Anglo-Chinese School (Junior)

SEMESTRAL ASSESSMENT 2 (2019)

PRIMARY 4

SCIENCE

BOOKLET A

Thursday **31 October 2019** **1 hr 45 min**

Name: _____ ( ) Class: 4.( )

INSTRUCTIONS TO PUPILS

1 Do not turn over the pages until you are told to do so.

2 Follow all instructions carefully.

3 There are 28 questions in this booklet.

4 Answer ALL questions.

5 Shade your answers in the Optical Answer Sheet (OAS) provided.

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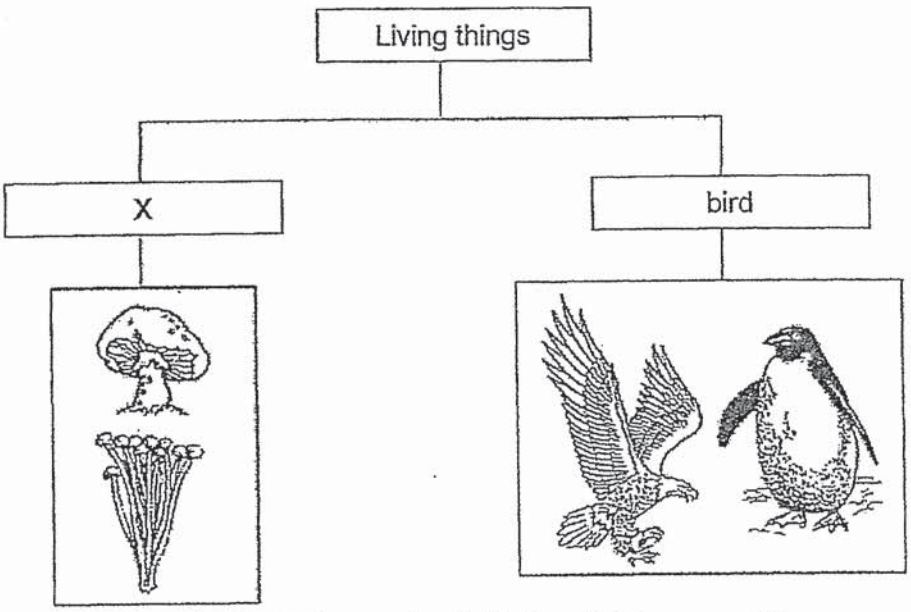
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Booklet A

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 your answer on the Optical Answer Sheet.

(56 marks)

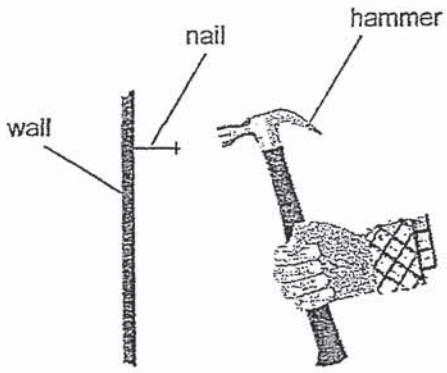
1. The table shows how some living things can be grouped.



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

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

2. The diagram shows a nail being hammered into the wall.



Iron is used to make nails because iron _____.

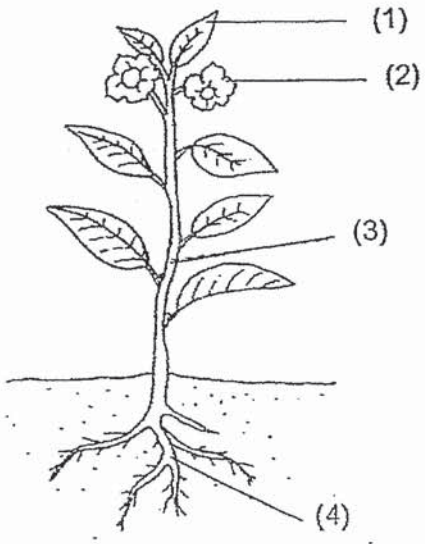
(1) is shiny
(2) is strong
(3) sinks in water
(4) conducts heat well

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3. In which part of the digestive system is there no digestion taking place?

(1) mouth
(2) stomach
(3) small intestine
(4) large intestine

4. Which part, (1), (2), (3) or (4), helps the plant to absorb water?



5. Which animal has a larva stage in its life cycle?

(1) frog
(2) chicken
(3) mosquito
(4) grasshopper

6. Which of the following properties is true for both air and a piece of stone?

(1) They can be seen.
(2) They take up space.
(3) They have fixed shapes.
(4) They can be compressed.

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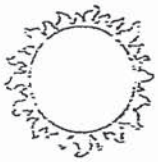
7. Which of the following can be attracted by a magnet?

(1) steel rod
(2) plastic rod
(3) rubber rod
(4) wooden rod

8. Which of the following is a source of light?

(1) 
Apple

(2) 
Bee

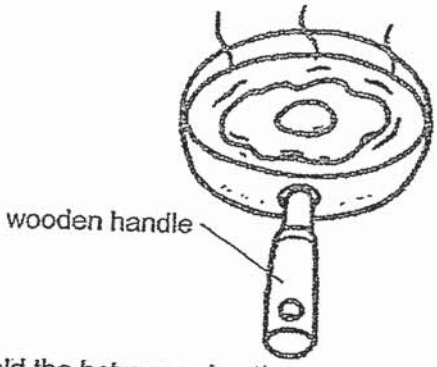
(3) 
Sun

(4) 
Book

9. Which of the following is the best conductor of heat?

(1) metal spoon
(2) wood spoon
(3) paper spoon
(4) ceramic spoon

10. Shaun fried an egg on a pan.



He is able to hold the hot pan using the wooden handle. This is because wood is a _____.

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

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11. Which two body systems work together to supply oxygen to the body?

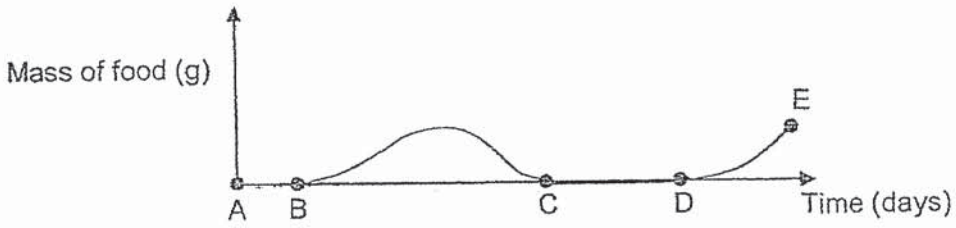
(1) Muscular and Skeletal System

(2) Digestive and Circulatory System

(3) Digestive and Respiratory System

(4) Respiratory and Circulatory System

12. The graph shows the mass of food that is eaten at different stages, AB, BC, CD and DE, in the life cycle of a beetle.



If DE is the adult stage of the beetle, which of the statements are true about the graph?

X AB represents the larva stage.
Y CD represents the pupa stage.
Z The most amount of food was eaten during BC.

(1) X and Y only

(2) Y and Z only

(3) X and Z only

(4) X, Y and Z

13. The table shows the comparisons between a cockroach and a chicken made by four students.

	Characteristics	Cockroach	Chicken
Anna	The adult lays eggs in water.	No	No
Billy	The animal has 4 stages in its life cycle.	Yes	No
Chris	The young looks like the adult.	Yes	Yes
Dorothy	The adult has wings.	No	Yes

Which two students made the correct comparisons?

(1) Anna and Chris

(2) Anna and Billy

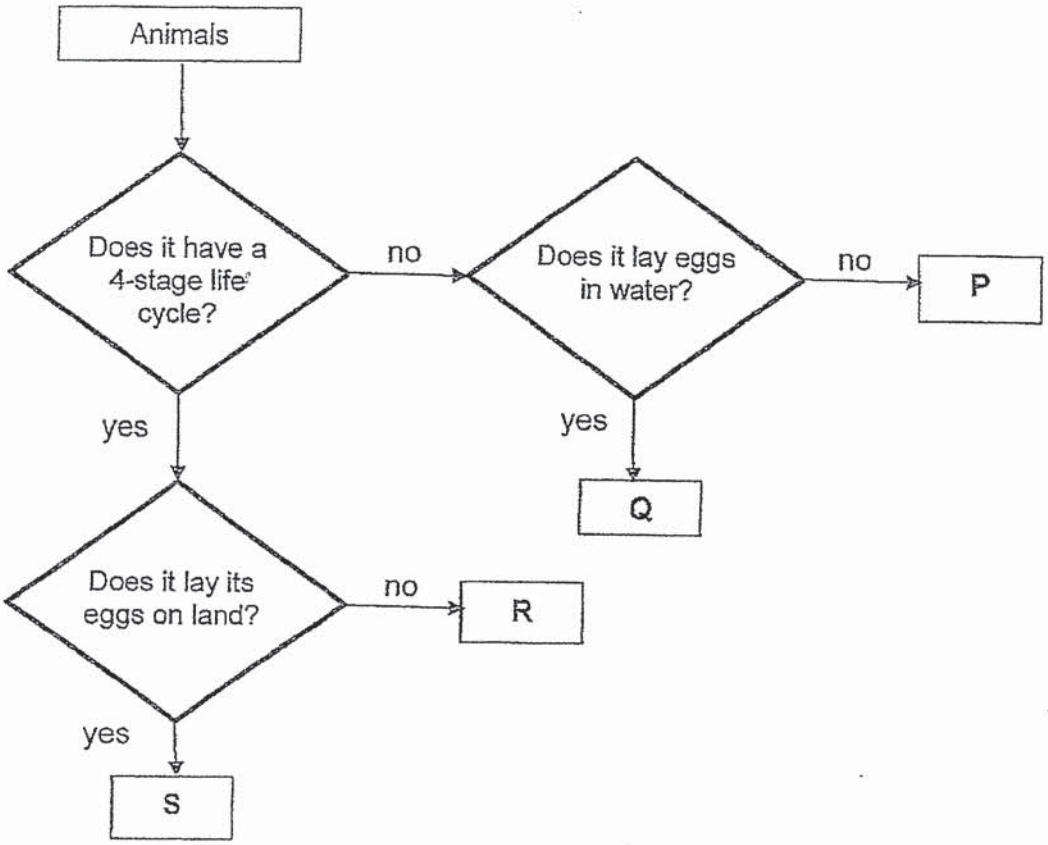
(3) Billy and Chris

(4) Billy and Dorothy

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14. Study the flow chart shown below.



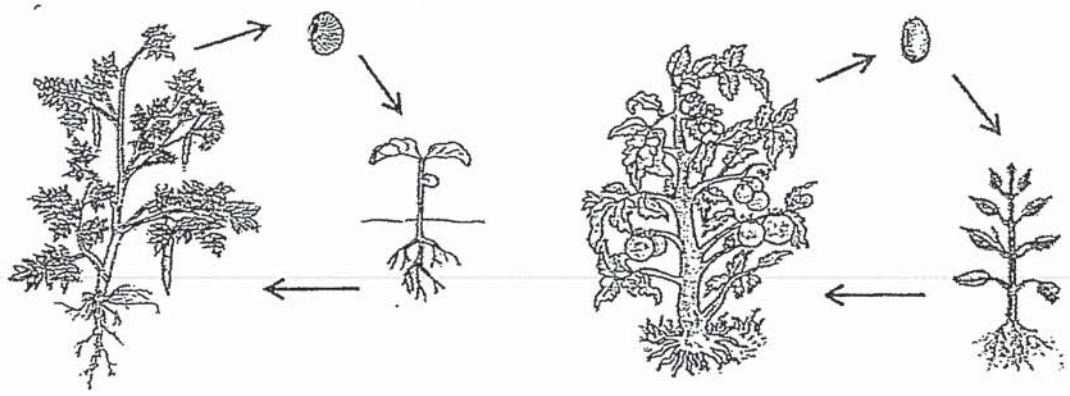
Based on the flow chart shown above, which of the following animals correctly matches animals P, Q, R and S?

	P	Q	R	S
(1)	grasshopper	frog	mosquito	butterfly
(2)	grasshopper	mosquito	frog	butterfly
(3)	frog	grasshopper	mosquito	butterfly
(4)	frog	grasshopper	butterfly	mosquito

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15. Study the following diagrams carefully.



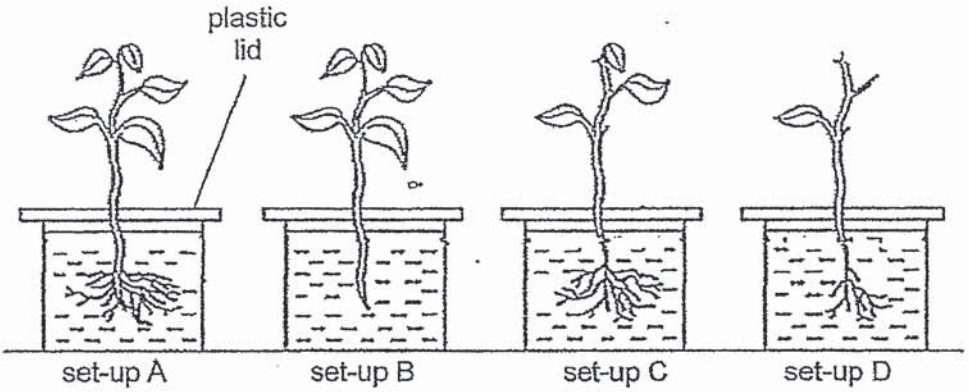
Plant X Plant Y

Based on the diagrams, which of the following statements about both plants, X and Y are correct?

A Both plants have strong stems.
B Seed of Plant Y grows into a young plant faster.
C Plant X is a flowering plant but Plant Y is a non-flowering plant.
D Both plants have the same number of stages in their life cycles.

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

16. Ming Yao removed some parts from four identical plants and placed them into identical containers with the same volume of water as shown.

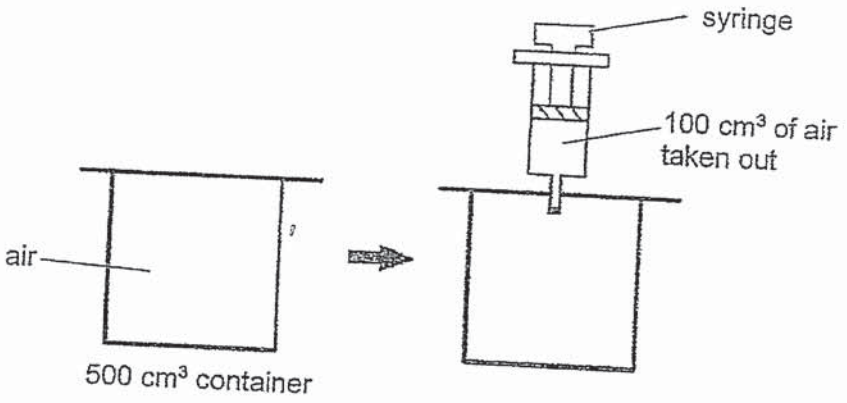


Which two set-ups should he use to investigate if plants absorb water through their roots?

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

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17. A 500 cm^3 container was filled with air. 100 cm^3 of air was then taken out from the container using a syringe.



Which of the following about the mass and volume of air left in the container is correct?

	Mass of air in container	Volume of air left in container
(1)	remained the same	remained the same
(2)	remained the same	decreased
(3)	decreased	remained the same
(4)	decreased	decreased

18. Which of the following are **not** matter?

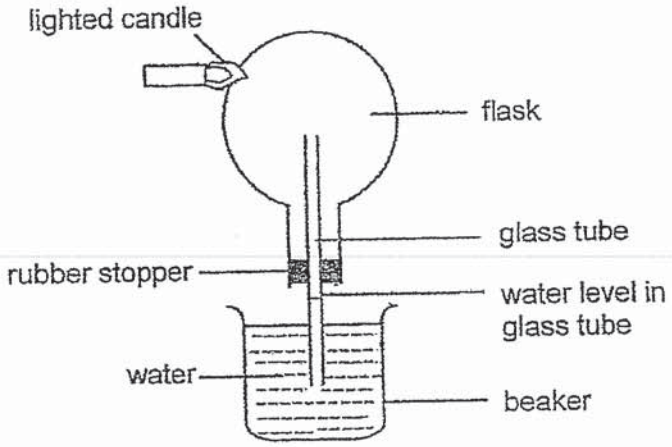
A light
B heat
C wind
D sound

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

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19. Hakim set-up an experiment as shown. He used a lighted candle to heat the flask for only ten minutes.



What change did he observe about the water level in the glass tube during the next five minutes?

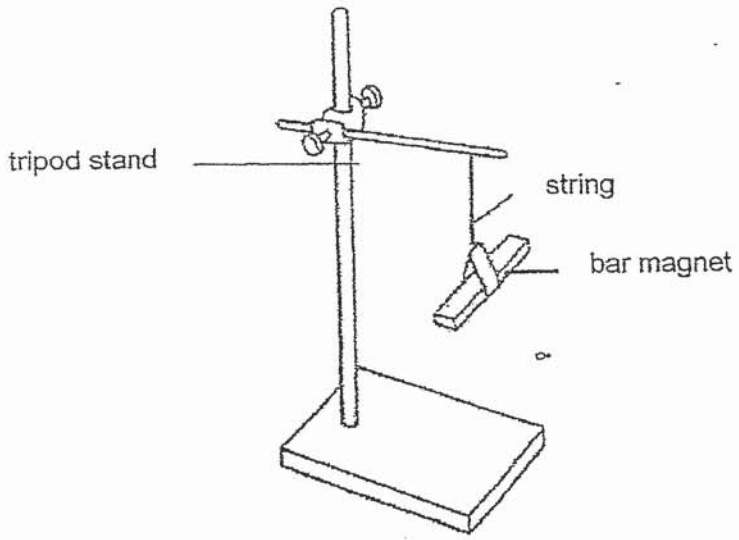
(1) It increased.

(2) It decreased.

(3) It remained the same.

(4) It increased and then decreased.

20. The diagram shows a freely suspended bar magnet.



In which direction will it come to rest?

(1) East-West

(2) South-East

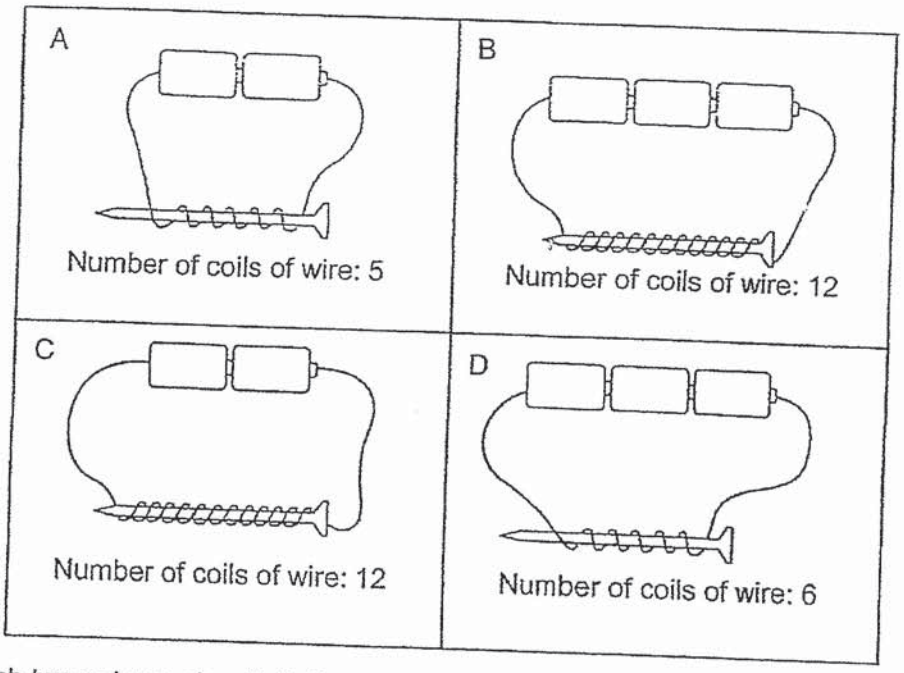
(3) North-West

(4) North-South

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21. Ruth wanted to find out if the number of batteries affects the magnetic strength of an electromagnet.

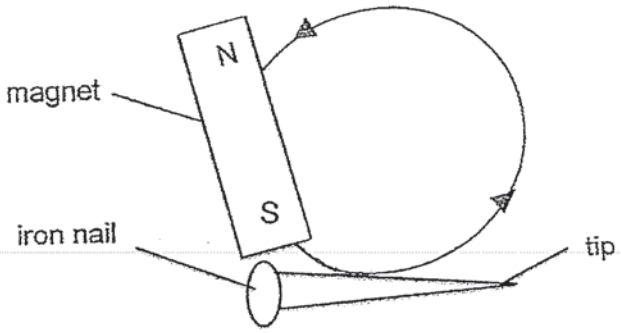


Which two set-ups should Ruth use to test the aim of her experiment?

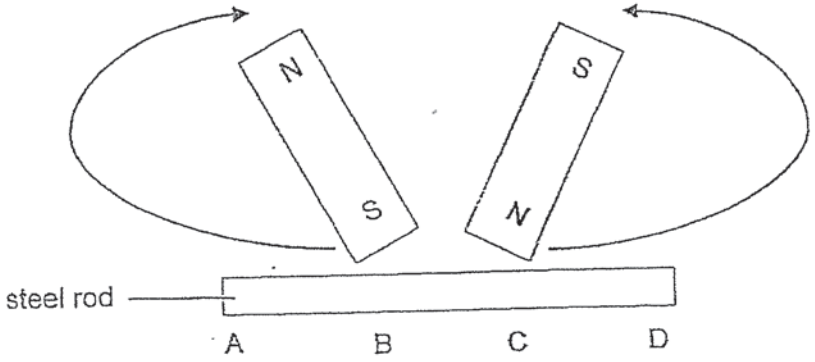
(1) A and B
(2) A and C
(3) B and C
(4) C and D

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22. Tom used the stroke method to magnetise an iron nail as shown. The tip of the nail became the north pole of the temporary magnet.



He then stroked a steel rod using two bar magnets as shown in the diagram. After some time, the steel rod was magnetised.

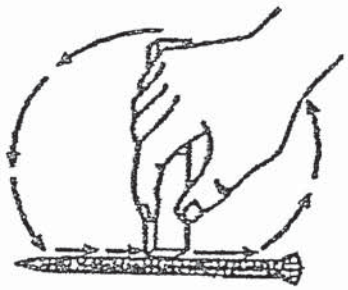


Which part of the temporary magnet, A, B, C or D, would become the North pole?

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

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23. Raju used the stroke method on four identical nails, A, B, C and D as he wanted to find out how the magnetic strength of a temporary magnet is affected by the number of strokes of a magnet. He tested the magnetic strength of each iron nail by letting it attract some paper clips.



He recorded his results in the table.

Nail	Number of strokes	Number of paper clips attracted by X
A	15	2
B	30	4
C	45	5
D	60	7

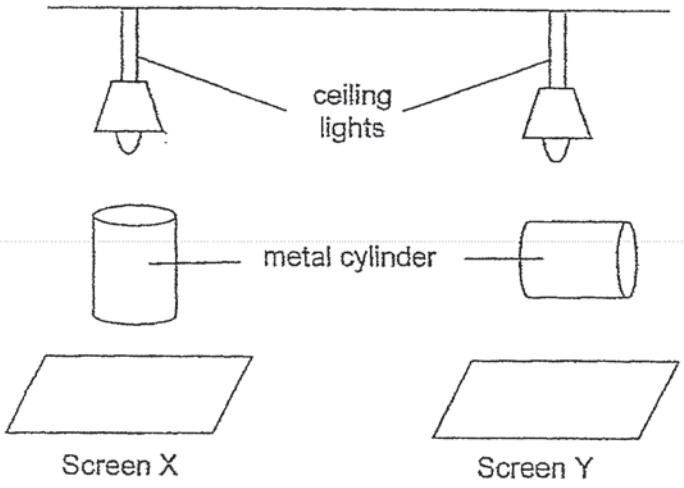
Based on the results, which of the following shows the correct relationship between the number of strokes and the magnetic strength of the nails?

	Number of strokes	Magnetic strength of nails
(1)	increase	remains the same
(2)	increase	stronger
(3)	decrease	stronger
(4)	decrease	remains the same

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24. Janet placed two identical metal cylinders in different positions in a dark room under the ceiling lights. Shadows were formed on screens X and Y.

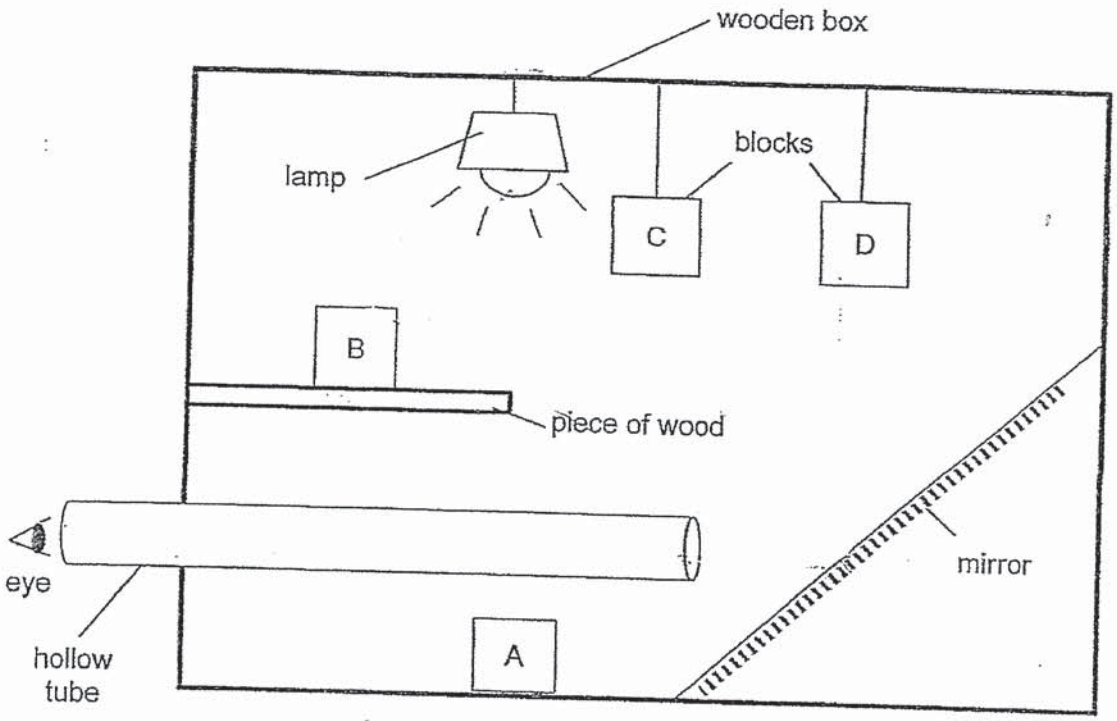


Which of the following shadows would she observe on screens X and Y?

	Screen X	Screen Y
(1)		
(2)		
(3)		
(4)		

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25. Four blocks, A, B, C and D, were placed at different positions in a wooden box as shown.



Which block, A, B, C or D, can be seen when you look through the hollow tube?

(1) A

(2) B

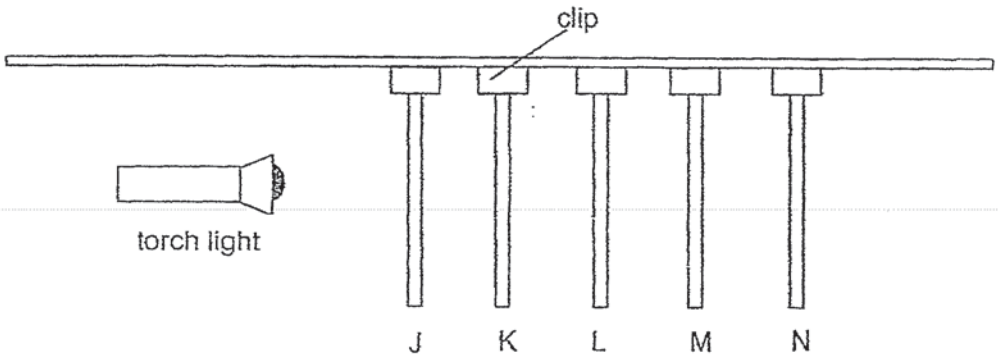
(3) C

(4) D

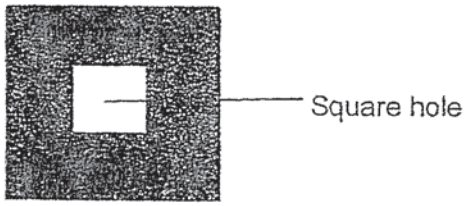
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26. John hung five similar sheets made of different materials on a pole with clips as shown.



Only Sheet J has a square hole in the middle as shown below.



Sheet J

The table shows the transparency of the different materials.

Allows most light to pass through	Does not allow any light to pass through
K	J
L	M
N	

Which sheet would have a square patch of light on it when the torch is on?

(1) K

(2) L

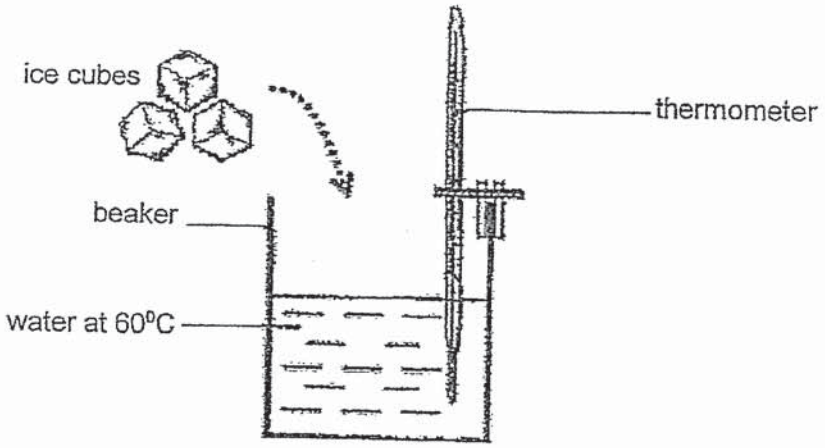
(3) M

(4) N

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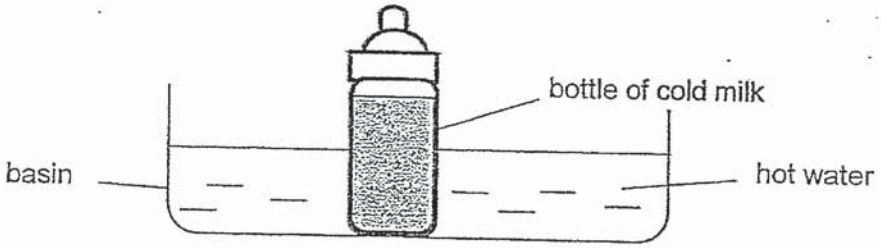
27. Rahim set up the experiment as shown.



Which of the following shows the correct change in the water level and temperature of water a minute after he placed some ice cubes in the beaker?

	Water level	Temperature of water
(1)	Increases	Remain the same
(2)	Increases	Decrease
(3)	Decreases	Decrease
(4)	Decreases	Increase

28. Janet places a bottle of cold milk into a basin of hot water as shown.



Which of the following statements are true?

A The milk gains heat from the water.

B The milk gains heat from the surrounding air.

C The temperature of the water remains the same.

D The temperature of the milk increases for a period of time.

(1) A and D only

(2) B and C only

(3) A, B and D only

(4) A, C and D only

End of Booklet A

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Anglo-Chinese School (Junior)

SEMESTRAL ASSESSMENT 2 (2019)

PRIMARY 4

SCIENCE

BOOKLET B

Thursday **31 October 2019** **1 hr 45 min**

Name: _____ ( ) Class: 4.( ) Parent's Signature:_____

INSTRUCTIONS TO PUPILS

1 Do not turn over the pages until you are told to do so.

2 Follow all instructions carefully.

3 There are 13 questions in this booklet.

4 Answer ALL questions.

5 The marks are given in the brackets [ ] at the end of each question or part question.

Booklet	Possible Marks	Marks Obtained
A	56	
B	44	
Total	100	

This question paper consists of 14 printed pages (inclusive of cover page).

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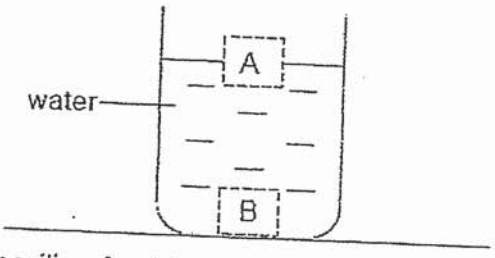
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Booklet B

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

(44 marks)

29. Billy placed two different blocks, X and Y, into a beaker of water as shown.



Block X was found at position A, while block Y was found at position B.

Fill in the blanks using the correct words in the box. [3]

expands	contracts	floats	sinks	A	B

This shows that block X _____ in water, and block Y _____ in water. A solid metal block when placed in the beaker of water will most likely be found at position _____.

30. Fill in the correct parts of the plant in the table. [2]

Functions of plant parts	Plant parts
It takes in water for the plant.	
It helps the plant make food when there is light.	

31. Place a tick (✓) in the box if each of the following matter has a definite shape and/or a definite volume. [3]

		has definite shape	has definite volume
(a)	orange juice	☐	☐
(b)	air	☐	☐
(c)	pencil	☐	☐

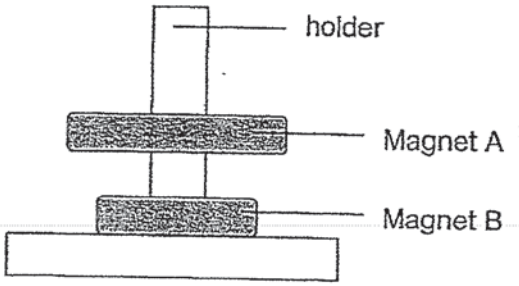
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32. Alice placed two ring magnets, A and B, through a holder as shown.



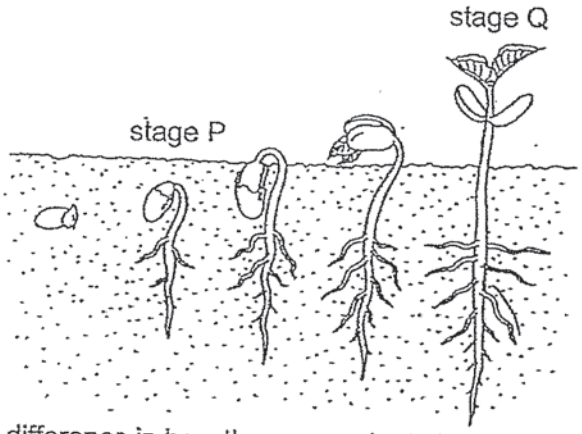
(a) The holder was made of plastic and did not attract the magnets. [1]

Plastic is a _____ material.

(b) Why is magnet A floating above magnet B? [1]

Magnet B _____ magnet A.

33. The diagram shows the growth of a seed into a young plant.



(a) Describe the difference in how the young plant obtains food at stages P and Q. [2]

_____

_____

_____

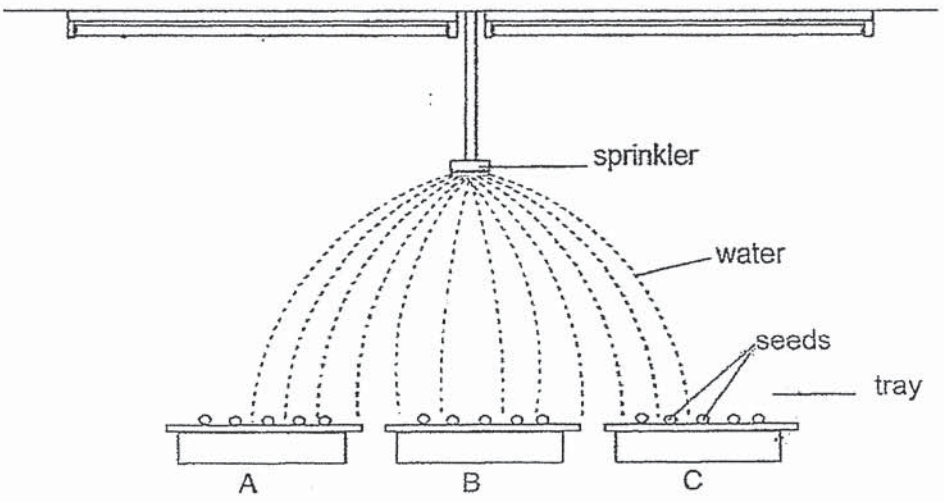
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SCORE 4

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33. (b) Some students placed three identical trays, A, B and C, in the school garden, each with equal amount of soil and five red bean seeds. An automatic sprinkler waters the plants every morning as shown in the diagram.



(i) State the conditions necessary for the seeds to germinate. [1]

_____

(ii) After a few weeks, the plants in trays A and C did not grow as well as those in tray B. Give a reason why. [1]

_____

_____

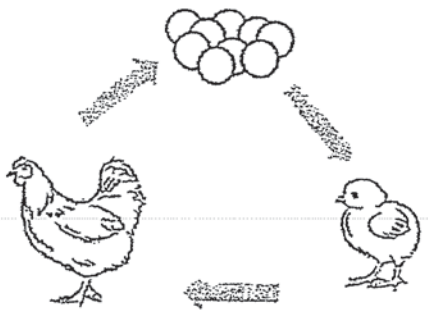
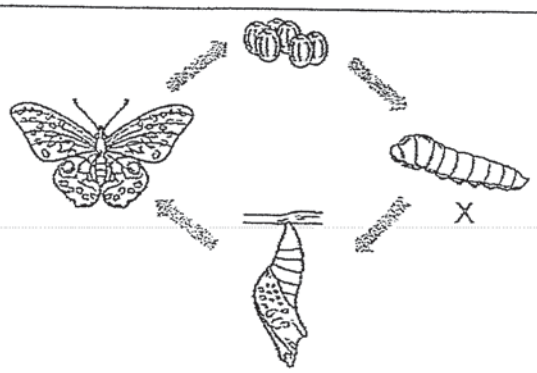
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SCORE | 2

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34. The diagrams show the life cycles of animals G and H.

Animal G	Animal H
	

(a) Name stages X and Y in the life cycle of Animal H. [1]

X: _____

Y: _____

(b) Based on your observations of the above diagrams, state a similarity and difference between the two life cycles. [2]
(Note: Do not compare shape, colour and size of the animals)

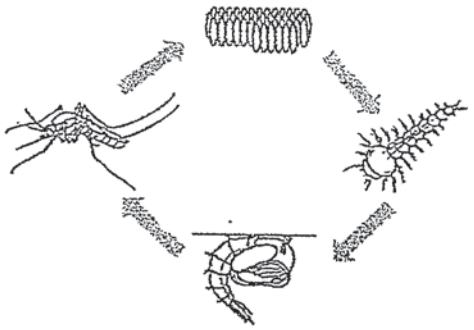
Similarity: _____

_____

Difference: _____

_____

(c) The life cycle of a mosquito is as shown.



State a difference between the life cycle of a mosquito and Animal H. [1]

_____

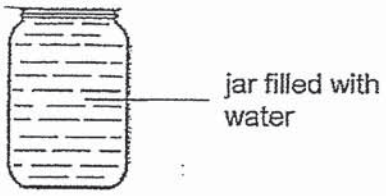
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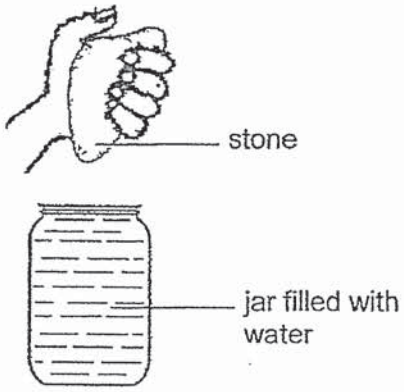
35. Clare filled a jar with water to the brim as shown in the diagram.



(a) State the property of water that allowed it to be poured easily into the jar. [1]

_____

(b) Clare then added a piece of stone into the jar of water.



Using the property of matter, explain clearly why the water in the jar flowed out when the stone was added in. [2]

_____

_____

_____

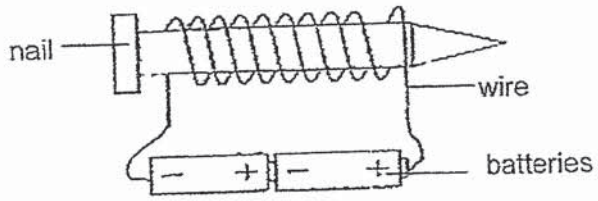
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SCORE	/ 3

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36. Jason wanted to make four electromagnets using four different nails.



He recorded in the table the number of thumbtacks attracted to each electromagnet when the different nails were used.

Nail	Number of thumbtacks attracted
W	7
X	3
Y	0
Z	5

(a) What material could nail Z be made of? [1]

_____

(b) Explain why the metal paper-clips were not attracted to nail Y? [1]

_____

_____

(c) State 2 ways to increase the strength of the electromagnet when nail X was used. [1]

_____

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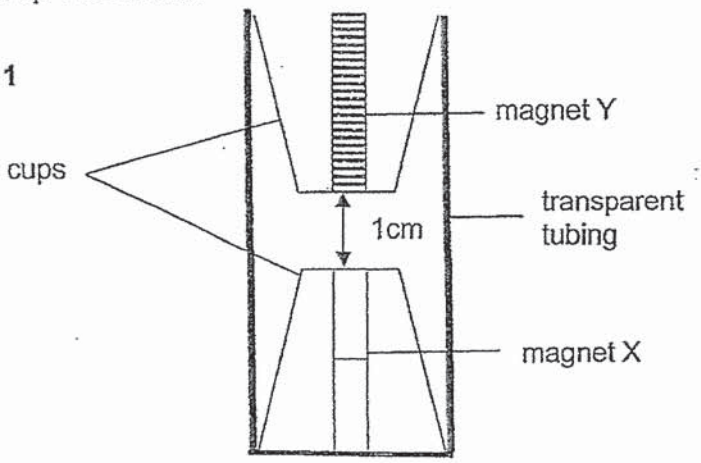
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37. Luis glued two bar magnets, X and Y, each to the base of identical plastic cups. He prepared set-up 1 as shown.

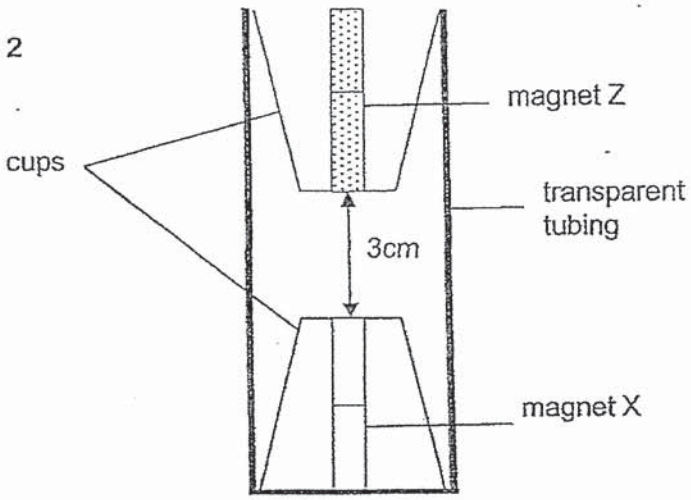
Set-up 1



(a) Luis observed that the cup with magnet Y was floating above the one with magnet X. Explain why. [2]

Luis then glued magnet Z to the base of another identical plastic cup. He prepared set-up 2 as shown.

Set-up 2



(b) He observed that the cup with magnet Z was also floating above the cup with magnet X. Based on his observations of set-ups 1 and 2, what can he conclude about the magnetic strength of magnet Z? Explain your answer. [2]

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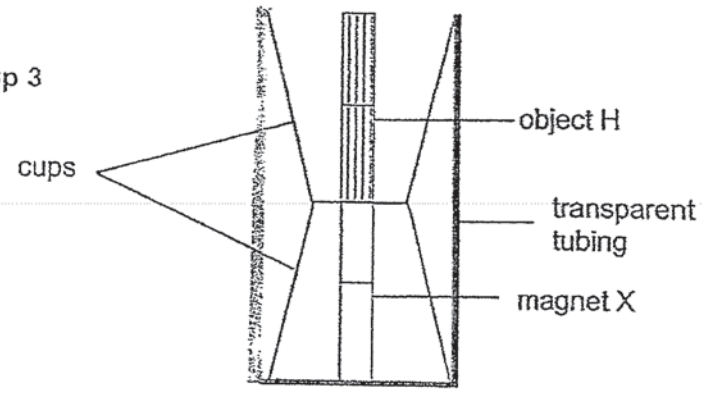
SCORE		4

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37 Luis then glued object H to the base of another identical plastic cup. He prepared set-up 3 as shown.

Set-up 3



(c) Without removing or replacing anything in the set-up 3, describe what Luis can do to confirm if object H is a magnet? [1]

_____

_____

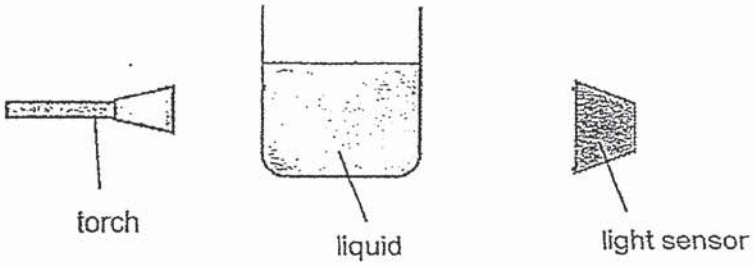
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SCORE 1

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38. Jason set up the following experiment with three different liquids in identical beakers.



He used the same light sensor to measure the amount of light that passed through each liquid using the same torch. He recorded the data in the table.

Liquid	Intensity of light (unit)
A	100
B	0
C	150

(a) What was the aim of his experiment? [1]

_____

_____

(b) Give an example of liquid B. [1]

_____

(c) State one variable that Jason needs to keep constant for a fair test. [1]

_____

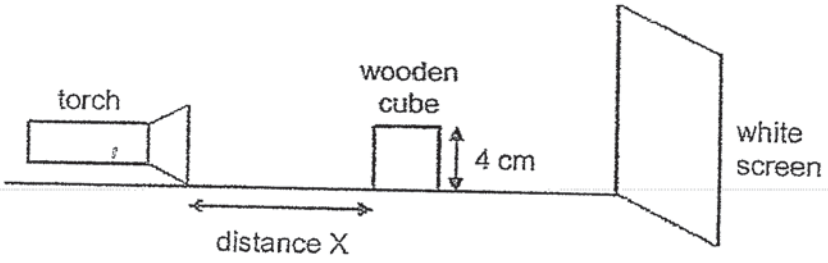
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39. Mrs Tan conducted an experiment using a torch, a wooden cube and a white screen as shown in the diagram.



She moved the wooden cube to find out its effect on the size of the shadow formed on the screen. Her findings are recorded in the table.

distance X (cm)	height of the shadow formed on the screen (cm)
10	30
20	24
30	14
40	8

(a) Based on the findings, what is the relationship between distance X and the height of the shadow formed on the screen? [1]

(b) What can she do to the white screen if she wants to form a smaller shadow? [1]

(c) Explain how the wooden cube formed a shadow on the white screen. [1]

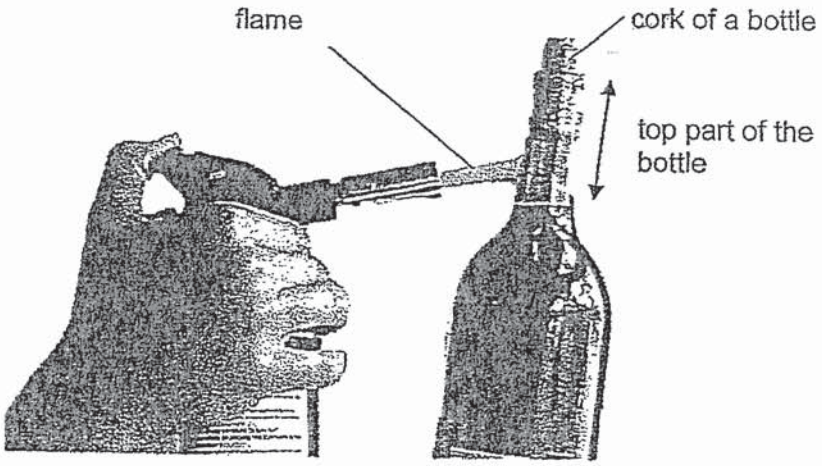
(d) Suggest the height of the shadow formed on the screen if a wooden cube of height 3 cm is used, given that distance X is 40 cm. [1]

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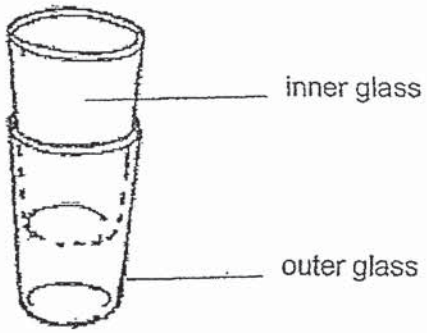
40. Jacob tried to pull a cork from a bottle of vinegar but was unable to do so. His brother suggested heating the top part of the bottle with a flame.



Jacob was able to remove the stopper easily after heating the top part of the bottle.

(a) Explain why Jacob could remove the stopper easily. [2]

Jacob found two glasses stuck to each other as shown.



(b) Suggest what Jacob can do to the glass(es) to separate them without breaking them? Explain clearly how your suggestion works. [2]

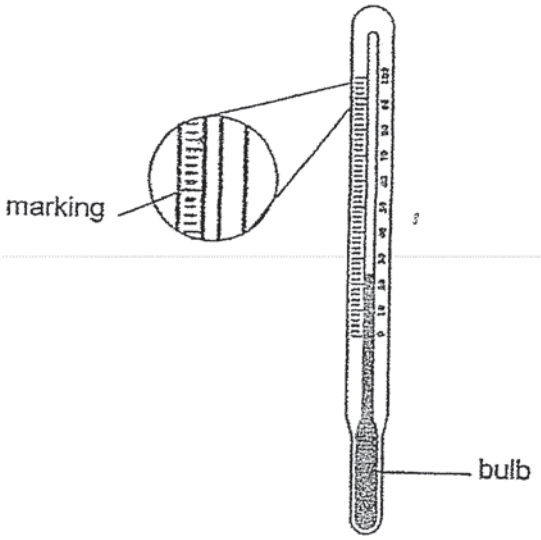
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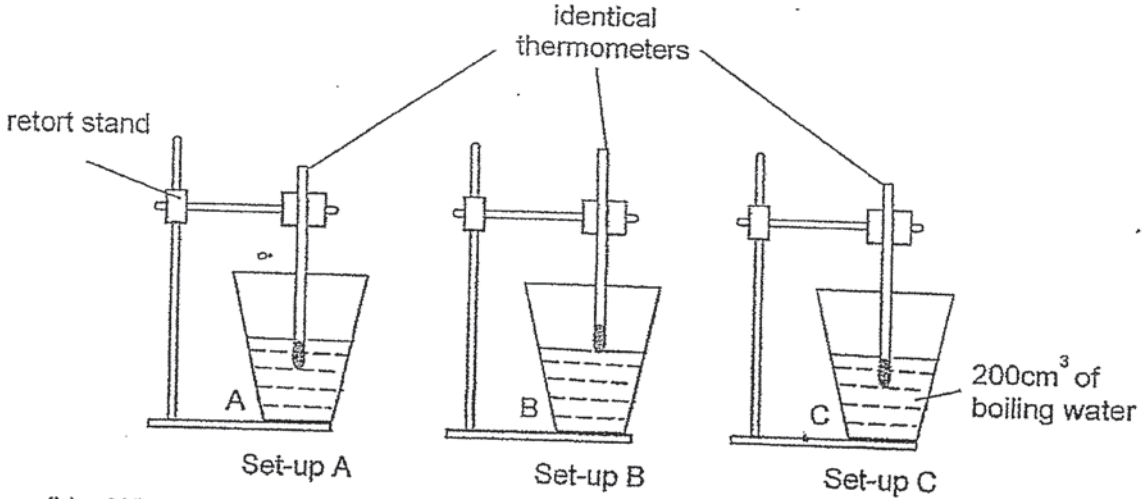
41. Joyce wanted to use a thermometer to read the temperature of water.



(a) Order the following steps in reading the thermometer by writing 1, 2 and 3 in the boxes provided. [1]

Step	
	Position your eye at the same level as the liquid in the thermometer.
	Hold the thermometer upright.
	Read the marking of the liquid in the thermometer.

Joyce set up an experiment as shown to find out how the materials of cups, A, B and C, affect the temperature of water.



(b) What change must Joyce make to the set-up(s) to ensure a fair test? [1]

_____

_____

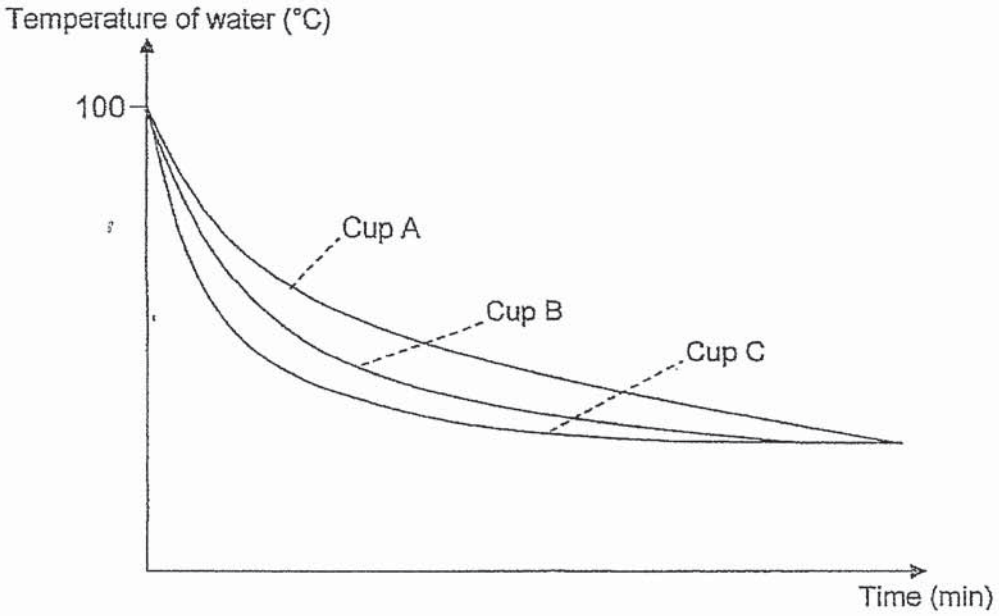
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SCORE 2

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41. The changes in the temperatures of the water in the three cups were then recorded over a period of time.



(c) Which cup is most suitable to store ice cubes? Explain your answer based on the results. [2]

_____

_____

End of Paper

SCORE	
	2

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ANSWER KEY

YEAR: 2019

LEVEL: PRIMARY 4

SCHOOL: ANGLO-CHINESE SCHOOL (JUNIOR)

SUBJECT: SCIENCE

TERM: SEMESTRAL ASSESSMENT 2

BOOKLET A

SUBJECT	TEST	SCORE	SCORE(%)
Science	SA2	46 / 56	

Primary 4-4 (2019)														
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
2	2	4	4	3	2	1	3	1	3	4	2	1	1	1
Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
1	4(3)X	4	2(1)X	4	3	3(1)X	2	4	2(4)X	3	3(2)X	3		
Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q40	Q41	Q42	Q43	Q44	Q45
Q46	Q47	Q48	Q49	Q50	Q51	Q52	Q53	Q54	Q55	Q56	Q57	Q58	Q59	Q60

BOOKLET B

Q29. Floats, sinks, B

Q30. Roots, Leaves

Q31. (a) has definite volume

(b) no tick

(c) has definite shape

has definite volume

Q32. (a) non-magnetic

(b) repels

Q33. (a) Stage P depends on the seed leaves for food while stage Q uses its leaves to absorb sunlight for photosynthesis to make food for itself.

Air, water and warmth is needed for germination.

(ii) The seeds is tray A and C did not receive as much water as the seeds is tray A and C did not receive as much water as the seeds in tray B.

Q34. (a) X: larva Y: pupa

(b) Similarity: They both have the egg stage.

Difference: The young of animal G resembles the adult while the young of animal H does not.

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(c) The mosquito spends part of its life cycle in water while animal H spends all of its life cycle on land.

Q35. (a) Water does not have a definite shape.

(b) The stone takes up space in the jar, so the stone displaced the water and since water has no definite shape, it will flow out of the jar.

Q36. (a) Nail Z could be made of iron.

(b) Nail Y is not a magnetic material thus, the set up would not work, therefore not attracting any thumbtacks.

(c) Increase the number of batteries used.

Increase the number of coil around the nail.

Q37. (a) The like poles of magnet X and Y were facing each other, thus repelling each other making the cup with magnet Y float above the cup with magnet X.

(b) Magnet Z is a stronger magnet than magnet Y. Since the cup with magnet Z floated higher than magnet Y, this shows that the repelled distance was longer, thus showing that magnet Z is a stronger magnet than magnet Y.

(c) He could flip the cup around and find out if the cup with object H would float above the cup with magnet X.

Q38. (a) To find out if which liquid allows the most light to pass through.

(b) milk

(c) The amount of liquid must be kept constant.

Q39. (a) The more distance X is, the more the height of the shadow would increase.

(b) She could move the white screen closer to the wooden cube.

(c) The light from the torch which travels in a straight line is blocked by the wooden cube which is opaque.

(d) 6cm

Q40. (a) air in the top part of the bottle gained heat from the flame and expan

(b) He could put ice cubes into the inner glass, so that the glass will lose heat to the ice and contract.

Q41. (a) 2, 1, 3

(b) She place all the thermometers at the same level into the boiling water so that it measures the temperature of the water.

(c) Cup A. Cup A conducted heat from the water to the surrounding the slowest. This shows that cup A is a poor conductor of heat, showing that it would transfer heat the slowest and is thus suitable to store ice cubes.

End.

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