Tao Nan School
Primary 4 2021 Science Practice Paper 1

Name: _____( ) Date: _____

Class: _____

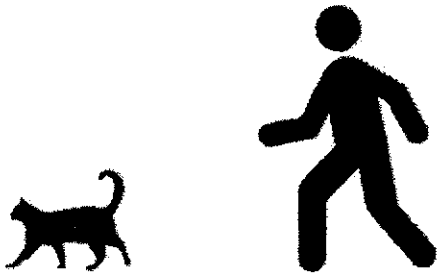
Booklet A (20 x 2 marks)

For each question from 1 to 20, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and shade your answer on the Optical Answer Sheet.

(40 marks)

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1. Justin approached a cat and it moved away once he got nearer to it as shown below. Based on the diagram, which characteristic of living things did the cat show?



Living things _____.

(1) grow

(2) can reproduce

(3) need air, food and water to survive

(4) respond to changes in its surrounding

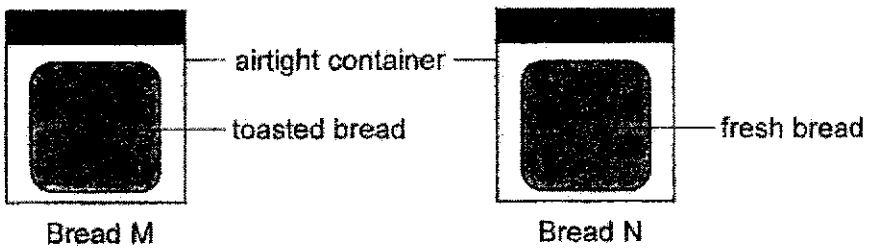
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2. Li Ming set up the following experiment to find out if mould needs water to grow on bread. Two slices of similar type of bread, M and N, were placed in an airtight container and left on a table for a week.



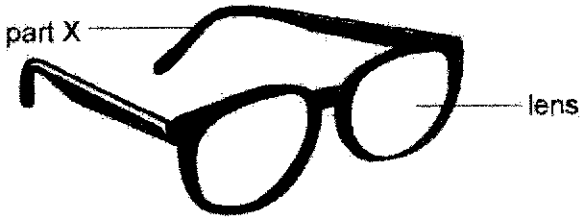
Which of the following shows the correct observation and explanation after a week?

	Amount of mould on Bread M compared to Bread N	**Reason**
(1)	Less	more moisture in the bread
(2)	Less	less moisture in the bread
(3)	More	more moisture in the bread
(4)	More	less moisture in the bread

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3. John wants to get a new pair of reading spectacles. He would like one that allows him to bend part X easily so that it is more comfortable when wearing the spectacles.



The table below shows four materials and their properties. A tick (✓) shows that the material has the property.

Material	Flexible	Waterproof	Allow most light to pass through
A		✓	
B	✓	✓	✓
C	✓	✓	
D		✓	✓

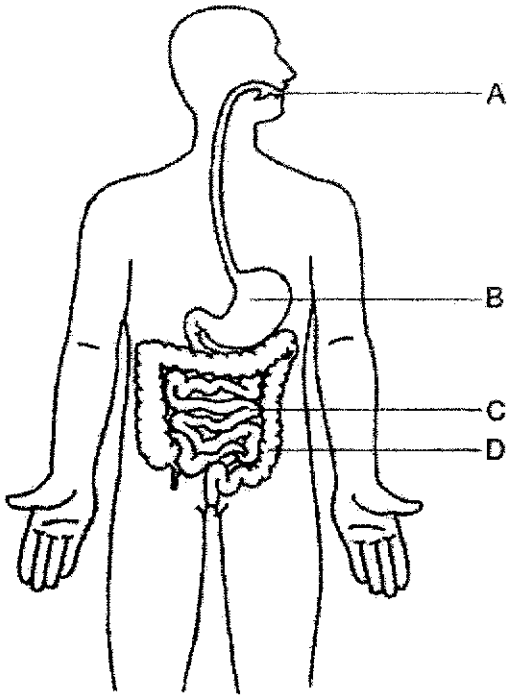
Based on the table above, which of the materials, A, B, C or D, are suitable to make the different parts of the spectacles?

	Lens	Part X
(1)	A	B
(2)	B	D
(3)	C	A
(4)	D	C

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4. The diagram below shows the human digestive system.



Which of the above part(s) absorb(s) digested food?

(1) C only

(2) A and D only

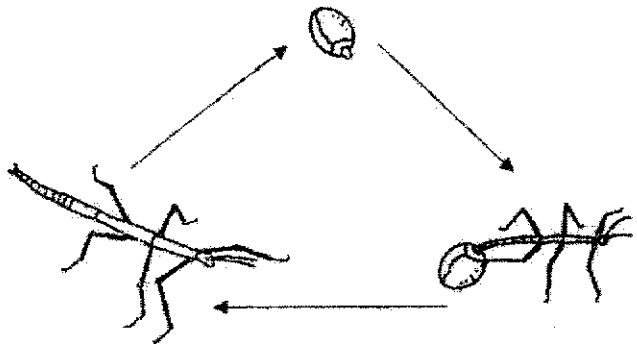
(3) B and C only

(4) C and D only

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5. Study the life cycle of Insect P shown below.



Which of the following statements can be concluded based on the diagram of the life cycle shown above?

(1) P feeds on plants.

(2) P lays its eggs in water.

(3) P has a four-stage life cycle.

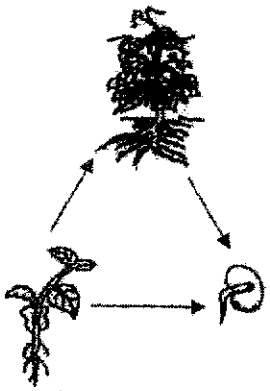
(4) P has a three-stage life cycle.

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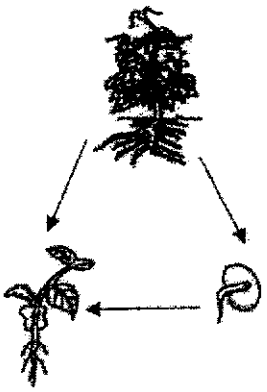
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6. Which of the following shows the correct life cycle of a plant?

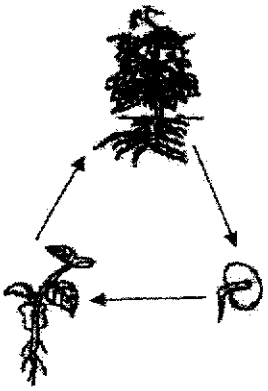
(1)



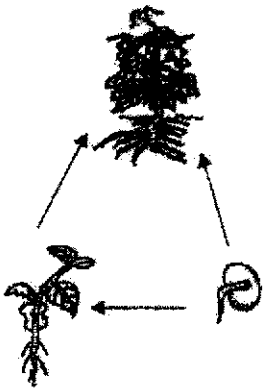
(2)



(3)



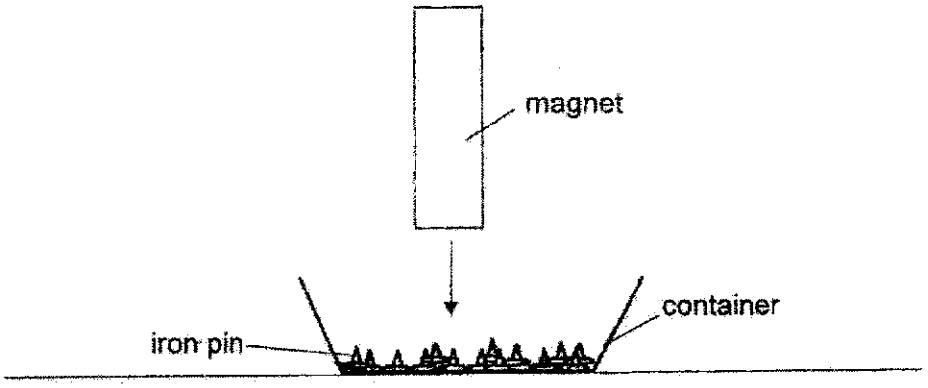
(4)



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7. Michelle wanted to test the magnetic strength of four magnets, Q, R, S and T. She lowered each magnet into the container and recorded the number of identical iron pins attracted by each magnet.



Magnet	Number of iron pins attracted to the magnet
Q	8
R	5
S	1
T	3

Which of the following statements is most likely to be correct?

(1) Magnet Q is the weakest magnet.

(2) Magnet S is the strongest magnet.

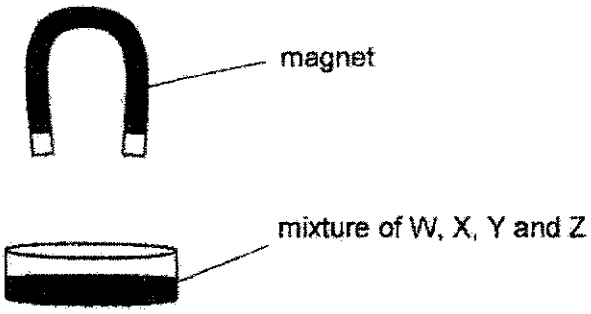
(3) Magnet T is a weaker magnet than Magnet S.

(4) Magnet R is a stronger magnet than Magnet T.

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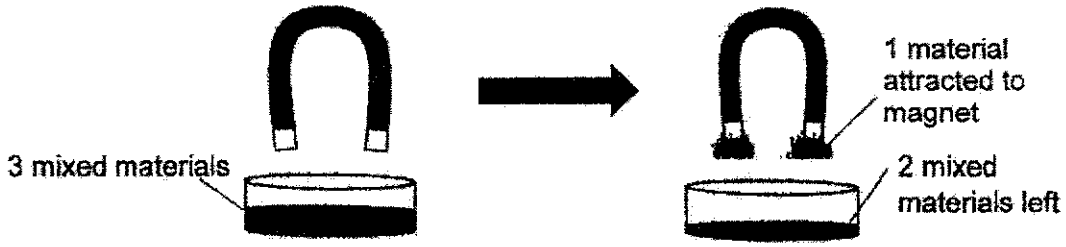
8. A magnet was brought near a mixture of four different materials, W, X, Y and Z, all placed inside a container as shown below.



The result was as shown in the table below.

Materials not attracted to the magnet	Materials attracted to the magnet
W and X	Y and Z

Next, Ken mixed three of the four materials in the container and brought the magnet near them. He observed that one material was separated out as shown.



Which of the following shows the correct material that could be separated from the following mixtures using a magnet?

	Mixture of materials	Material that was separated out
(1)	Y, W and X	W
(2)	Z, W and X	X
(3)	Y, Z and W	Y
(4)	Z, W and X	Z

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9. Which of the following has no mass and does not occupy space?

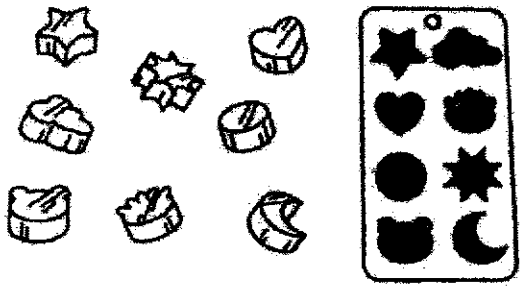
(1) Air

(2) Oil

(3) Shadow

(4) Feather

10. Susan made ice of different shapes using the ice tray shown below. She filled the tray with water and then left it in the freezer.



Why was Susan able to make ice of different shapes with the ice tray?

(1) Ice does not have a definite shape.

(2) Ice does not have a definite volume.

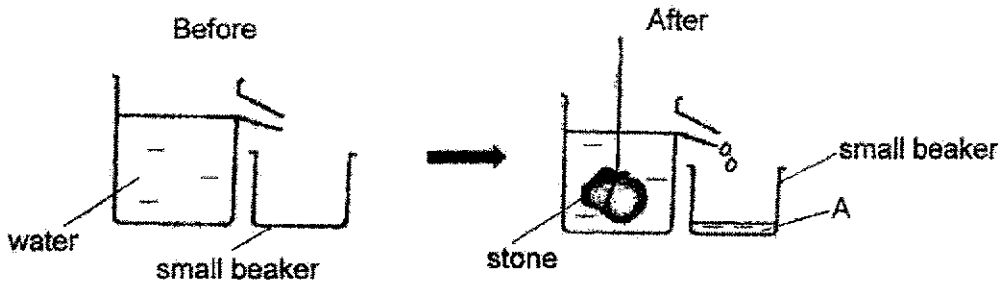
(3) Water does not have a definite shape.

(4) Water does not have a definite volume.

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11. Study the experiment shown below.



The amount of water, A, which is collected in the small beaker, tells us the _____ of the stone.

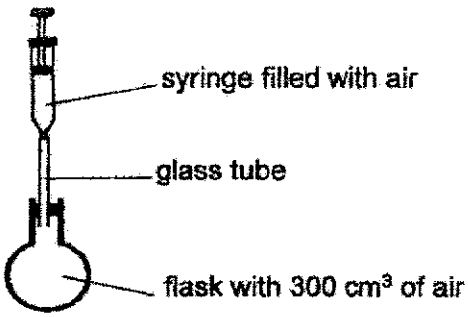
(1) mass

(2) volume

(3) state of matter

(4) mass and volume

12. A glass flask of volume 300 cm^3 is connected to a syringe filled with air.



If additional 40 cm^3 of air is pumped into the flask, what would be the final volume of air in the glass flask?

(1) 40 cm^3

(2) 260 cm^3

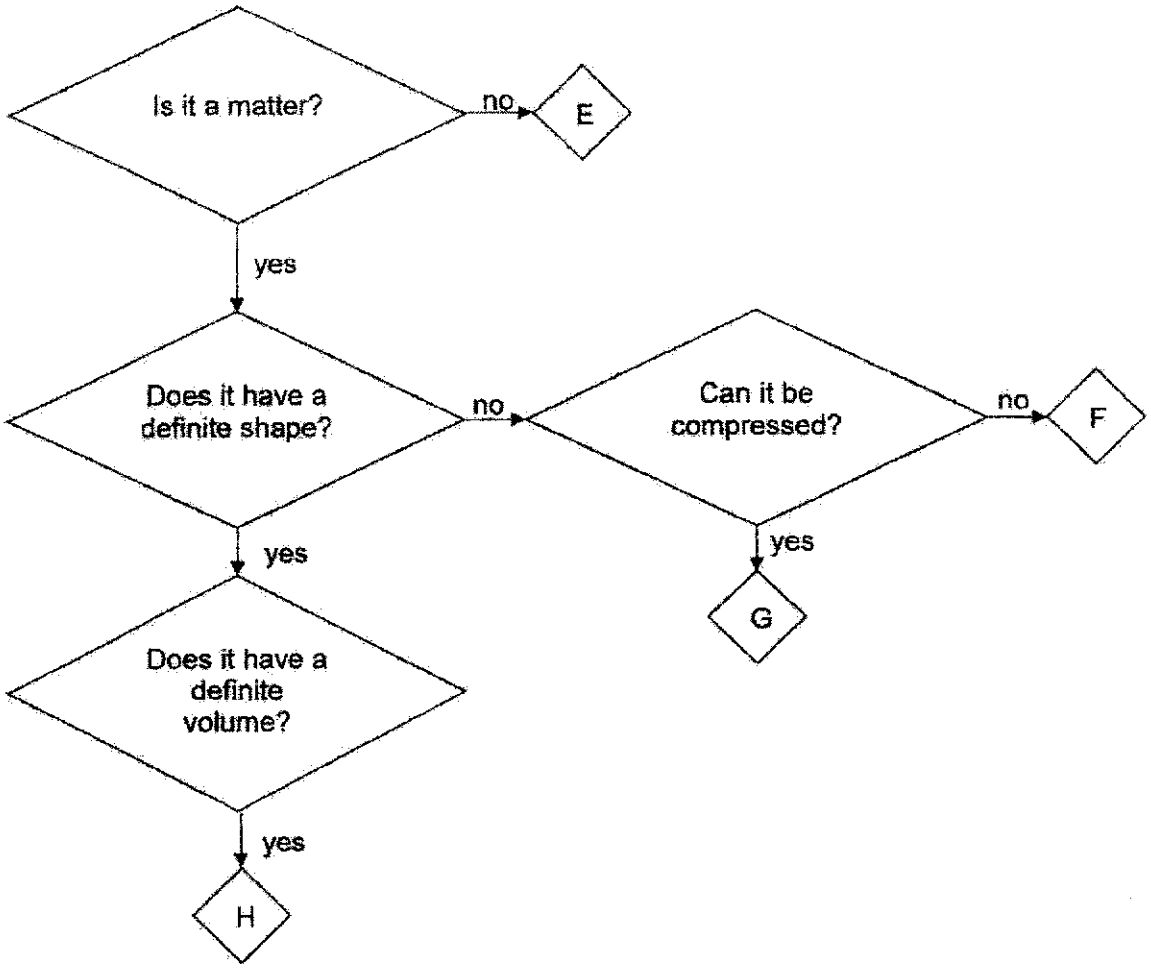
(3) 300 cm^3

(4) 340 cm^3

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13. Study the chart below.



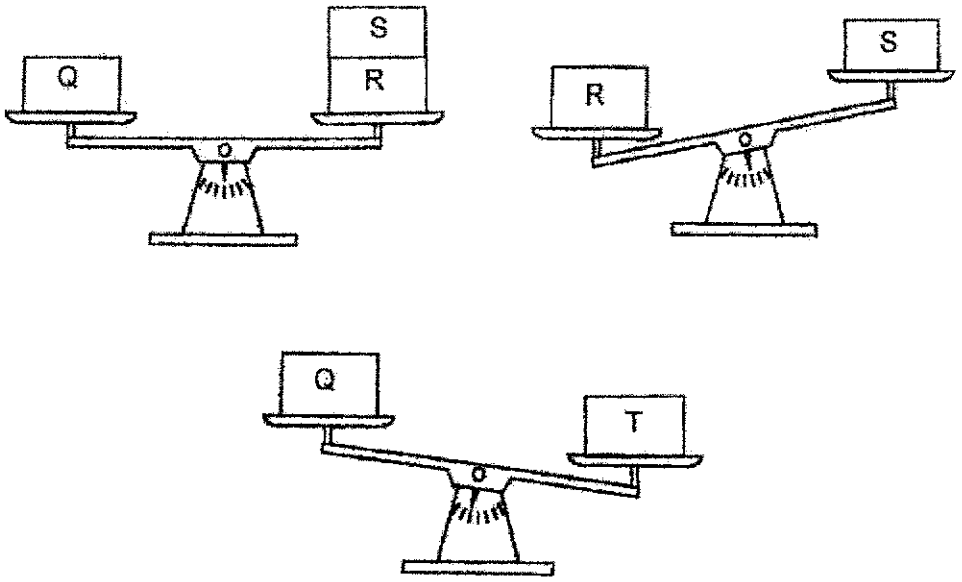
Which of the following best represents E, F, G and H?

	E	F	G	H
(1)	air	light	water	paper
(2)	paper	air	light	water
(3)	light	water	air	paper
(4)	light	air	water	paper

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14. Study the diagrams below carefully.



Which of the following correctly arranges the objects' masses from the smallest to the greatest?

(1) T → Q → R → S

(2) Q → R → S → T

(3) R → S → T → Q

(4) S → R → Q → T

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15. Which of the following is/are sources of light?

A Sun

B Moon

C Mirror

D Lit torch

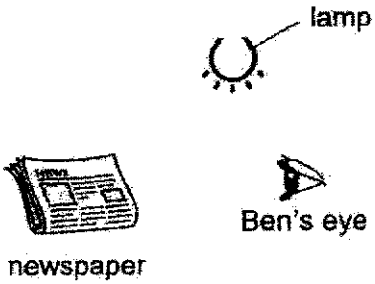
(1) A only

(2) A and D only

(3) A, B and D only

(4) A, B, C and D

16. Study the diagram below.



Which of the following explains how Ben is able to see the newspaper?

(1) Ben's eyes gives out light.

(2) Light travels in a straight line.

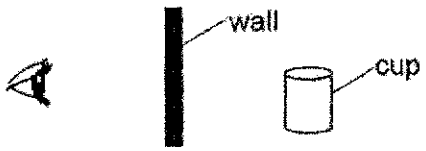
(3) The lamp is the source of light.

(4) The newspaper reflects light from the lamp into Ben's eyes.

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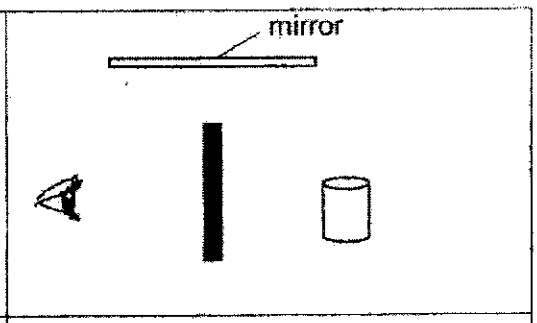
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17. Jane wants to use a mirror to see a cup which was placed behind the wall.

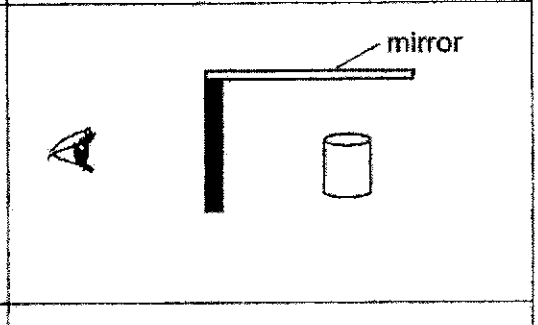


Which of the following diagrams shows the correct position of the mirror?

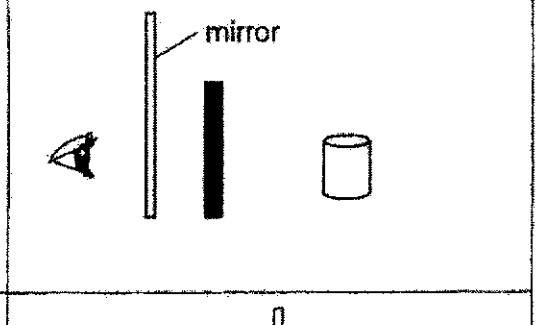
(1)



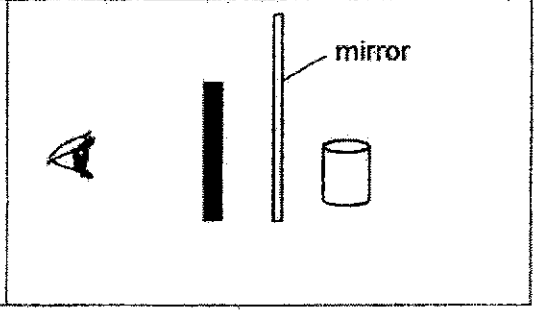
(2)



(3)



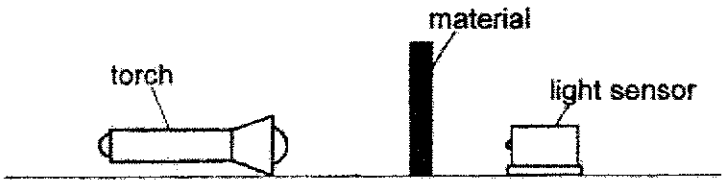
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18. An experiment shown below was conducted to compare the amount of light that passes through four different materials, W, X, Y and Z. A light sensor was used to detect how much light passes through each material.



The readings were recorded in the table below.

Material	Amount of light detected (units)
none	5000
W	4800
X	2900
Y	110
Z	600

Based on the table above, which of the materials, W, X, Y or Z, will cast the darkest shadow on a screen?

(1) Material W

(2) Material X

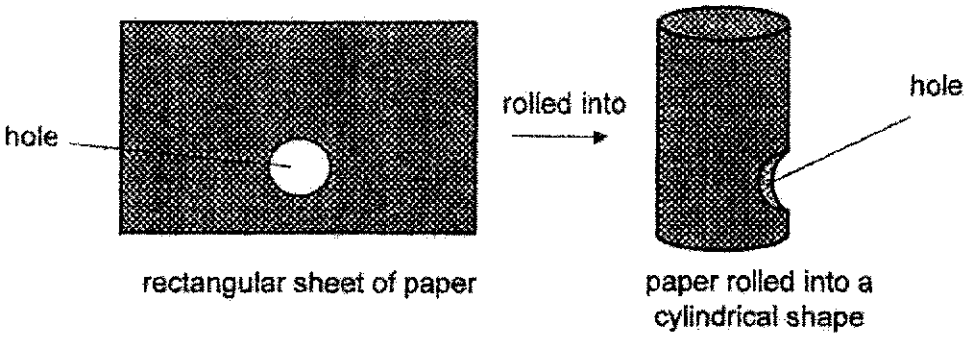
(3) Material Y

(4) Material Z

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19. Bala cut out a circular hole from a thick piece of rectangular-shaped paper and rolled it into a cylinder as shown below.



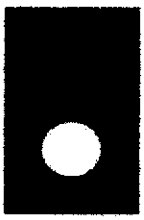
He then used a torch to shine on the cylinder to form some shadows on a wall. Which of the following shadows **cannot** be formed by the cylinder?



(1)



(2)



(3)

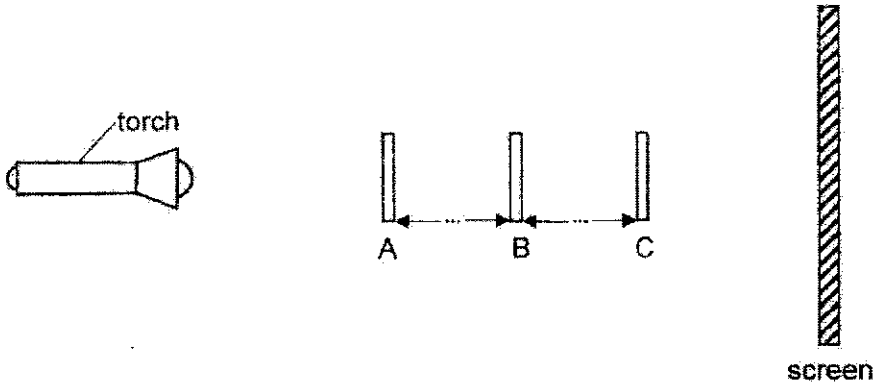


(4)

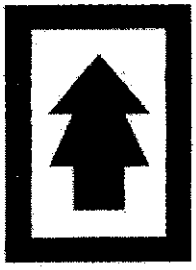
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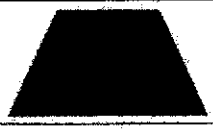
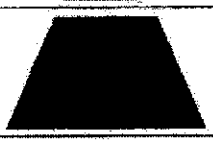
20. Three cardboard pieces, A, B and C are arranged in a straight line at a certain distance apart as shown below. The three cardboard pieces have the same height.



The diagram below shows the shadow that is cast on the screen.



What are the shapes of A, B and C?

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

End of Booklet A

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Tao Nan School
Primary 4 2021 Science Practice Paper 1

Name: _____ ( ) Date: _____

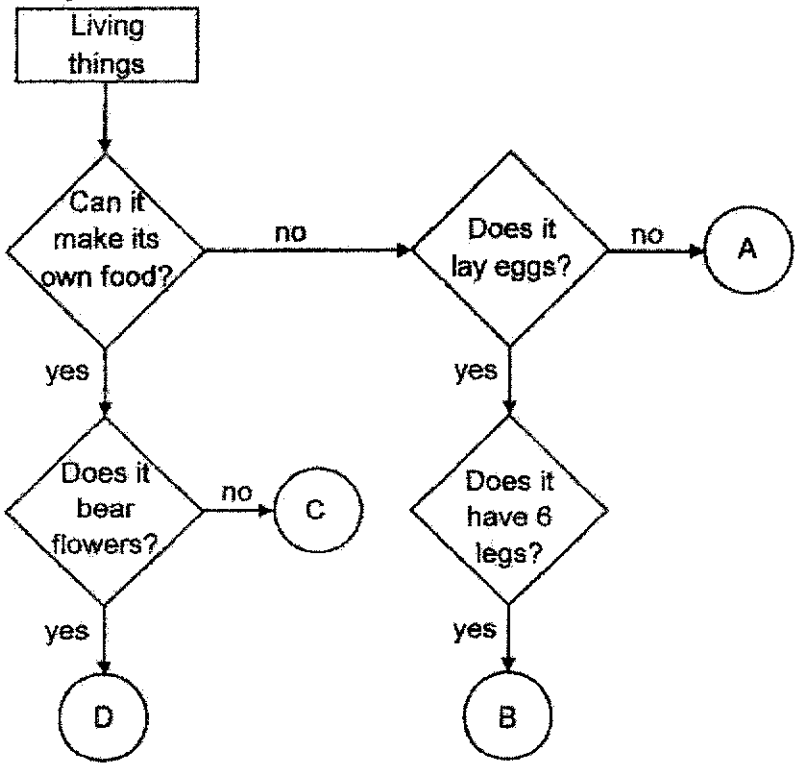
Class: _____

Booklet B (30 marks)
For questions 21 to 31, write your answers clearly in this booklet.

The number of marks available is shown in brackets [ ] at the end of each question or part question. (30 marks)

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21. Study the chart below.



Based on the above chart, write down the letters, A, B, C or D, that best represent the living things below. [2]

Living Thing	Letter
Horse	
Papaya plant	
Moss	
Dragonfly	

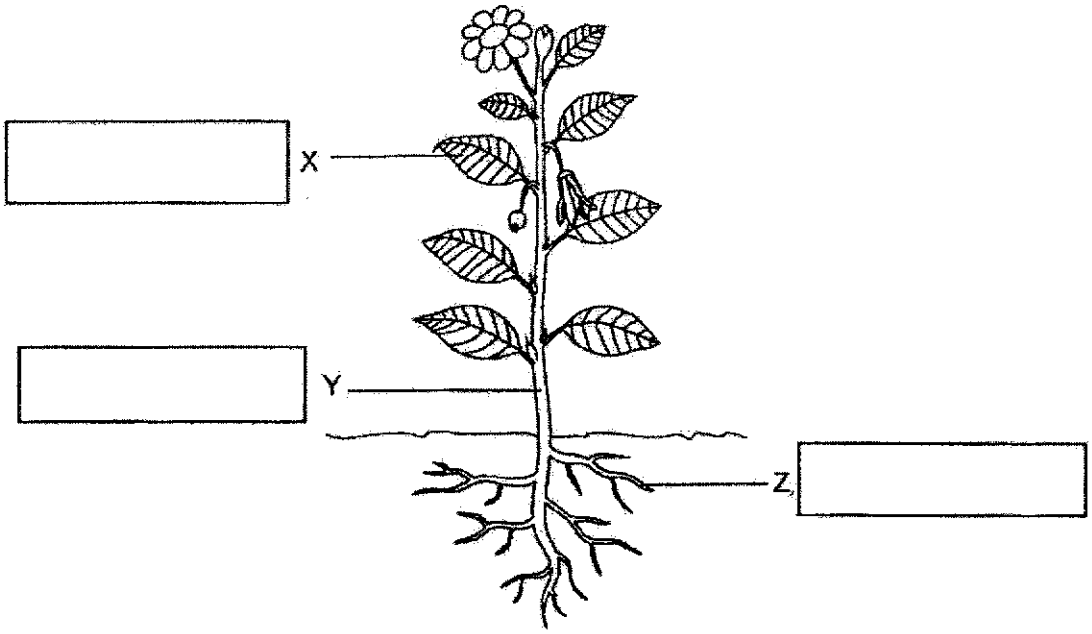
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Score 2

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22. The diagram below shows the different parts of a plant.

(a) Fill in the blanks below with the names of each plant part. [1½]



(b) State a function of X, Y and Z. [1½]

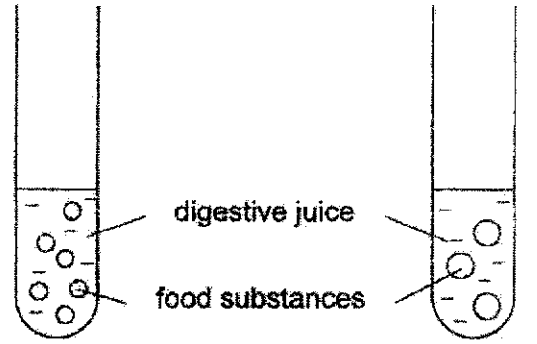
	Function
X	
Y	
Z	

Score	3

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23. Jessica set up the following experiment to find out if the size of food particles affects the rate of digestion. She used the same amount of food substances and digestive juice in both test tubes but the food substances are cut into different sizes as shown below.



She repeated the experiment and recorded her results in the table below.

	Time taken for food substances to be digested completely (min)	
Result	**1st try**	**2nd try**
X	3	4
Y	10	9

(a) Based on the information above, which set of test results, X or Y, most likely belongs to set-up A? Give a reason for your answer. [2]

_____

_____

_____

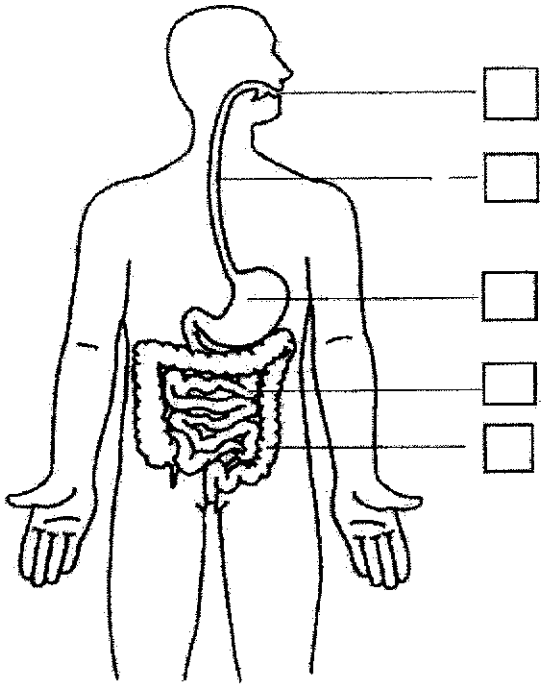
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The diagram below shows a human digestive system.

(b) Tick (√) in the boxes below to show the part(s) which produce(s) digestive juices. [1]

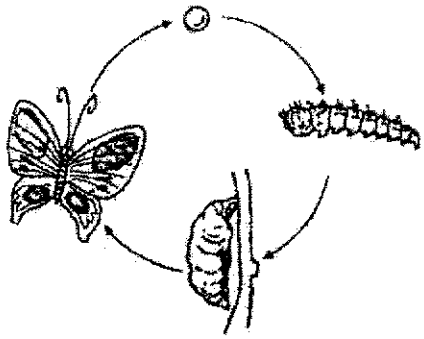


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24. Ali wants to find out the effect of the surrounding temperature on the development of Insect A.



Life cycle of Insect A

The table below shows the effect of the surrounding temperature on the duration of the egg, larval and pupal stage of Insect A.

Surrounding temperature (°C)	Number of days an egg takes to hatch	Number of days as a larva	Number of days as a pupa	Total number of days to develop into an adult after the egg is laid
25	3	12	5	20
27	2	10	4	16
29	2	7	3	12

(a) Based on the results, what is the relationship between the total number of days for the eggs to develop into adult and the surrounding temperature when it rises from 25°C to 29°C? [1]

_____

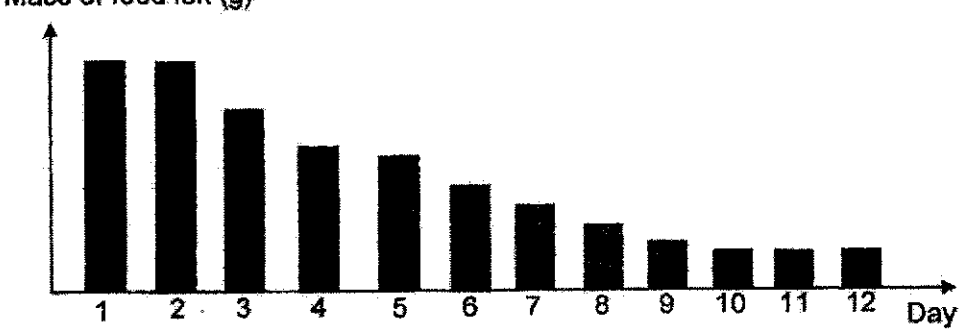
_____

Score 1

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With the surrounding temperature at 29°C, Ali added food into the container where he kept Insect A's eggs. The graph below shows his results which he recorded the mass of food in the container daily for a period of 12 days.



(b) Explain why the amount of food in the container decreases from Day 3 to Day 9. [1]

_____

_____

(c) Explain why the amount of food in the container remains unchanged from Day 10 to Day 12. [1]

_____

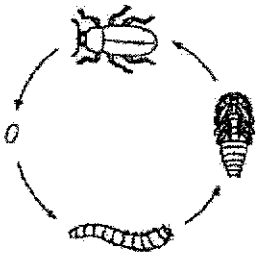
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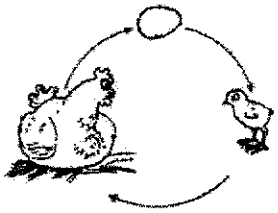
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25. Study the life cycles of X and Y.



Life cycle of X



Life cycle of Y

(a) State one similarity between the life cycles of X and Y. [1]

_____

(b) State two differences between the life cycles of X and Y. [2]

_____

_____

_____

Score	/ 3

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26. Sam carried out an experiment to find out how the amount of water given to a seedling affects its growth. He planted three identical seedlings in three identical pots of soil. He gave different amounts of water to the three seedlings every day for one week. He measured the height of the seedling daily. His results are shown in the table.

Seedling	Amount of water given every day (ml)	Height of seedling (cm)		
		Day 0	Day 5	Day 7
A	1	1	2	3
B	3	1	3	5
C	5	1	5	9

(a) How did Sam know that the seedlings were growing? [1]

_____

(b) Sam's teacher suggested that Sam repeats his experiment three more times. How will doing this help in the results of his experiment? [1]

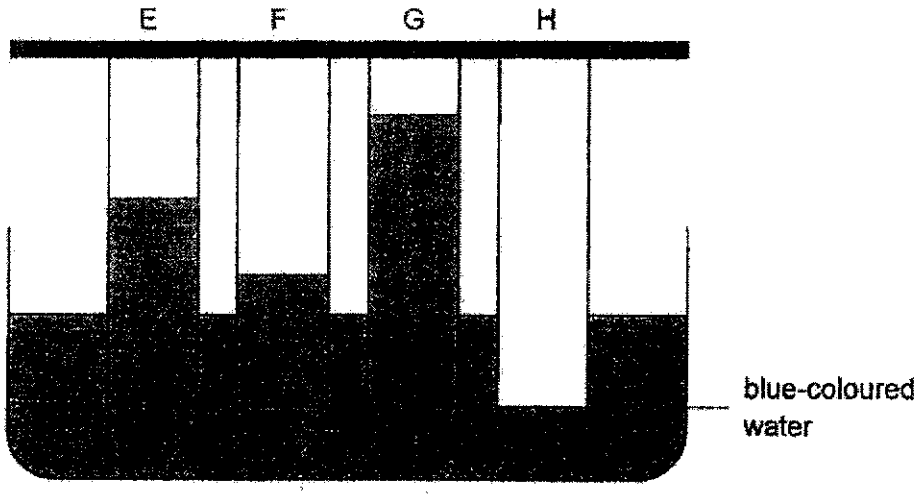
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27. Four strips made of different materials, E, F, G and H, were dipped into a container of blue-coloured water for five minutes as shown below.



Based on the results, which material, E, F, G or H, is most suitable for making a bath towel? Explain your answer. [2]

_____

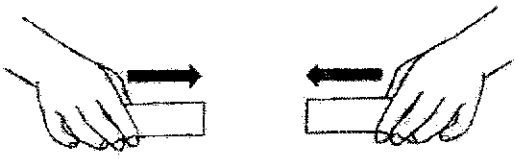
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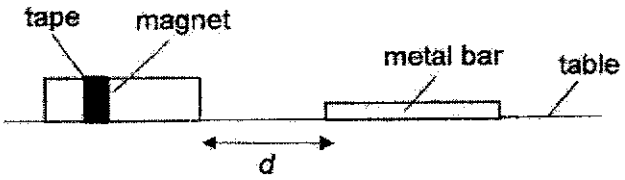
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28. Vashti pushed two magnets towards each other as shown below. She observed that as the magnets were brought near to each other, she had to push harder to keep them in place.



(a) Explain why Vashti had to push the magnets harder to keep them in place. [1]

Vashti taped a magnet on a table. Metal bar, P, was brought to a distance *'d'* from the magnet as shown below.



She then let go of P and recorded the change in distance *'d'* in the table below. She then repeated the same steps for metal bars, Q and R.

Bar	**P**	**Q**	**R**
Distance *d*	increased	decreased	no change

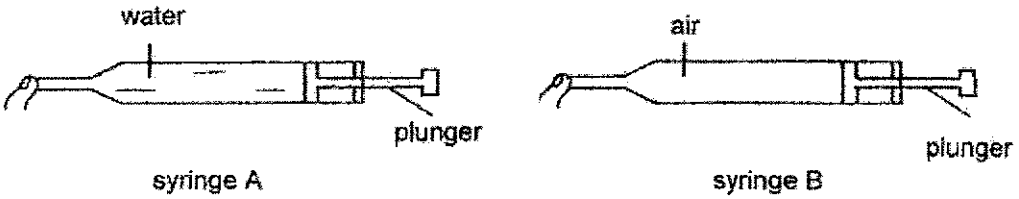
(b) Which bar(s), P, Q, or R is/are made of magnetic material? Explain your answer. [1]

Score	2

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29. The diagram below shows two syringes, A and B. Each syringe has a capacity of 50 ml.



syringe A syringe B

(a) What would the observations be if the plungers for both syringes, A and B, are given the same amount of push? [1]

_____

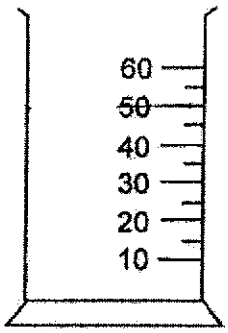
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(b) Explain your observation in (a) for Syringe B. [1]

_____

_____

(c) The water in Syringe A was emptied into the measuring cylinder. Draw the water level in the measuring cylinder. [1]

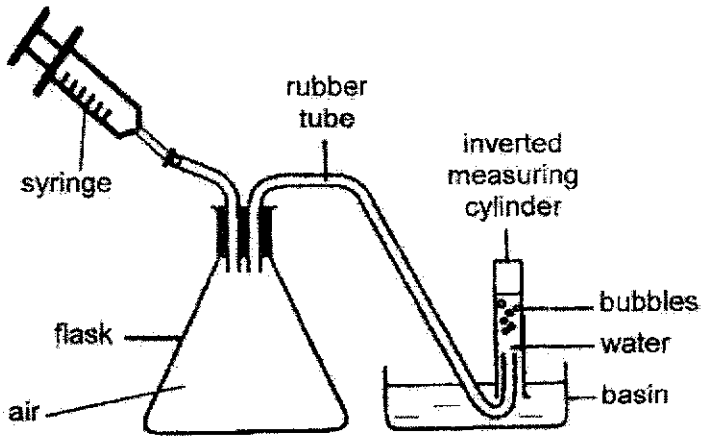


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30. David used a syringe to pump air into the flask. After a few pumps, bubbles were observed coming out from the other end of the rubber tube and entering the measuring cylinder.



(a) Explain why bubbles are seen coming out from the other end of the rubber tube. [2]

(b) Describe what would happen to the water level in the inverted measuring cylinder when bubbles are seen escaping from the rubber tube. [1]

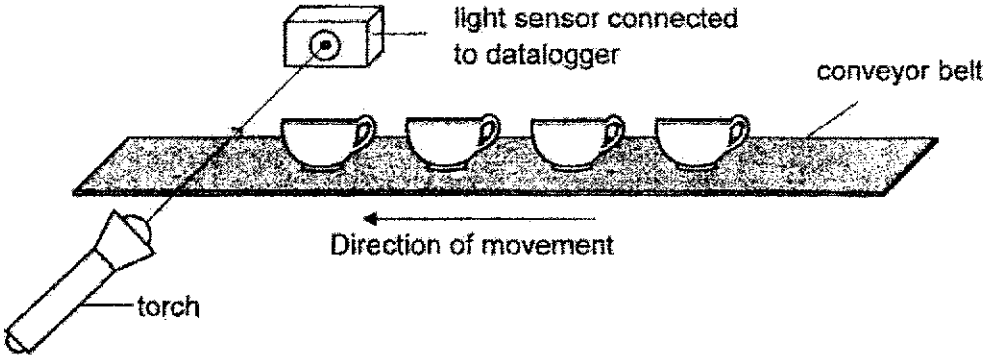
(c) Give an explanation for your answer in (b). [1]

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31. A factory that manufactures ceramic cups uses a light sensor connected to a datalogger to count the number of ceramic cups on a moving conveyor belt as shown in the diagram below.



(a) State a property of light which enables the set-up to count the number of cups. [1]

_____

_____

(b) The above set-up cannot be used to count the number of clear glass cups. Explain why. [1]

_____

_____

(c) Suggest one change to the above set-up so that it can now be used to count the number of clear glass cups. [1]

_____

_____

Score	3

End of Paper

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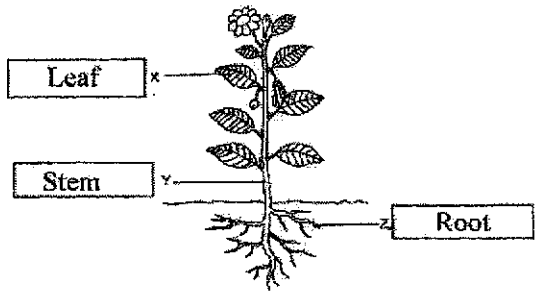
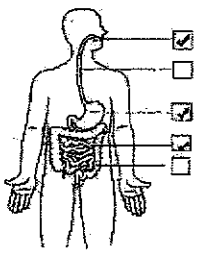
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SCHOOL : TAO NAN SCHOOL
LEVEL : PRIMARY 4
SUBJECT : SCIENCE
TERM : PRACTISE PAPER 1

Booklet A

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
4	2	4	1	4	3	4	4	3	3
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
2	3	3	4	2	4	1	3	3	3

Booklet B

Q21	A D C D
Q22	 a) b) X: X makes food for the plants. Y: Y keeps the plant upright. Z: Z hold the plant firmly to the ground.
Q23	a) X. It is because the food substances was broken down into smaller pieces, so the rate of digestion increases.  b)

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Q24	a) The higher the surrounding temperature, the lesser the number of days an egg takes to hatch. b) The egg had just hatched and started eating. c) Insect A is at the pupa stage and it does not eat.
Q25	a) They both have the egg stage. b) Life cycle of X young does not look like its adult while life cycle of Y young looks like its adult and life cycle of X has four stages while life cycle of Y has three stages.
Q26	a) The height of the seedling increases. b) It would conclude that his reading was reliable.
Q27	Material G as it soaks up the most water after you bathe so the towel will be able to help the person dry himself faster.
Q28	a) It is because both the like poles were face each other so both the magnets repelled. b) Bar P and Q, Bar Q was attracted to the magnet while Bar P was repelled by the magnet.
Q29	a) Plunger of syringe B can be pushed ot but pungler of syringe A cannot be pushed as there is water inside. b) Air can be compressed. c) 
Q30	a) It is because air in the flask occupies space and the air cannot be compressed in the flask anymore. It goes into the tube and then into the basin. b) The water level in the inverted measuring cylinder decreases. c) Air in the measuring cylinder occupies space and then the water goes in to the basin.
Q31	a) Light tracvels in a straight line. b) The clear glass cup allows most light to pass through and the light sensor would detect light so the light sensor would not sense the clear glass cup. c) Place the clear glass cup in opaque boxes.

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