digestive system is **not** true?

(1) Digestion begins in our mouth and ends in the stomach.
(2) The gullet carries the food from the mouth to the stomach.
(3) The teeth, tongue and saliva in our mouth help in the digestion.
(4) Undigested food enters the large intestine where water is absorbed into the body.

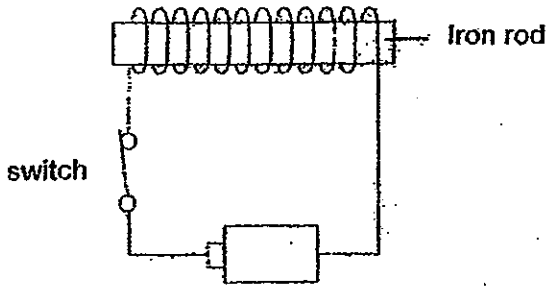
16. Study the experiment set-up shown below.



When magnet X is brought near to the basin, the styrofoam board will _____.

(1) remain still
(2) move towards Magnet X
(3) move away from Magnet X
(4) sink to the base of the basin

17. Which of the following will affect the strength of the electromagnet shown below?

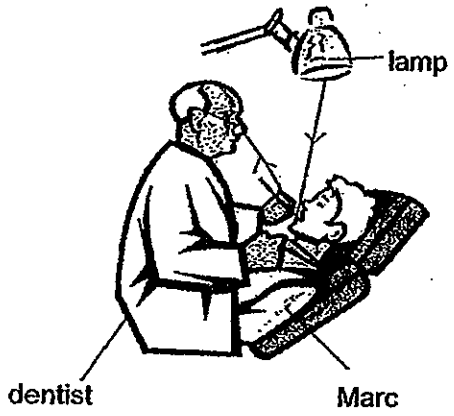


A Number of batteries
B Position of the battery
C Location of the switch
D The number of turns of wire around the iron rod

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

85

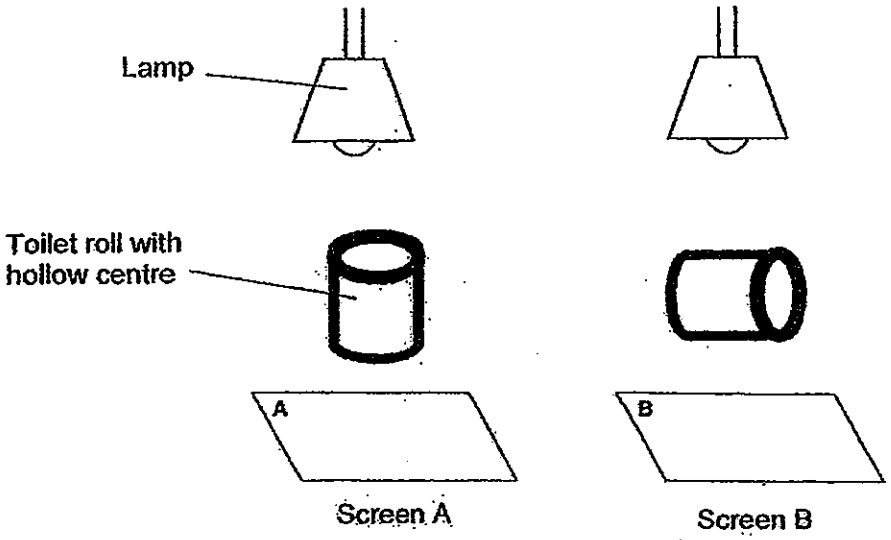
18. Study the diagram shown below.
The dentist uses a lamp to see Marc's teeth clearly.



Which one of the following shows the direction in which the light travels for the dentist to see Marc's teeth?

(1) From lamp to dentist to Marc's teeth
(2) From lamp to Marc's teeth to dentist
(3) From Marc's teeth to dentist to lamp
(4) From Marc's teeth to lamp to dentist

19. Tom placed two identical toilet rolls with hollow centres in two different positions directly under the lamps as shown in the diagram below.



Which of the following pairs of shadows would be observed on the screens when the lamp is switched on?

	Screen A	Screen B
(1)		
(2)		
(3)		
(4)		

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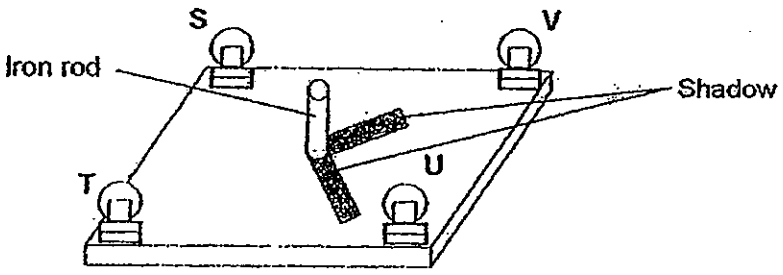
20 An iron rod is placed in the centre of a square board as shown below. Four similar bulbs, S, T, U and V, connected to batteries, are placed at each corner of the board.



Which of the bulbs have to be switched on such that the shadows of the iron rod shown in the diagram above can be formed?

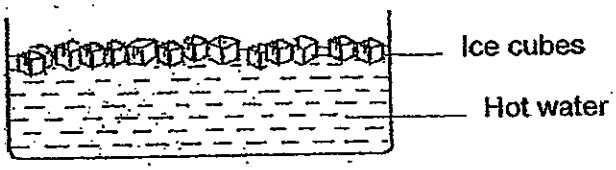
(1) S and T

(2) S and U

(3) T and V

(4) U and V

21. Alice dropped some ice cubes into a basin of hot water. She recorded her observations immediately



Which of the following observation(s) is/are correct?

A The ice cubes melted
B The water became cooler.
C The water started to freeze.
D The temperature of ice and water increased.

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

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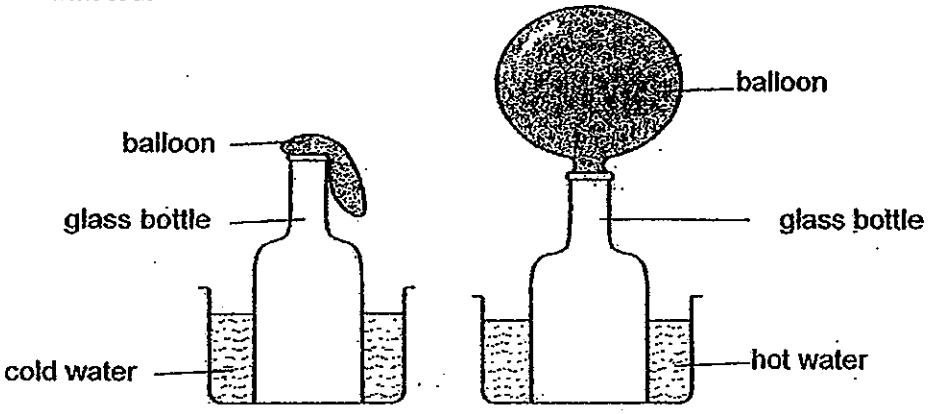
22. Winnie attached a deflated balloon to a glass bottle and placed it in a basin of cold water as shown below. After 5 minutes, the balloon remained deflated. Later, she placed the same glass bottle into a basin of hot water and the balloon became inflated.



What can she conclude from this experiment?

(1) Air is a poor conductor of heat.

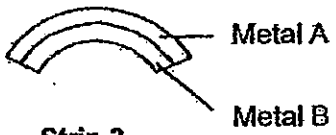
(2) The glass bottle is a good conductor of heat.

(3) The balloon gains heat and expands to occupy more space.

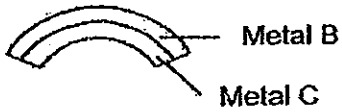
(4) When air gains heat, it expands and takes up a greater space.

23. A bimetallic strip is formed when two different metals are joined together. Four metals of equal length were used in different combinations to form 4 bimetallic strips. The diagrams below show how each strip bent when heated.

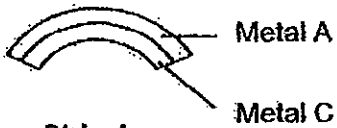
Strip 1



Strip 3



Strip 2



Strip 4

Based on the information given above, which of the following shows the expansion of the metals A, B, C and D in the correct order?

Expands most → Expands least				
(1)	A	B	C	D
(2)	D	A	B	C
(3)	C	B	A	D
(4)	D	A	C	B

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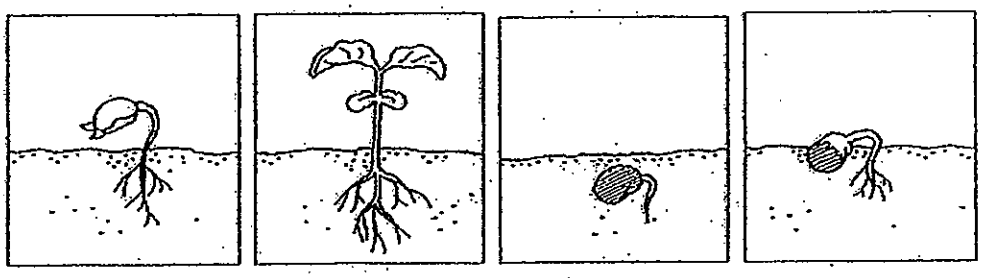
24. Yi Wen observed two animals, X and Y, over a period of time and recorded her observations in the table below.

Observations	Animal X	Animal Y
Eggs are laid in water.	✓	
There are 4 stages in its life cycle.	✓	✓
It is a pest when in its larva stage.		✓
The adult has three pairs of legs.	✓	✓

Based on the information above, which of the following best represent the animals, X and Y respectively?

	Animal X	Animal Y
(1)	duck	housefly
(2)	chicken	mosquito
(3)	mosquito	cockroach
(4)	mosquito	butterfly

25. The stages of a seedling's growth are shown below. They are **not** shown in the correct order.



A B C D

Arrange the stages of the seedling's growth in the correct order.

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

26. The table below shows the properties of A, B, C and D. A tick (√) means that the object has the property and a cross (x) means that it does not have the particular property.

	A	B	C	D
It occupies space.	√	√	x	√
It has a fixed shape.	x	√	x	x
It has a fixed volume.	√	√	x	x

Based on the information given above, which one of the following conclusions is false?

(1) D can be compressed.

(2) C does not have mass.

(3) A and D will take the shape of the container.

(4) A, B, C and D are all different states of matter.

27. Reuben was given 3 substances. P, Q and R. He conducted some experiments and recorded the following observations.

Observations for Substance P	Observations for Substance Q	Observations for Substance R
• Boils at 84°C. • Freezes at 5°C.	• Boils at 125°C. • Freezes 25°C.	• Boils at 310°C. • Freezes 102°C.

At 100°C, what state would Substance P, Q and R be?

	Substance P	Substance Q	Substance R
(1)	solid	liquid	gas
(2)	solid	gas	liquid
(3)	gas	liquid	solid
(4)	gas	solid	liquid

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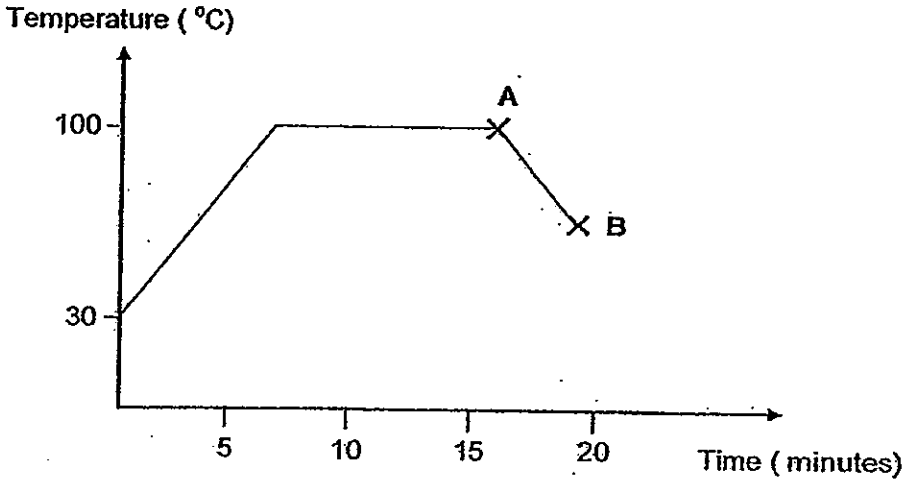
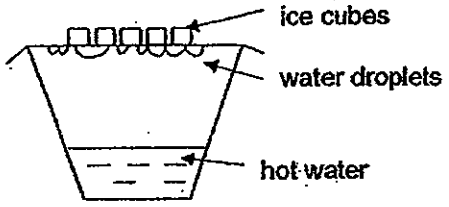
28. A beaker of water was heated over the Bunsen burner continuously for 20 minutes. The temperature of the water was measured at an interval of 5 minutes over a duration of 20 minutes. The results are shown in the graph below.



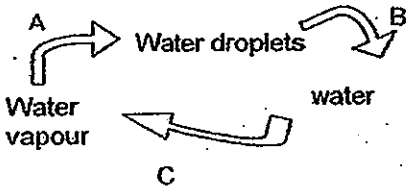
Which one of the following best explains what happened between points A and B on the graph?

(1) The water in the beaker was stirred.
(2) Some water was removed from the beaker of water.
(3) Some ice cubes were added into the beaker of water.
(4) The intensity of the flame of Bunsen burner was reduced.

29. John set up an experiment to study the water cycle.



John later drew a diagram to represent this water cycle as shown below.



Which option correctly represents the processes of evaporation and condensation?

	Evaporation	Condensation
(1)	A	B
(2)	B	C
(3)	C	A
(4)	C	B

30. Ze Yong wanted to cut down water consumption in his home. Which of the following actions allow him to conserve water at home?

A Washing a car with a hose.
B Using the washing machine regularly.
C Brushing teeth with the cup filled with water.
D Taking short showers instead of a long bath.

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

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NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 2 – 2012
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

Name: _____ ( ) Class: P 4 _____

Date : 23 October 2012 Parent's Signature:_____

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Section B: (40marks)
Write your answers to question 31 to 44.
The number of marks available is shown in brackets [ ] at the end of each question or part question.

31. The diagram shows the picture of an insect.

It is classified as an insect because it has certain characteristics. Which statement(s) below are true for ALL insects? Put a tick (√) in the box next to the statement(s). [2]

	It can fly with its wings
	It has three pairs of legs
	It has three segmented parts
	It reproduces by laying eggs

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

Mouth	Gullet	Stomach	Small intestine	Large intestine

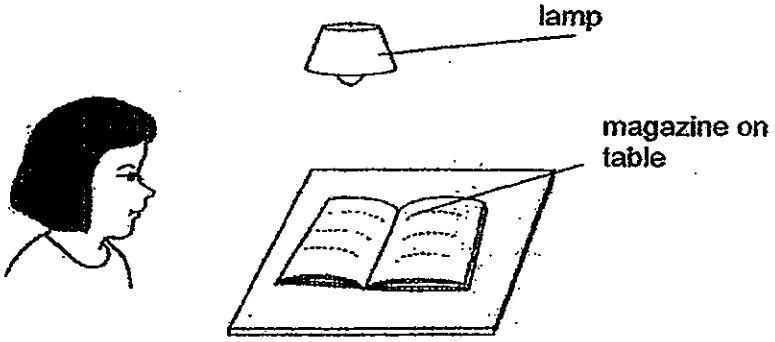
In a human digestive system, name the part where

(a) Saliva acts on the food: _____ [1]

(b) Digestion is completed: _____ [1]

Score	
	4

33. When Jane walks into the room with the lit lamp, she can see the magazine on the table.



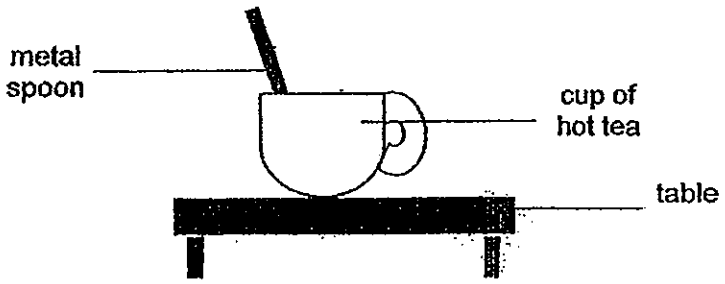
(a) Using your pencil and ruler, draw the path of light to show how Jane can see the magazine. [1]

(b) Jane can see the magazine because it_____ light from the lamp. [1]

Score	2

99

34. A metal spoon was placed in a cup of hot tea as shown below. After a while the metal spoon became hot.



(a) Name the instrument that you can use to measure the temperature of the hot tea accurately? [1]

_____

_____

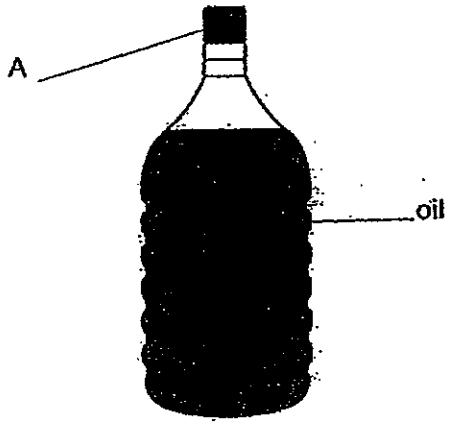
(b) What conclusion can you make from this experiment about the property of heat? [2]

_____

_____

Score	3

35. The diagram below shows a bottle of cooking oil.



Complete the sentences to state whether the parts are solid, liquid or gas.

(a) Part A is a _____ [1]

(b) Oil is a _____ [1]

Score	
	2

10

36. Listed below in Table A are four different objects (1) to (4).

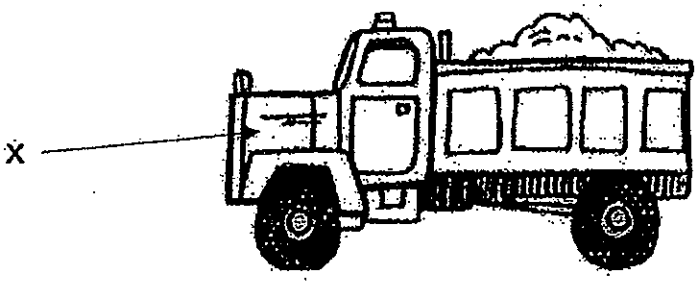
(a) Match the object in Table A to the property of the material it is made of by writing in the numbers (1) to (4) in the column provided in Table B. There should only be a number for each box in Table B. [2]

Table A

Objects
(1) Cotton towel
(2) Tyres of lorry
(3) Windscreen of taxi
(4) Steel paper clips

Table B

Property of materials	Number
Hard and heat resistant	
Hard and transparent	
Absorbs water easily	
Has magnetic property	

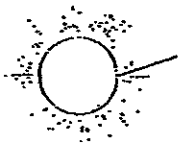


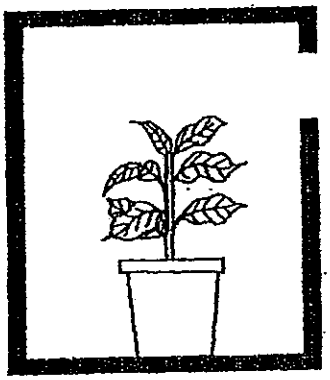
(b) The diagram above shows a truck. The body of a truck is made of material X.

What is X? Give 2 properties of this material that make it suitable for making the body of a truck? [2]

Score 4

37. Melissa put a plant into a cardboard box as shown below. She then placed the set-up in the garden and watered the plant daily.





(a) What will she observe about the plant after 1 week? [1]

_____

_____

(b) What can she conclude from this experiment? [1]

_____

_____

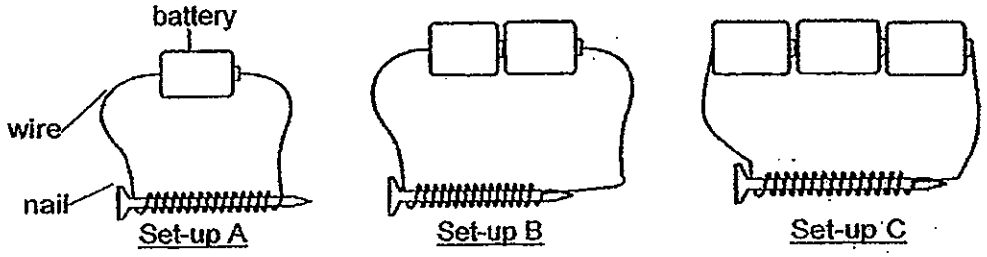
(c) Explain why sunlight is important to the plant? [1]

_____

_____

Score	
	3

38. Joe sets up an experiment on electromagnets as shown below.



He recorded his results as shown in the table.

Set-up	Number of batteries	Number of coils of wire	Number of paper clips attracted
A	1	20	2
B	2	20	5
C	3	20	7

(a) State the aim of his experiment. [1]

_____

(b) Without changing the battery in Set-up A, suggest **another** way to increase the number of paper clips to be attracted to the electromagnet? [1]

_____

_____

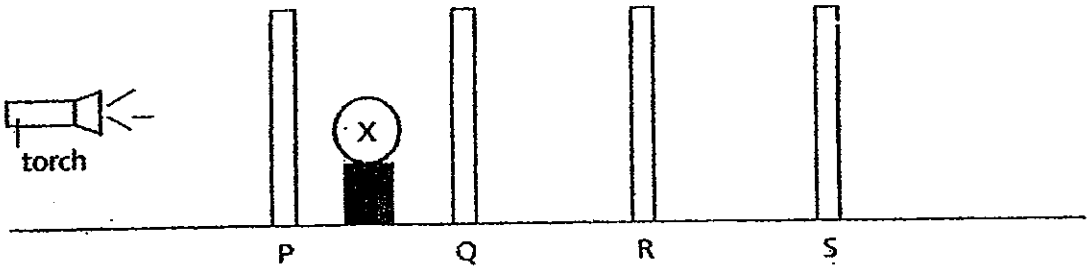
(c) What is the relationship between the number of batteries and the strength of the electromagnet? [1]

_____

_____

Score	
	3

39. Tricia set up the experiment and conducted it in a dark room as shown in the diagram below.



When Tricia switched on the torch, she noticed that a dark shadow of Ball X was formed on Sheet R.

(a) Based on her observation, put a tick (✓) in the correct boxes. [2]

	Conclusion	True	False	Not possible to tell
(i)	Ball X is a rubber ball.			
(ii)	Sheet S is transparent.			
(iii)	Sheet P and R are translucent.			
(iv)	Sheet P and Q allow light to pass through.			

(b) If the 4 sheets, P, Q, R and S, and the position of the ball are fixed and cannot be moved about, what should Tricia do to form a bigger shadow of the ball on Sheet R? [1]

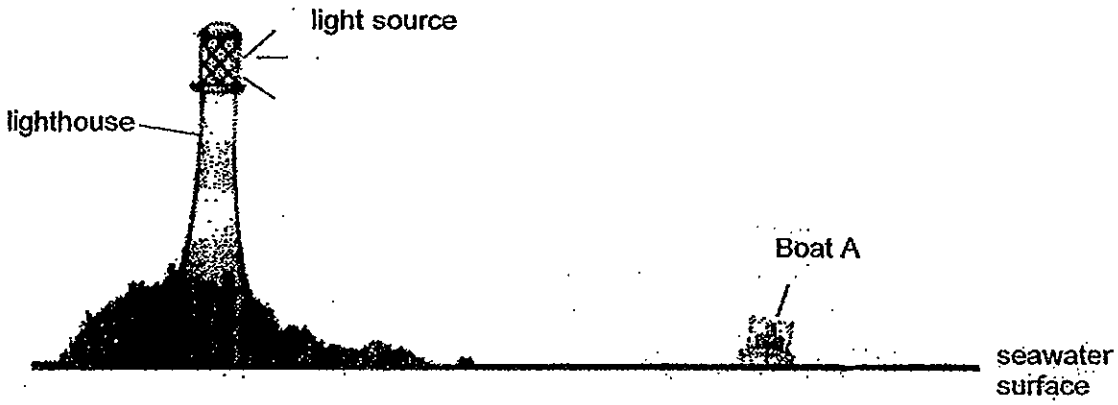
_____

_____

Score	3

105

40. The purpose of a lighthouse is to steer ships and boats away from cliffs and land in dense fog or in dark nights. The diagram below shows a lighthouse on a hill. Boat A is situated a distance away from the lighthouse and it forms a shadow on the sea water.



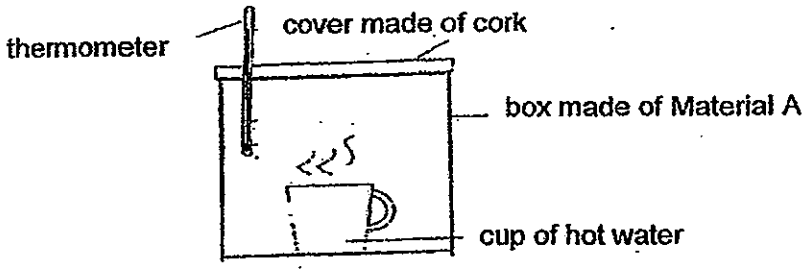
(a) **Draw a cross (X) on the surface of sea water** in the diagram given above to show where the shadow of Boat A would be cast. [1]

(b) Explain clearly why the boat casts a shadow. [2]

Score	
	3

41. Mr Tan used four different materials, A, B, C and D to make four different boxes. A cup with water at 100°C was placed into each box. Covers made of cork were used to cover the boxes.

The set-up for Material A is shown below.



The time taken for the cup of water to reach room temperature of 30°C is recorded in the table below.

Material	Time taken to reach room temperature (minutes)
A	15
B	10
C	30
D	42

(a) Which of the four materials would you choose to prevent a block of ice from melting quickly? [1]

_____

(b) Give a reason for your answer in (a). [2]

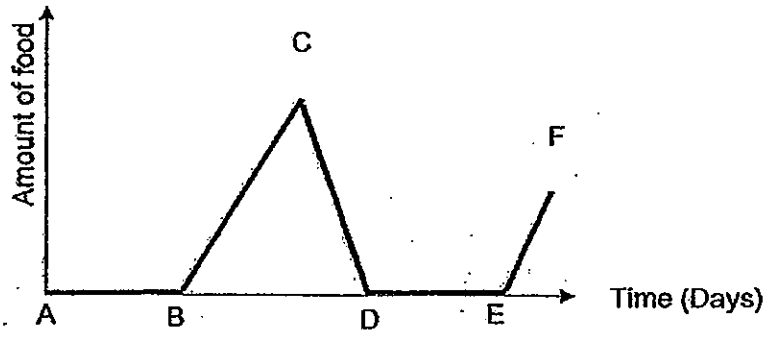
_____

_____

Score	3

107

42. The graph below shows the amount of food eaten by a moth throughout its life cycle.



(a) Which part of the graph, AB, BC, CD, DE or EF, represents the pupal stage of the moth? Explain your answer. [2]

_____

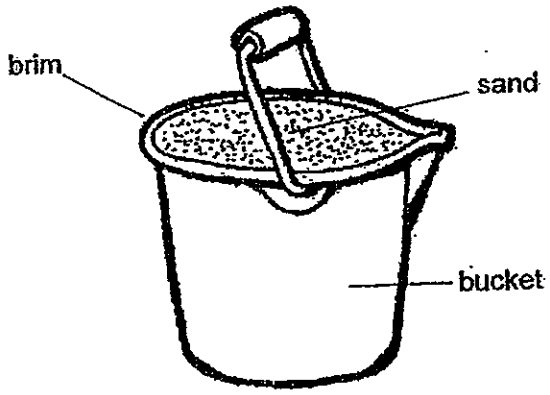
_____

(b) Name another organism which has the same number of stages in its life cycle as a moth. [1]

_____

Score	
	3

43. Megan was at the beach. She tried to pour some sand into a bucket. When the bucket was filled to the brim, she continued to force more sand into it. However, the sand kept flowing out from the bucket.



(a) What can you conclude from the above observation? [1]

_____

_____

(b) Megan tells her friend that sand is a liquid as it took up the shape of the bucket when it was poured into the bucket.
Do you agree with Megan? Give a reason for your answer. [2]

_____

_____

_____

Score	3

109

44. Duckweed is a small, green flowering plant that floats on the surface of water. The National Environment Agency noticed that the population of duckweed in Clementi Lake had been decreasing over the last few months. They realized that 4 factories have been dumping waste water into Clementi Lake.

They took waste water samples from the 4 factories and conducted an experiment to test which factory was dumping waste water that was most harmful to the duckweed. They placed duckweeds in 4 beakers and filled them up with waste water from each of the factories. They kept the setups in a laboratory for 10 days. The table below shows the results of the experiment.

	Factory A	Factory B	Factory C	Factory D
Number of duckweeds at the beginning	20	20	20	20
Number of duckweeds after 10 days	10	4	23	13

(a) Based on the data above, which factory has been dumping waste water that was most harmful to the duckweed? Give a reason for your answer [2]

(b) Based on the data above, which factory had been treating its waste water to

(c) State one possible negative effect of the water pollution on animals living in the Clementi Lake . [1]

-- End of paper --

ANSWER SHEET

EXAM PAPER 2012

SCHOOL : NAN HUA
SUBJECT : PRIMARY 4 SCIENCE

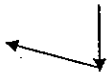
TERM : SA2

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

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

31)It has three pairs of legs
It has three segmented parts

32)a)Mouth
b)Small intestine

33)a) 

b)reflects

34)a)A thermometer.
b)Heat travels from a hotter region to a colder region.

35)a)solid.
b)liquid.

36)a)2, 3, 1, 4
b)X metal. It is suitable for making the body of a truck as it is hard and strong.

37)a)The plant will grow towards the hole ion the box.
b)Plants respond to sunlight.
c)Sunlight is required for photosynthesis to make food for the plant.

38)a)To find out if the number of batteries will affect the strength of the electromagnet.

b)Increase the number of coils of wire around.

c)As the number of batteries increases, the strength of the electromagnet increases.

39)a)i)Not ii)Not iii)F iv)T

b)Tricia should move the torch nearer to sheet P.

40)a)

b)When the light source shines on Boat A, light cannot pass through Boat A as it is opaque, thus a shadow would be cast.

41)a)Material D.

b)Material D is the poorest conductor of heat so it conducts heat from the surrounding to the block of ice slowest therefore I would choose material D.

42)a)Part DE. At the pupal stage, the pupa does not eat.

b)A butterfly.

43)a)Sand has a fixed volume.

b)No, I do not. Sand has a fixed shape so it is a solid but when it is in a cluster, it would then take the shape of the bucket. It also have a definite volume, Thus it cannot be compressed.

44)a)Factory B. The number of duckweeds that was put in Factory's B's was water decreased the most after 10 days.

b)Factory C. The water was treated so the number of duckweed increased after 10 days.

c)The ducks in the Clementi Lake would get poisoned and die.