Name: _____( )

Class: Primary 4 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL

Primary 4
Semestral Assessment 2
SCIENCE

BOOKLET A

27 October 2017

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

28 questions
56 marks

Do not open this booklet until you are told to do so.
Follow all instructions carefully.
Answer all questions.

This booklet consists of 20 printed pages.

www.testpapersfree.com

Downloaded from SingaKids.com

www.testpapersfree.com

Downloaded from SingaKids.com

Section A (28 x 2 marks = 56 marks)
For each question from 1 to 28, 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.

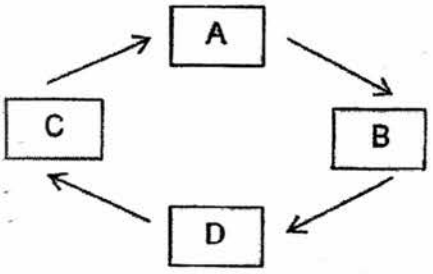
1. A, B, C and D show the stages in the life cycle of a mosquito.



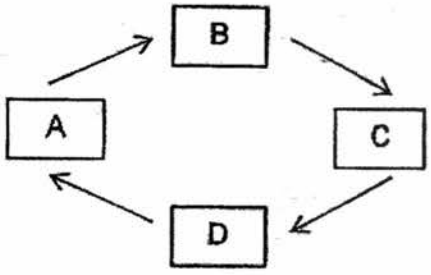
A B C D

Which one of the following shows the life cycle of a mosquito correctly?

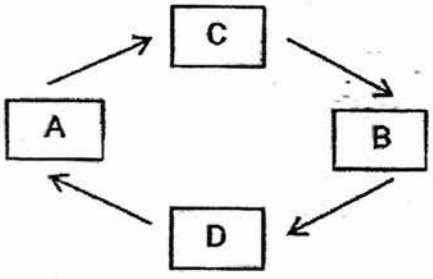
(1)



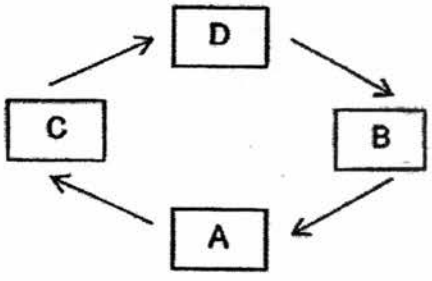
(2)



(3)

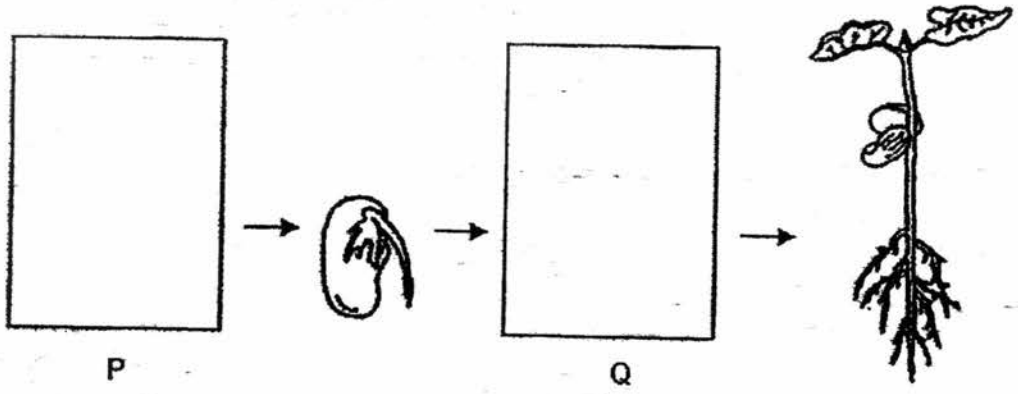


(4)

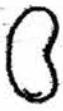


www.testpapersfree.com
Downloaded from SingaKids.com

2. The diagram below shows the growth of a young plant with two missing stages P and Q.

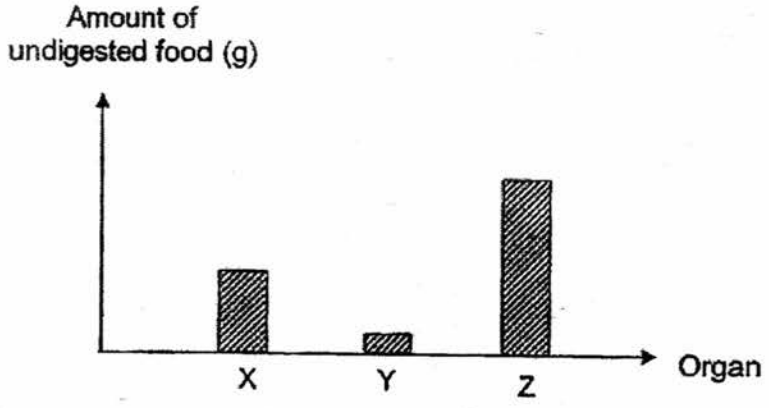


Which one of the following shows the correct stages for P and Q?

	P	Q
(1)		
(2)		
(3)		
(4)		

www.testpapersfree.com
Downloaded from SingaKids.com

3. The graph below shows the amount of undigested food when it first enters organs X, Y and Z.



Based on the graph above, which one of the following correctly identifies organs X, Y and Z?

	X	Y	Z
(1)	gullet	stomach	small intestines
(2)	small intestines	large intestines	gullet
(3)	stomach	small intestines	large intestines
(4)	large intestines	gullet	stomach

4. Seeds P, Q, R and T from the same plant are placed under the conditions shown in the table below.

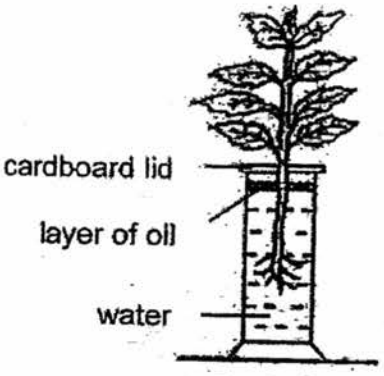
seed	conditions			
	air	water	light	temperature (°C)
P	Yes	No	Yes	10
Q	Yes	No	No	15
R	Yes	Yes	No	25
T	No	Yes	Yes	32

Which one of the following seeds will germinate?

(1) P
(2) Q
(3) R
(4) T

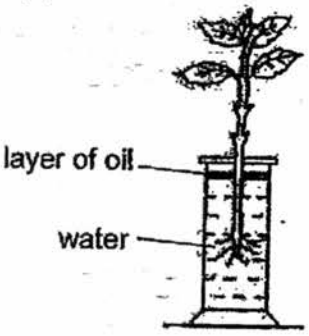
www.testpapersfree.com
Downloaded from SingaKids.com

5. Tammy wanted to find out if the roots of a plant absorb water. She set up an experiment as shown in the diagram below.

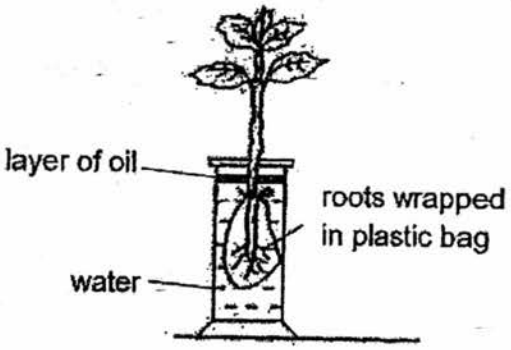


Which one of the following should she choose as a control set-up for her experiment?

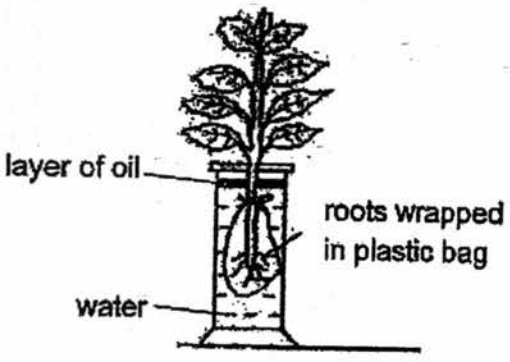
(1)



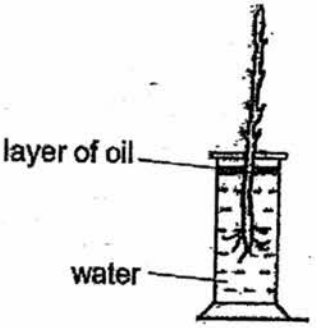
(2)



(3)

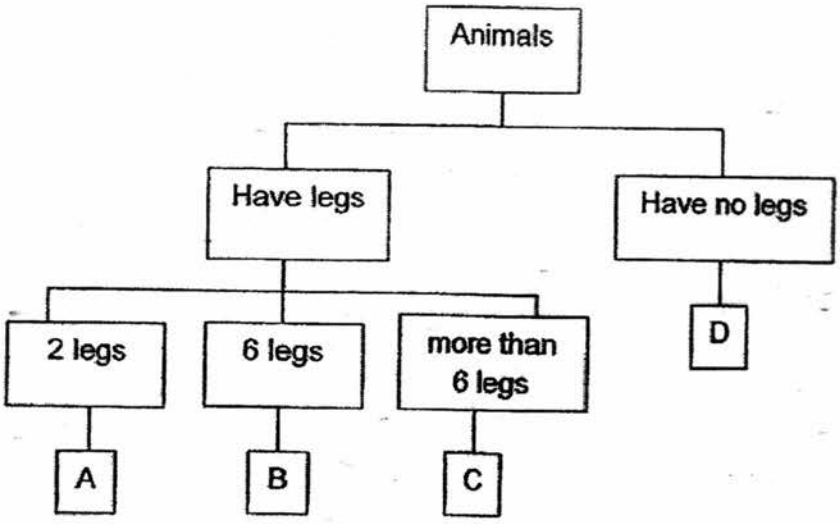


(4)



www.testpapersfree.com
Downloaded from SingaKids.com

6. Study the chart below.



Where would you place animal X in the chart above?

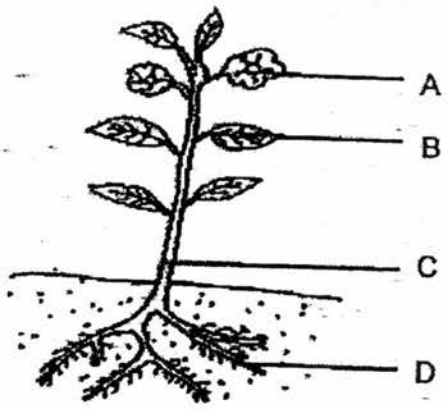


animal X

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

www.testpapersfree.com
Downloaded from SingaKids.com

7. Which one of the following plant parts A, B, C or D helps to keep the plant upright?



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

8. Study the classification table below.

Group A	Group B	Group C
 cow	 eagle	 beetle
 frog	 penguin	 ant

The animals are grouped according to _____.

(1) their body covering
(2) the place they live in
(3) the way they reproduce
(4) the number of legs they have

www.testpapersfree.com Downloaded from SingaKids.com

9. Elaine wanted to find out if sunlight is needed for a plant to grow.

Set-up	Location	Amount of water given to plant (ml)	Number of seeds
A	dark room	100	5
B	field	100	3
C	dark room	50	3
D	field	100	5

Which two set-ups should Elaine use for her investigation?

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

10. Animal Y has the following characteristics.

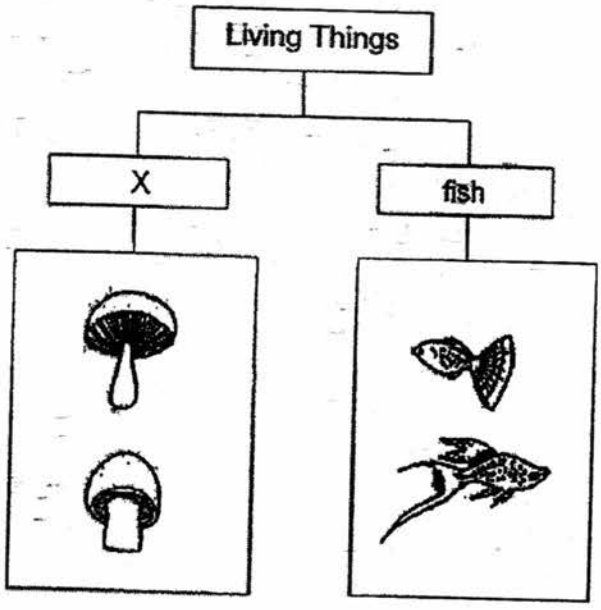
It stays in water.
It does not lay eggs.
It provides milk for its young.
It has hair as its outer covering.

Which animal group does Animal Y most likely belong to?

(1) Fish
(2) Reptile
(3) Mammal
(4) Amphibian

www.testpapersfree.com
Downloaded from SingaKids.com

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



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

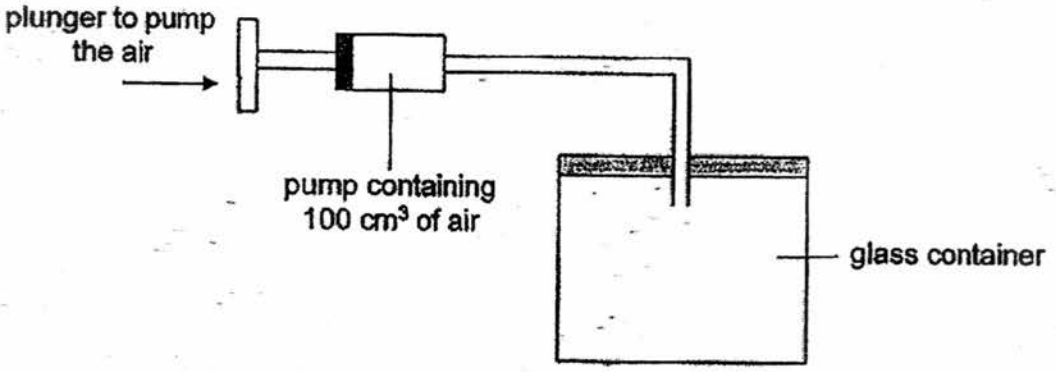
(1) fungi
(2) insects
(3) bacteria
(4) mammals

12. Matter is anything that has mass and occupies space.
Which one of the following is <u>not</u> a matter?

(1) air
(2) soil
(3) water
(4) shadow

www.testpapersfree.com
Downloaded from SingaKids.com

13. The capacity of the glass container shown below is 800 cm^3. Sarah pumped 100 cm^3 of air into the glass container.



What is the final volume of the air in the glass container?

(1) 100 cm^3

(2) 700 cm^3

(3) 800 cm^3

(4) 900 cm^3

14. **Which one of the following is a source of light?**

(1)



candle flame

(2)



yellow leaf

(3)



moon

(4)

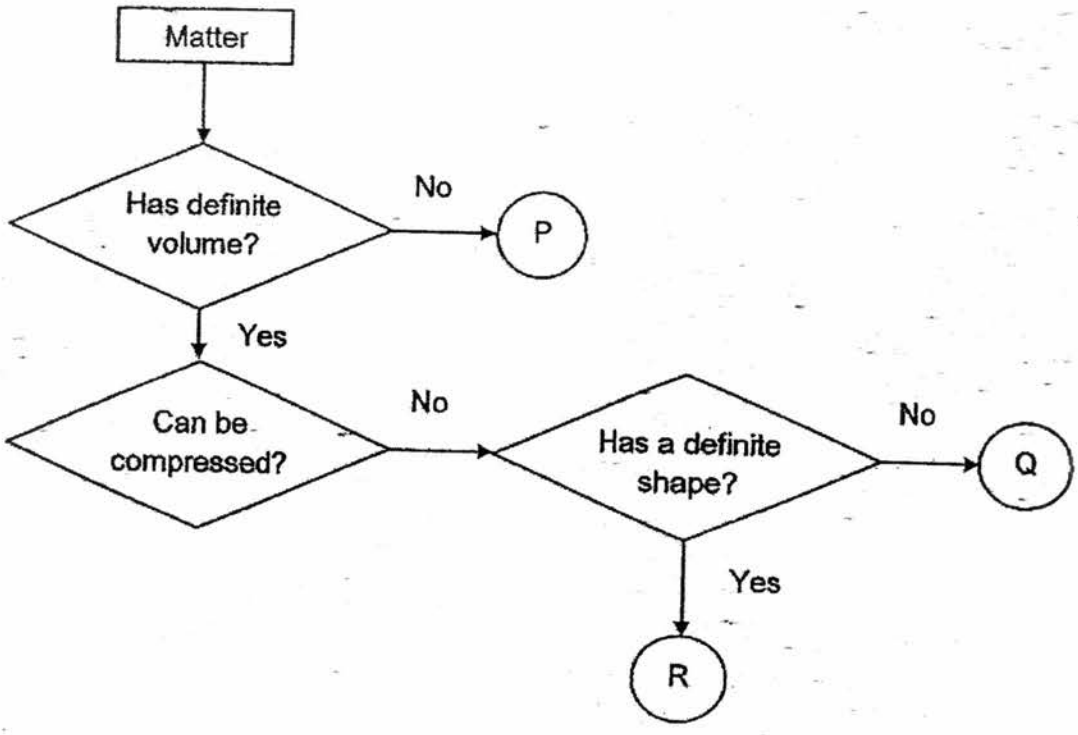


orange

www.testpapersfree.com

Downloaded from SingaKids.com

15. Study the flow chart below.

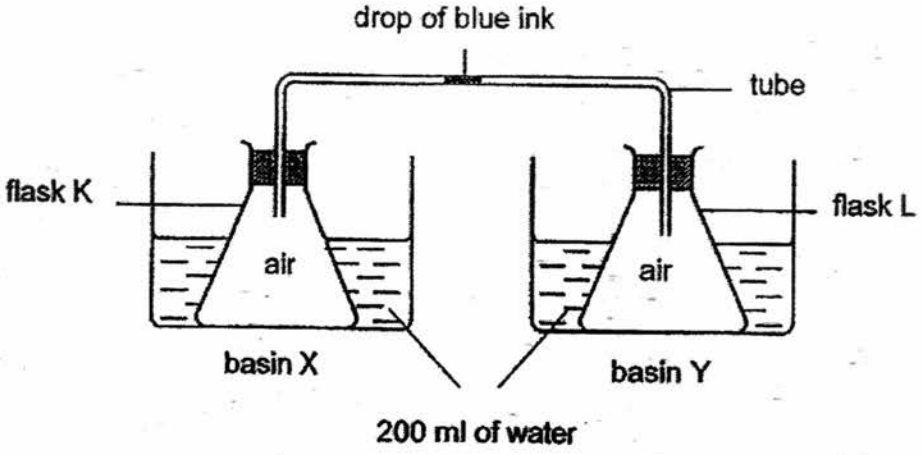


Which one of the following best represents P, Q and R?

	P	Q	R
(1)	oxygen	ice cube	water
(2)	water vapour	milk	book
(3)	air	water vapour	pencil
(4)	light	water	chair

www.testpapersfree.com
Downloaded from SingaKids.com

16. Study the diagram below carefully.

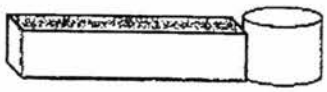


Which one of the following shows the possible temperature of the water in basins X and Y, and the movement of the blue ink in the tube?

	Temperature of the water in basin X	Temperature of the water in basin Y	Movement of blue ink drop in tube
(1)	90 °C	5 °C	Move towards flask K
(2)	90 °C	5 °C	Move towards flask L
(3)	25 °C	25 °C	Move towards flask K
(4)	5 °C	90 °C	Move towards flask L

www.testpapersfree.com
Downloaded from SingaKids.com

17. Object A was attracted to the magnet as shown in the diagram below.



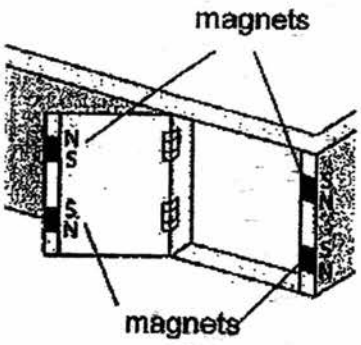
magnet object A

Object A is made of _____.

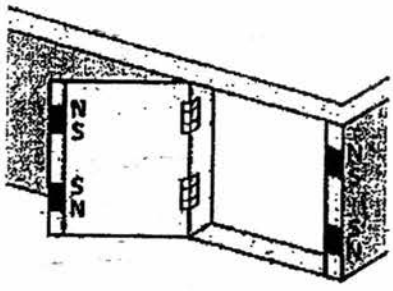
(1) steel
(2) wood
(3) plastic
(4) rubber

18. Which one of the following arrangement of the four magnets will allow the cabinet door to be shut most tightly?

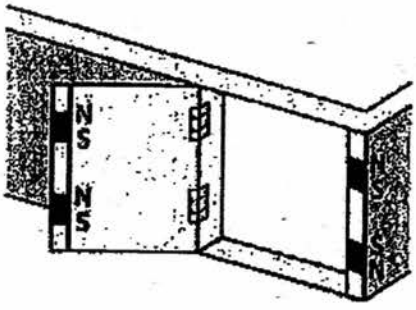
(1)



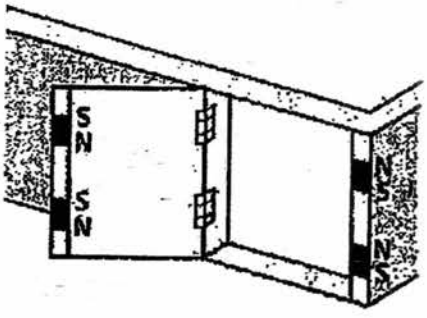
(2)



(3)

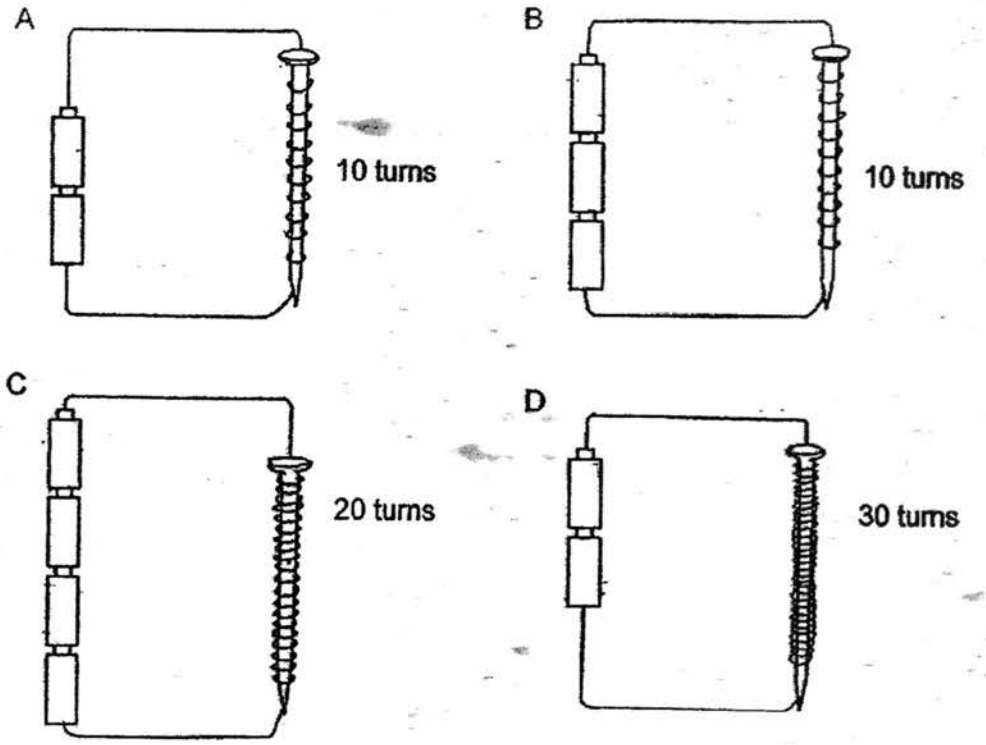


(4)



www.testpapersfree.com Downloaded from SingaKids.com

19. Tze Sun wants to find out if the number of coils of wires around the iron nail affects the magnetic strength of an electromagnet.

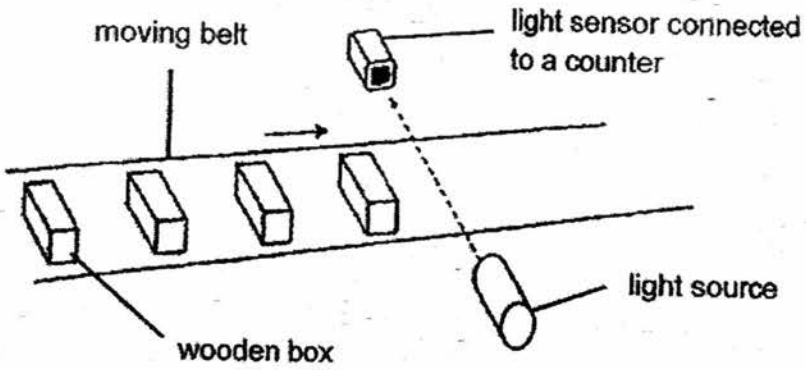


Which two set-ups should he use?

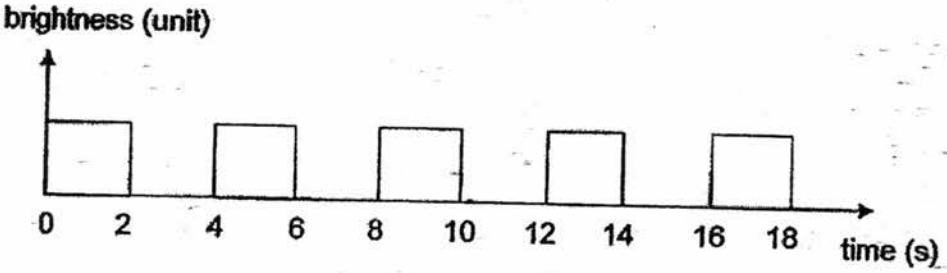
(1) A and D only
(2) A and B only
(3) B and C only
(4) C and D only

www.testpapersfree.com
Downloaded from SingaKids.com

20. The diagram below shows a light sensor used to count the number of wooden boxes on a moving belt.



When the wooden box is between the light sensor and the light source, it blocks the light from the light source from reaching the light sensor. The results are recorded in the graph below.

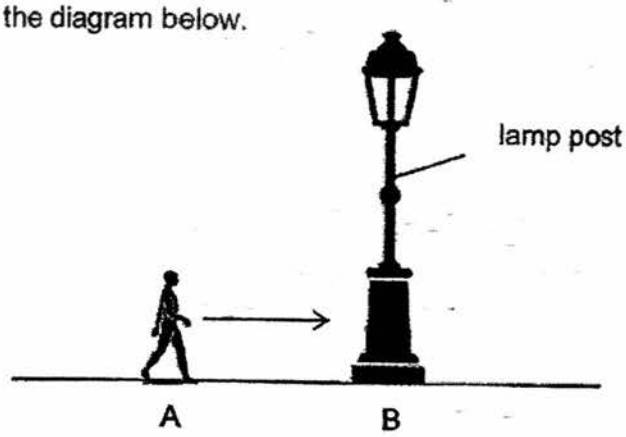


Based on the graph, how many wooden boxes passed the sensor in 18 seconds?

(1) 4
(2) 5
(3) 9
(4) 18

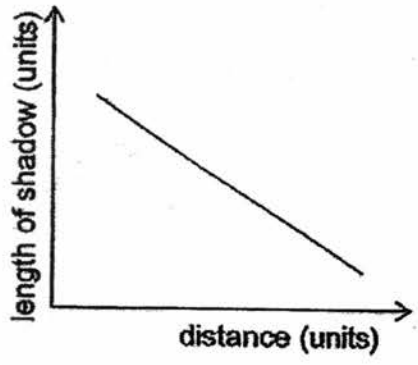
www.testpapersfree.com
Downloaded from SingaKids.com

21. Study the diagram below.

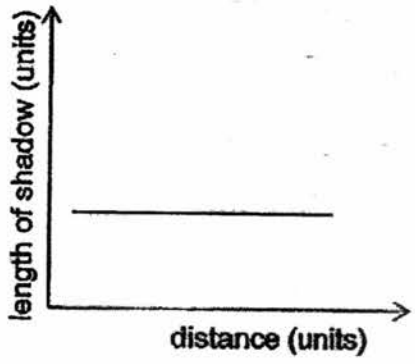


Which one of the following graphs correctly shows the length of Tom's shadow as he walks from position A to B?

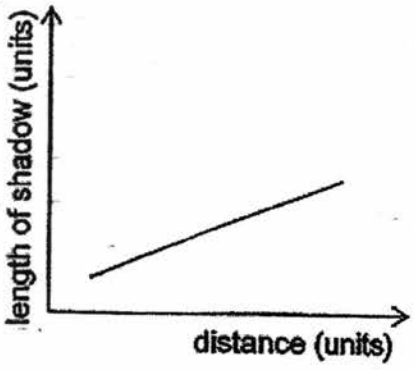
(1)



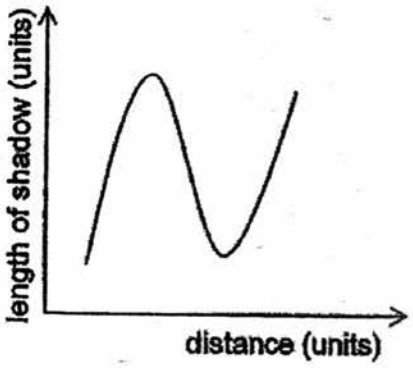
(2)



(3)

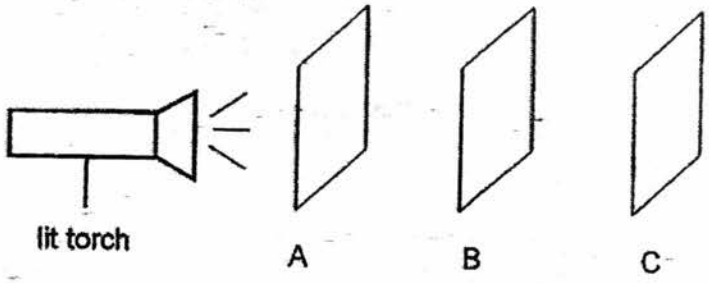


(4)



www.testpapersfree.com
Downloaded from SingaKids.com

22. Ben conducted an experiment in a dark room with the set-up shown below.

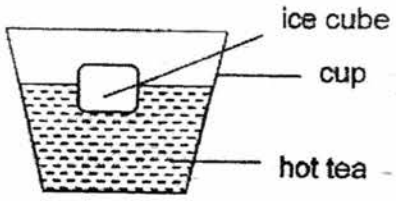


Light from the torch could be seen on material B but not on material C.
Which one of the following best represents materials A, B and C?

	Material A	Material B	Material C
(1)	metal sheet	frosted glass	cardboard
(2)	clear glass	cardboard	clear plastic sheet
(3)	cardboard	clear glass	metal sheet
(4)	clear plastic sheet	tracing paper	frosted glass

www.testpapersfree.com
Downloaded from SingaKids.com

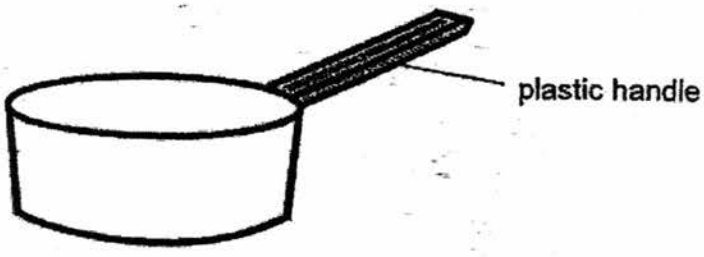
23. Siew Mei placed an ice cube in a cup of hot tea as shown below.



Which one of the following statements is true?

(1) The cup loses heat to the hot tea.
(2) The ice cube loses heat to the hot tea.
(3) The ice cube gains heat from the hot tea.
(4) The hot tea gains heat from the ice cube.

24. The diagram below shows a frying pan with a plastic handle.

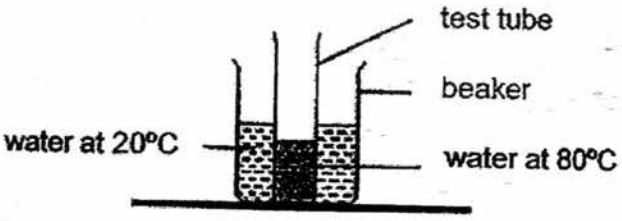


Simon is able to hold the hot frying pan using the plastic handle. This is because plastic is a _____.

(1) light material
(2) flexible material
(3) poor conductor of heat
(4) good conductor of heat

www.testpapersfree.com
Downloaded from SingaKids.com

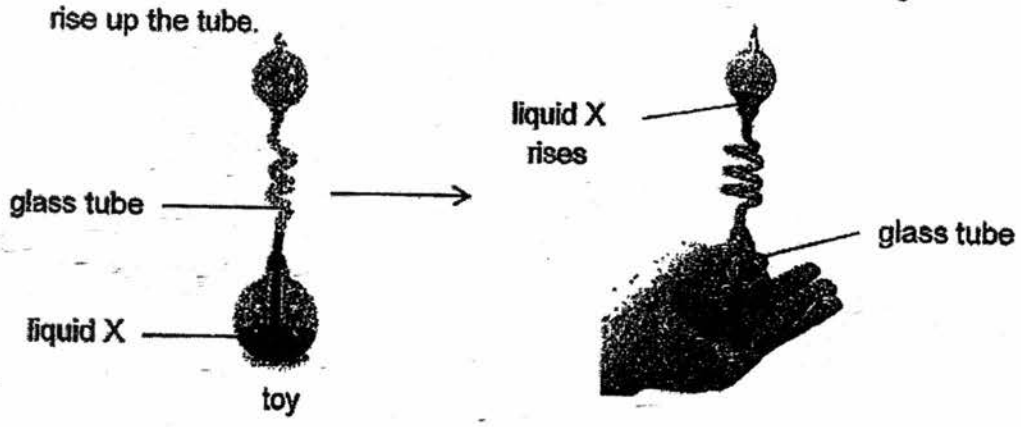
25. Ravi placed a test tube into a beaker of water as shown in the diagram below.



What would happen to the temperature of the water in both the test tube and the beaker after three minutes?

	Temperature of water in the beaker	Temperature of water in the test tube
(1)	decrease	decrease
(2)	increase	decrease
(3)	decrease	increase
(4)	increase	increase

26. Thomas held a toy made of glass in his hand tightly for a minute as shown in the diagram below. He noticed that liquid X in the glass tube begins to rise up the tube.

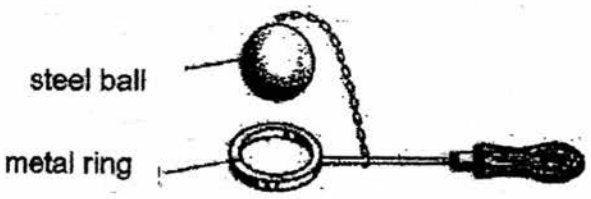


What caused liquid X in the glass tube to rise?

(1) Liquid X gained heat from the hand and expanded.
(2) The glass tube lost heat to the hand and contracted.
(3) The glass tube lost heat to the surroundings and contracted.
(4) The air in the glass tube gained heat from the hand and expanded.

www.testpapersfree.com
Downloaded from SingaKids.com

27. Look at the diagram below. At room temperature, the steel ball could pass through the metal ring. After heating the steel ball, it was unable to pass through the metal ring.



Which one of the following best explains this observation?

	Metal ring	Steel ball
(1)	Expanded	Expanded
(2)	Expanded	Remained unchanged
(3)	Remained unchanged	Expanded
(4)	Remained unchanged	Remained unchanged

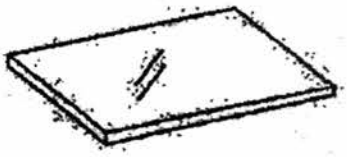
28. Which of the following can be bent easily without breaking?

(1)



a cotton t-shirt

(2)



a ceramic tile

(3)



a plastic fork

(4)



a wooden ruler

END OF BOOKLET A

www.testpapersfree.com

Downloaded from SingaKids.com

www.testpapersfree.com

Downloaded from SingaKids.com

Name: _____ ( )

Class: Primary 4 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL

SIMPLE IN VIRTUE

STEADFAST IN DUTY

純 头 坚

Primary 4

Semestral Assessment 2

SCIENCE

BOOKLET B

27 October 2017

Booklet A	56
Booklet B	44
Total	100

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

13 questions
44 marks

Do not open this booklet until you are told to do so.
Follow all instructions carefully.
Answer all questions.

This paper consists of 14 printed pages.

_____

Parent's Signature/Date

www.testpapersfree.com

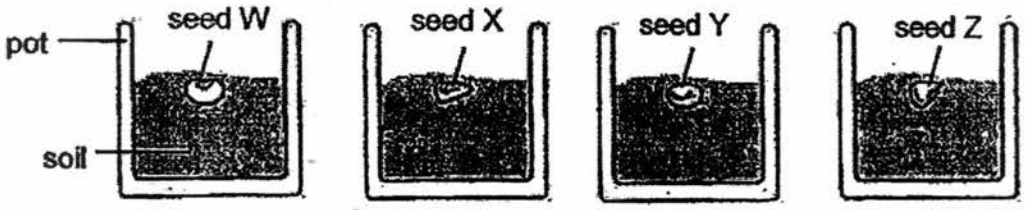
Downloaded from SingaKids.com

www.testpapersfree.com

Downloaded from SingaKids.com

Section B (44 marks)
For questions 29 to 41, write your answers in this booklet.
The number of marks available is shown in the brackets at the end of each question or part question.

29. Escher carried out an experiment to investigate the growth of four different types of seeds W, X, Y and Z. He put the seeds into four similar pots as shown in the diagram below.



Escher measured the height of the seedlings over four days and recorded the results in the table below.

Seed	Height of seedling (cm)			
	Day 1	Day 2	Day 3	Day 4
W	0	2	4	7
X	0	4	5	6
Y	0	3	6	10
Z	0	1	3	5

(a) Based on the results shown, which seed W, X, Y or Z grew the fastest? [1]

_____

(b) For the experiment to be fair, tick (✓) the variables that should remain the same. [2]

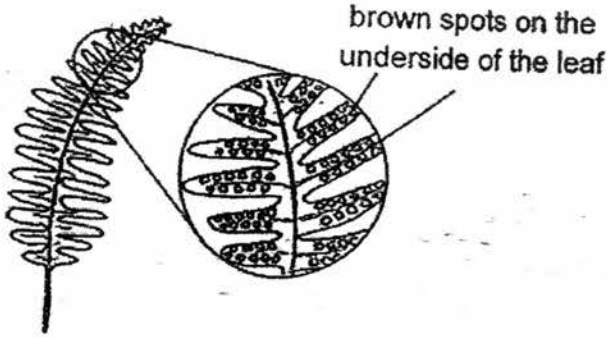
Variables	(✓)
Number of seeds in each pot	
Amount of water	
Amount of soil	
Type of seeds	
Location of pot	

www.testpapersfree.com
Downloaded from SingaKids.com

30. Study the diagram below.



plant A



magnified view of a leaf of plant A

(a) What could be the brown spots on the underside of the leaf of plant A? [1]

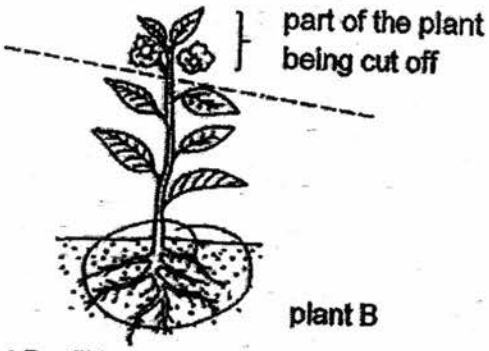
_____

(b) What is the function of these brown spots? [1]

_____

_____

Look at the diagram below. The upper part of plant B was cut off. The dotted line shows where the cut was made to the plant.



plant B

(c) Would plant B still be able to survive? Give a reason to support your answer. [1]

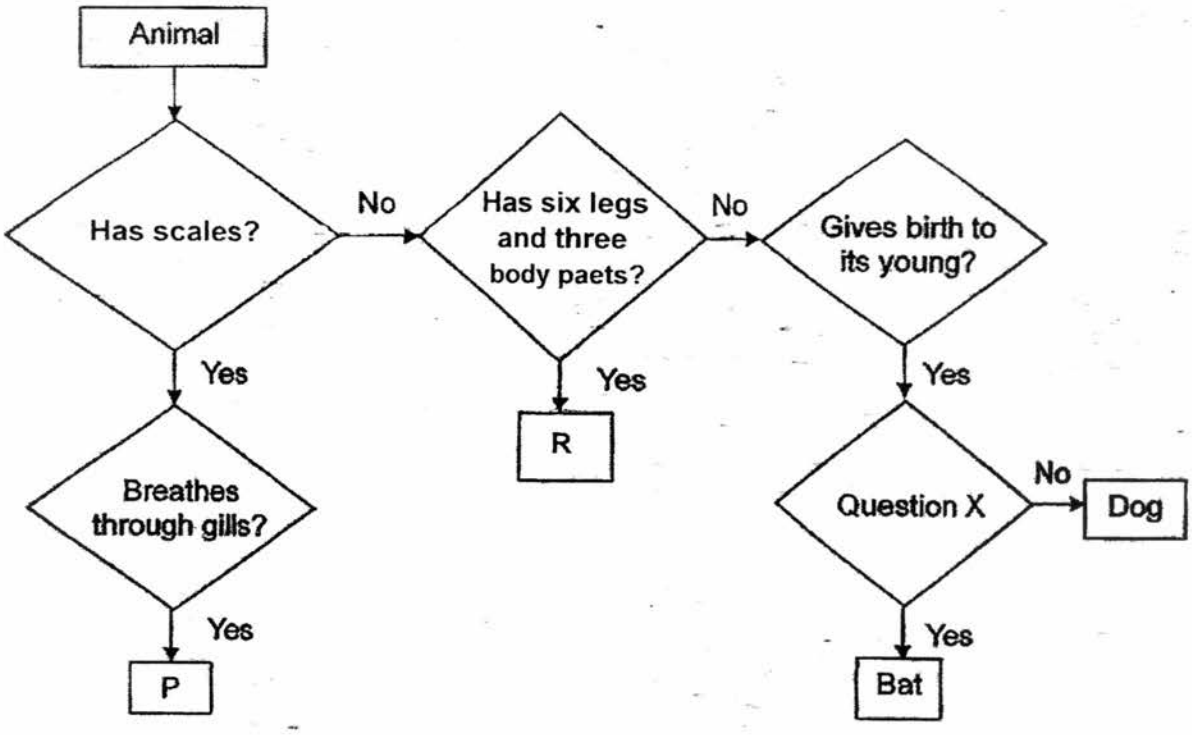
_____

_____

www.testpapersfree.com

Downloaded from SingaKids.com

31. Study the flow chart below.



(a) Based on the flow chart above, state all the characteristics of animal R. [1]

_____

_____

(b) What could animal R be? [1]

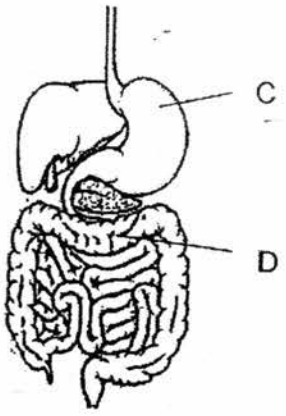
_____

(c) Which one of the following could Question X be? Put a tick (✓) in the correct box below. [1]

Questions	Tick (✓)
Does it have an outer covering of hair?	
Does it breathe through moist skin?	
Can it fly?	

www.testpapersfree.com
Downloaded from SingaKids.com

32. The diagram below shows part of the human digestive system.



(a) What is the substance in C that helps to break down food into simpler substances? [1]

_____

_____

(b) What happens to the undigested food in D? [1]

_____

_____

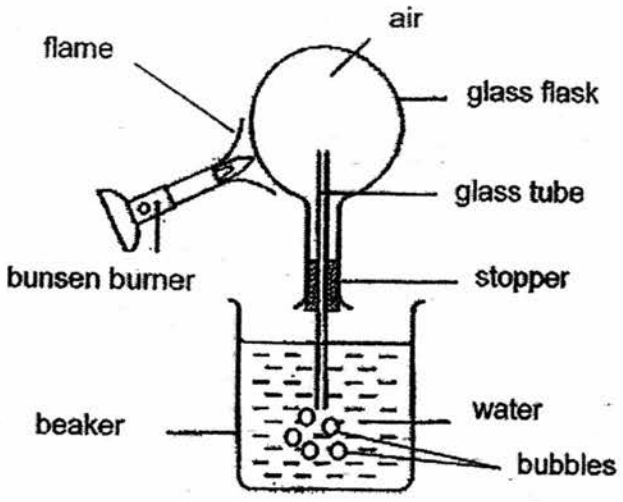
(c) Which system works with the digestive system to transport digested food to the other parts of the body? [1]

_____

www.testpapersfree.com

Downloaded from SingaKids.com

33. Amrita placed an inverted glass flask near a bunsen burner for a few minutes as shown below.

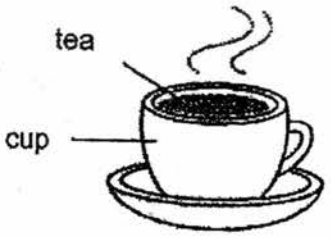


(a) Explain why bubbles were observed in the beaker of water when the glass flask was heated. [2]

(b) State what could be observed when the bunsen burner was turned off. [1]

www.testpapersfree.com
Downloaded from SingaKids.com

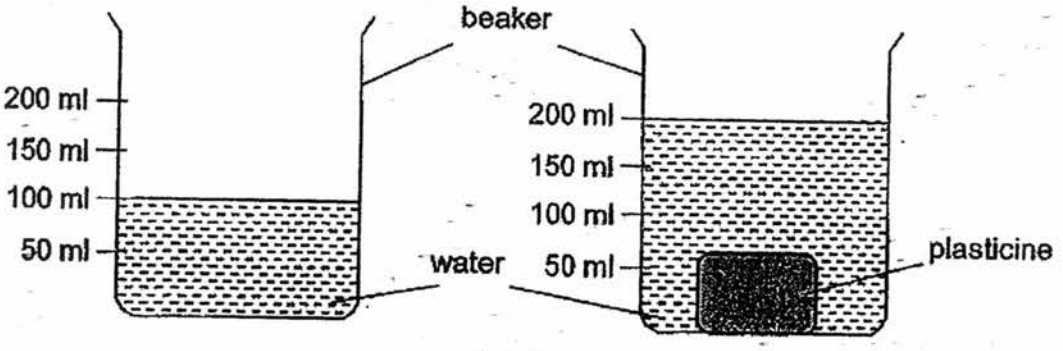
34. The diagram below shows a cup of tea.



(a) Tick (✓) the correct state for the following things. [2]

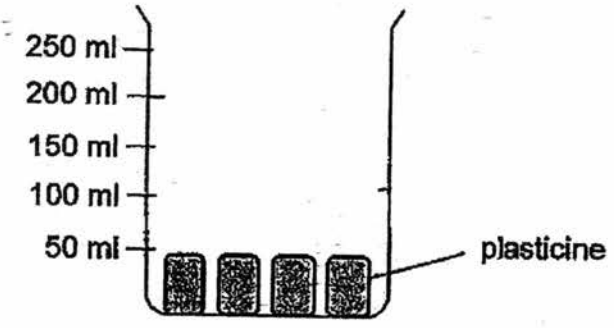
Things	States of matter		
	Solid	Liquid	Gas
Tea			
Cup			

Alif placed a block of plasticine into a beaker of water in the diagram shown below.



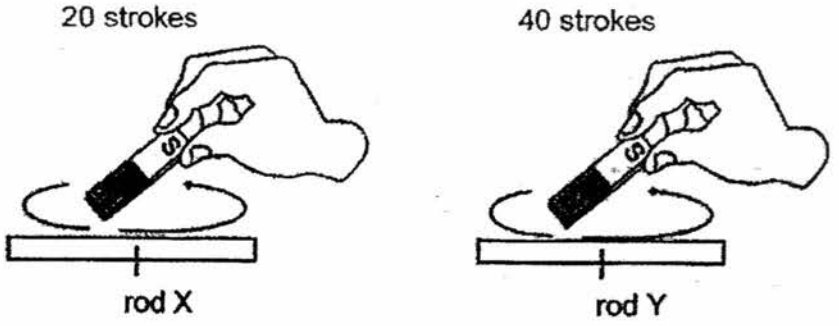
He then removed the block of plasticine and cut it into four pieces.

(b) Draw the water level in the beaker after he placed the four pieces of plasticine back into the beaker of water. [1]



www.testpapersfree.com
Downloaded from SingaKids.com

35. Gerard stroked two similar iron rods X and Y with the same magnet as shown in the diagram below.



Both rods became magnets and were used to attract similar metal pins.

(a) Which rod will attract fewer metal pins? Explain your answer. [1]

_____

_____

Gerard's brother, John, used the same magnet to stroke rod Z 50 times. He found that rod Z was unable to attract any metal pins.

(b) Give two possible reasons why rod Z could not attract any metal pins. [2]

Reason 1

_____

_____

Reason 2

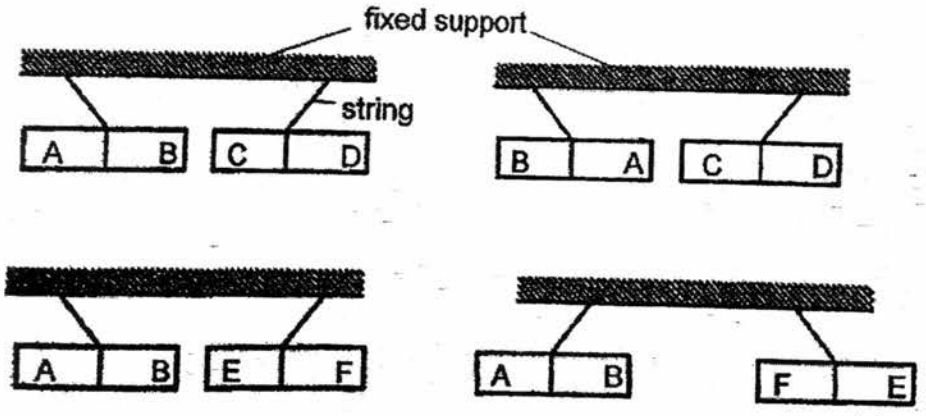
_____

_____

www.testpapersfree.com

Downloaded from SingaKids.com

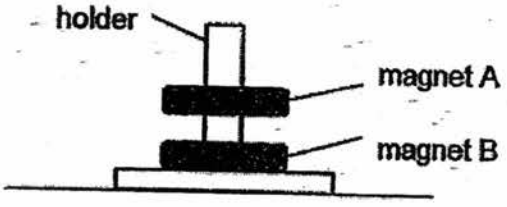
36. Andy wanted to find out which of the three metal bars AB, CD and EF are magnets. He hung each bar from a string and brought them near each other. His results are shown in the diagram below.



(a) What materials are metal bars AB, CD and EF made of? Tick (✓) the correct answer in the boxes provided below. [2]

Metal Bars	Magnet	Magnetic material	Non-magnetic material
AB			
CD			
EF			

Andy placed two ring magnets A and B, through a holder shown below.



(b) The holder was made of wood and did not attract the magnets. [1]

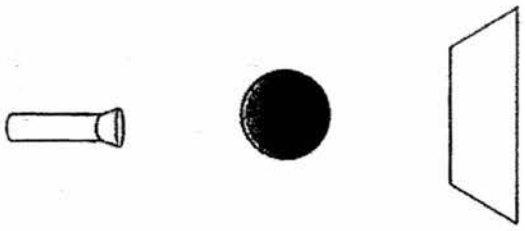
Wood is a _____ material.

(c) Why was magnet A floating above magnet B? [1]

Magnet B was _____ magnet A.

www.testpapersfree.com
Downloaded from SingaKids.com

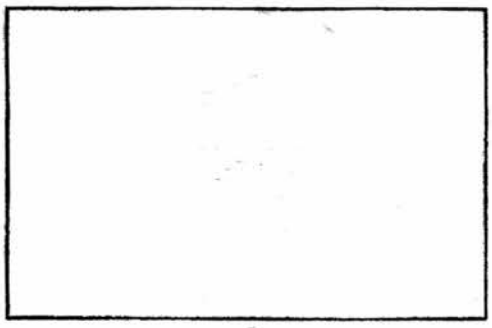
37. Eric shines a torch on a ball and a shadow is formed on a smooth wall.



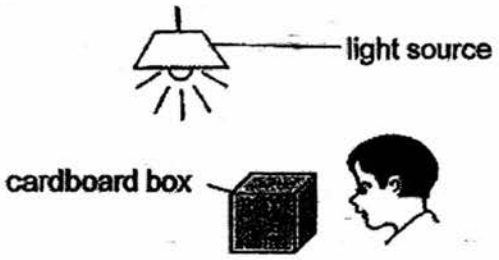
torch ball wall

(a) A shadow is formed when light is _____ by an object. [1]

(b) Draw the shadow of the ball that is formed on the wall in the box below. [1]



Study the diagram below.

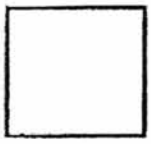


There is a cake in the cardboard box.

(c) Explain why Eric <u>cannot see</u> the cake in the cardboard box. [1]

_____

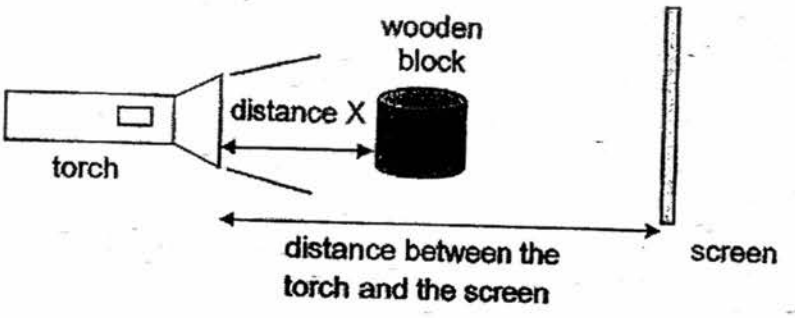
_____



www.testpapersfree.com

Downloaded from SingaKids.com

38. Study the diagram shown below.



Catherine wanted to find out if the distance of the wooden block from the torch (distance X) would affect the height of the shadow cast on the screen. Her results are recorded in the table below.

Distance between the torch and screen (cm)	Distance X (cm)	Height of the shadow (cm)
50	5	42
50	10	35
50	15	?
50	20	21

(a) What should the height of the shadow be when distance X is 15 cm? [1]

(b) Based on the results shown above, what is the relationship between distance X and the height of the shadow formed on the screen? [1]

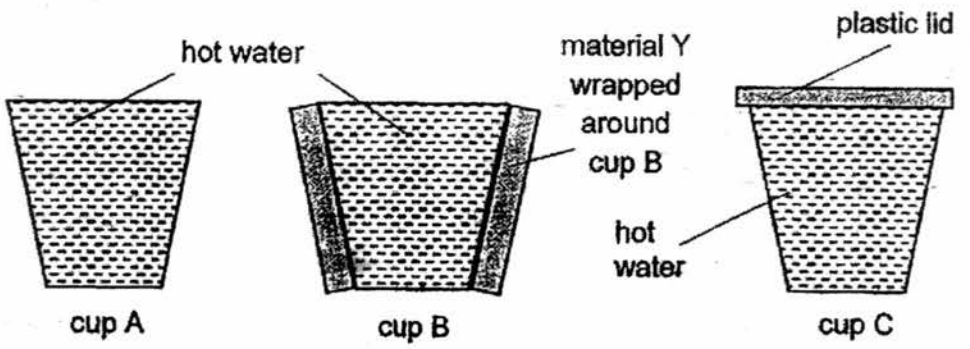
(c) Without moving the wooden block, suggest two ways to make the shadow smaller on the screen. [2]

(i)

(ii)

www.testpapersfree.com
Downloaded from SingaKids.com

39. Janice wanted to find out which is the best way to keep water warm. She filled three similar paper cups with equal amounts of hot water as shown in the diagram below. The cups were placed on the table in a room.



She measured the temperature of the water in each cup at five-minute intervals and recorded the results in the table below.

Time (min)	Temperature of water (°C)		
	Cup A	Cup B	Cup C
0	94	94	94
5	75	86	80
10	60	70	65
15	48	58	51
20	30	40	35
25	30	30	30

(a) In which cup did the water cool the fastest? Explain your choice. [1]

_____

(b) Based on Janice's results, what can you conclude about material Y? [1]

_____

_____

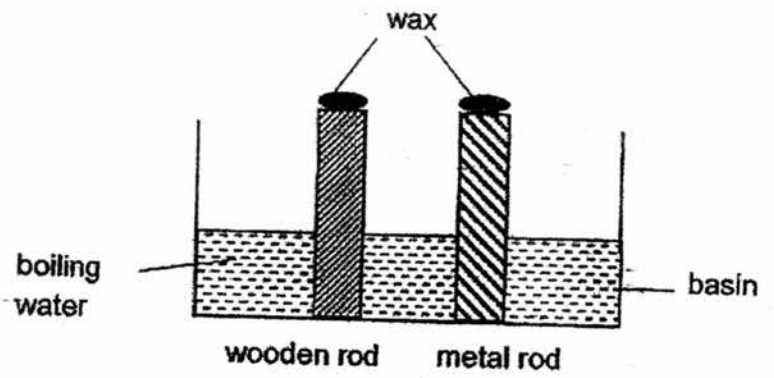
(c) What was the room temperature? Give a reason for your answer. [2]

_____

_____

www.testpapersfree.com
Downloaded from SingaKids.com

40. Sarah placed two rods into a basin of boiling water as shown below. Equal amounts of wax were put on both rods.



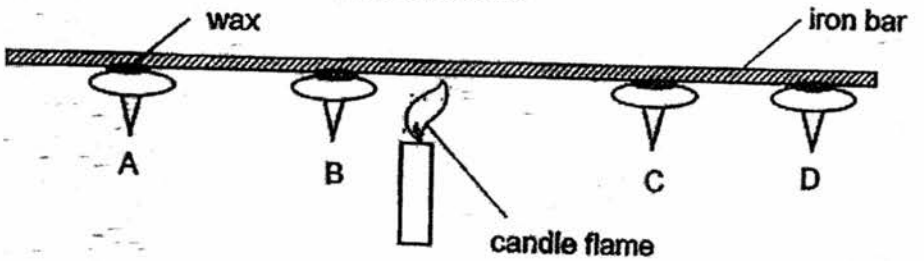
(a) What would Sarah observe after two minutes ? [1]

The wax on the wooden rod melted _____ than the wax on the metal rod.

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

Wood is a _____ conductor of heat than metal.

Four thumbtacks A, B, C and D were attached to an iron bar with the same amount of wax as shown in the diagram below.



(c) Which thumbtack would drop from the rod first? Explain why. [2]

_____

_____

www.testpapersfree.com
Downloaded from SingaKids.com

41. Mr Koh weighed four different materials W, X, Y and Z of the same size and thickness. He soaked them in a basin of water for three minutes and weighed them again. He recorded his results in the table below.

Material	Mass before soaking (g)	Mass after soaking (g)
W	15	35
X	25	25
Y	40	70
Z	200	200

(a) State a property of the material Mr Koh is investigating based on his results. [1]

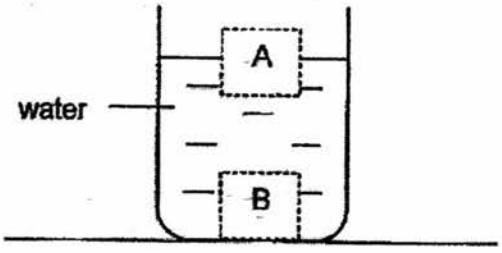
_____

(b) Which material W, X, Y or Z is the most suitable material to be used to make a raincoat? Give **two** reasons to support your answer. [1]

_____

_____

Mr Koh placed two different blocks A and B into a beaker of water as shown below.



(c) Fill in the blanks using the correct words in the box.

contracts	expands	sinks	floats

This experiment shows that block A_____ in water, and block B_____ in water. [2]

END OF BOOKLET B

www.testpapersfree.com

Downloaded from SingaKids.com

www.testpapersfree.com

Downloaded from SingaKids.com

www.testpapersfree.com

SCHOOL : CHIJ ST NICOLAS PRIMARY SCHOOL

LEVEL : PRIMARY 4
SUBJECT : SCIENCE
TERM : 2017 SA2

CONTACT :

SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
1	3	2	3	3	3	3	4	2	3

Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
1	4	3	1	1	2	1	4	1	2

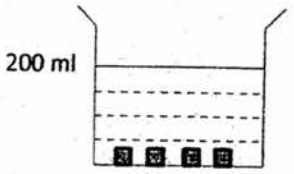
Q 21	Q22	Q23	Q24	Q25	Q 26	Q27	Q28
1	2	3	3	2	1	3	1

SECTION B

Q29)	a) Y b) Number of seeds in each pot √ Amount of water √ Amount of soil √ Type of seeds Location of pot √
Q30)	a) The spore bags b) The function of these brown spots is to help the plant to reproduce. c) Yes because it still have leaves to make food for the plant and its roots can still absorb water for the plants to make food.
Q31)	a) It does not have scales and has six legs and three body parts. b) An insect c) Can it fly? √

www.testpapersfree.com

Downloaded from SingaKids.com

Q32)	a) It is the digestive juices b) The water from the undigested food would be absorbed through the walls of D and passed out by the anus. c) The circulatory system
Q33)	a) The air in the glass tube gained heat and expanded and it took up more space and so air was pushed out of the glass flask. b) There would be no more bubbles Water may enter the glass tube to raise the water level.
Q34)	a) Tea → Liquid Cup → Solid b) 
Q35)	a) Rod X as it was stroke lesser times as compared to Y and thus has weaker magnetic strength. b) Reason 1 : He did not stroke it in one direction Reason 2 : He used a different pole
Q36)	a) AB → Magnet, CD → Magnetic Material, EF → Magnet b) non-magnetic c) repelling
Q37)	a) Blocked b)  c) Light cannot be reflected off the cake and into his eyes.

www.testpapersfree.com

Downloaded from SingaKids.com

Q38)	a) 28 cm b) As distance X increases, the height of the shadow decreases. c) i) Move the torch further from the wooden block ii) Move the screen closer to the wooden block.
Q39)	a) Cup A. As it reached the room temperature the fastest and lost heat to the surroundings the fastest. b) Material Y is a poor conductor of heat. c) 30^0C. All set-ups reached 30^0C at the end of the experiment. There is no heat gain or heat loss as they are at the room temperature.
Q40)	a) slower b) poorer c) B. It was the closest to the candle flame so the wax on B would gain heat the fastest.
Q41)	a) If Material X, W, Y and Z are waterproof. b) X. It is waterproof and is better than Z. c) floats, sinks

www.testpapersfree.com

Downloaded from SingaKids.com

www.testpapersfree.com

Downloaded from SingaKids.com