



2018 PRIMARY 4 SEMESTRAL ASSESSMENT 1

Name : _____ ()

Date: 10 May 2018

Class : Primary 4 ()

Time: 8.00 a.m. - 9.45 a.m.

Duration: 1 hour 45 minutes

Parent's Signature: _____

Marks: _____ / 56

SCIENCE BOOKLET A

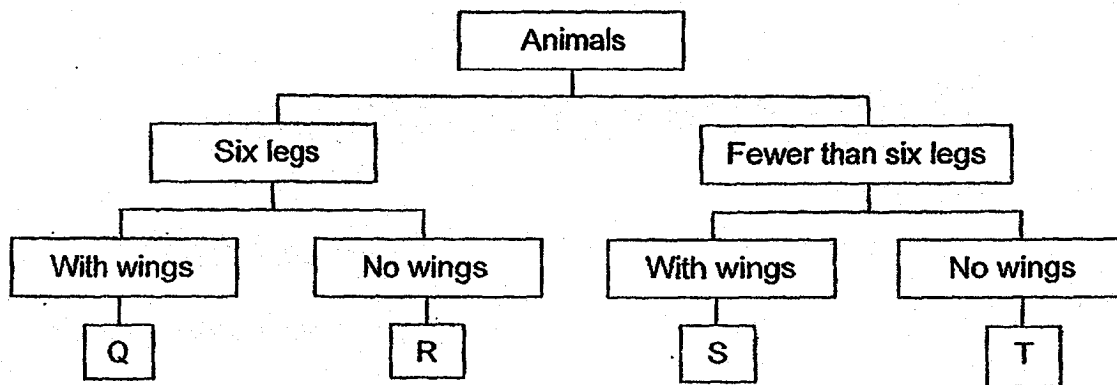
INSTRUCTIONS TO CANDIDATES

1. Write your name, class and register number.
2. Do not turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answers on the Optical Answer Sheet (OAS) provided.

Booklet A (28 x 2 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) and shade your answer on the OAS provided.

1. Study the flowchart below carefully. Q, R, S and T are animals.



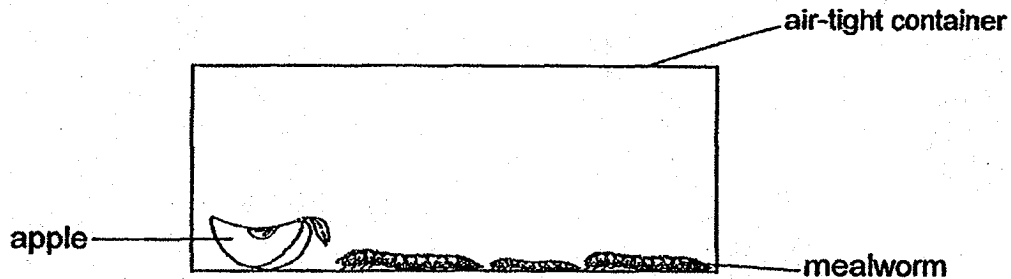
Observe the animal shown below.



Which letter, Q, R, S or T, represents the animal above?

- (1) Q
- (2) R
- (3) S
- (4) T

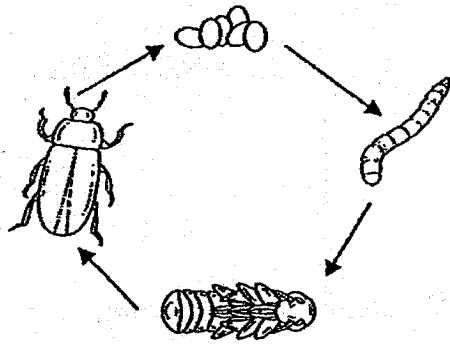
2. Ida placed some mealworms in an air-tight container as shown below



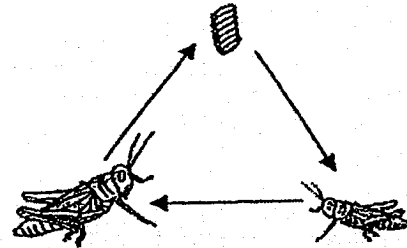
She observed that the mealworms died after a few weeks. Based on the above experiment, what can she conclude about living things.

- (1) Living things can reproduce.
 - (2) Living things need air to stay alive.
 - (3) Living things can respond to changes.
 - (4) Living things can live without air, food and water.
3. Which of the following is a common characteristic of fern and fungi?
- (1) They reproduce by spores.
 - (2) They trap sunlight to make food.
 - (3) They feed on dead plants and animals.
 - (4) They only need water and food to survive.

4. Study the life cycles of Insects A and B below.



Life cycle of Insect A

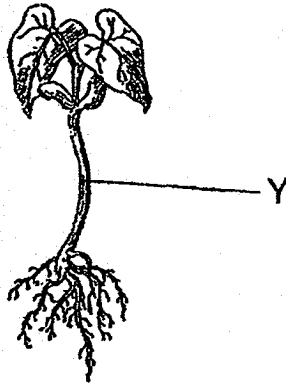


Life cycle of Insect B

Which of the following is true of the life cycles shown above?

- (1) The young of Insect A and B do not feed.
- (2) Insect A has an egg stage while Insect B does not have an egg stage.
- (3) Insect A has a larval stage while Insect B does not have a larval stage.
- (4) The young of Insect B does not look like its adult but the young of Insect A does.

5. Megan planted a seed which grew into a young plant as shown below.

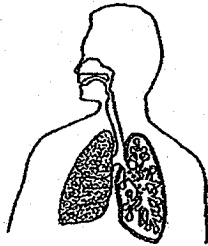


Which of the following statements is true about the main function of the part labelled Y?

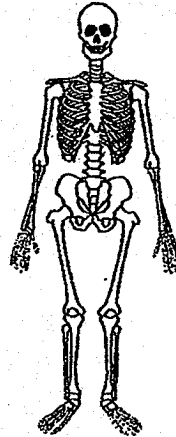
- (1) It grows away from light.
- (2) It holds the plant firmly to the soil.
- (3) It supports the plant and keeps it upright.
- (4) It absorbs water and minerals salt from the soil.

6. Which of the following systems takes in air in a human body?

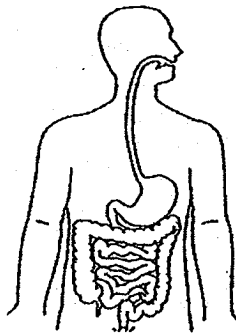
(1)



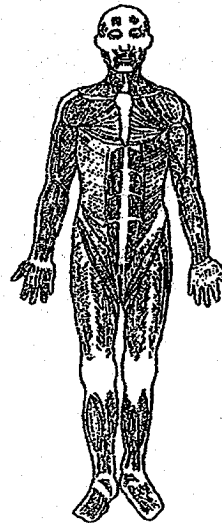
(2)



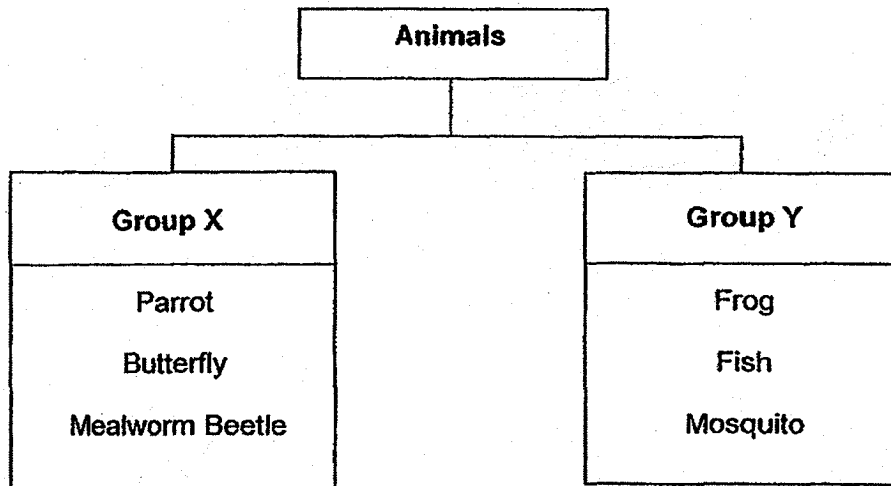
(3)



(4)



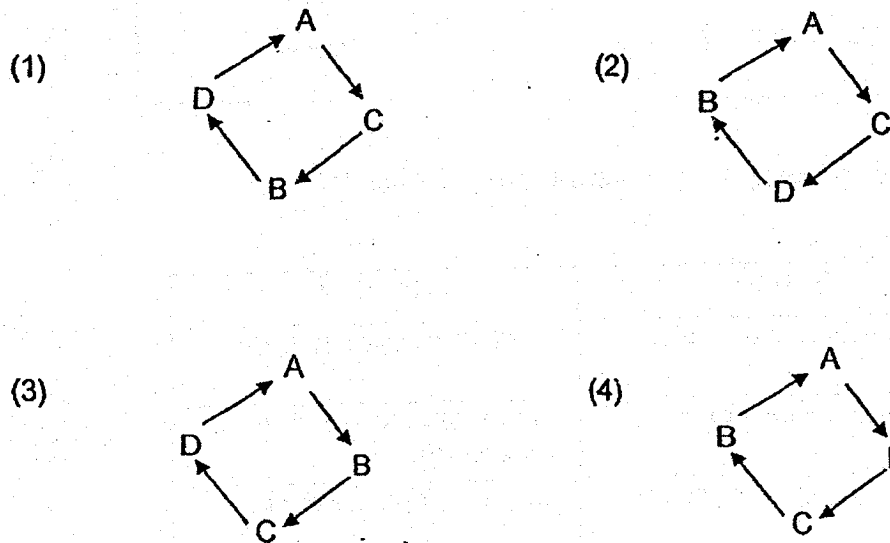
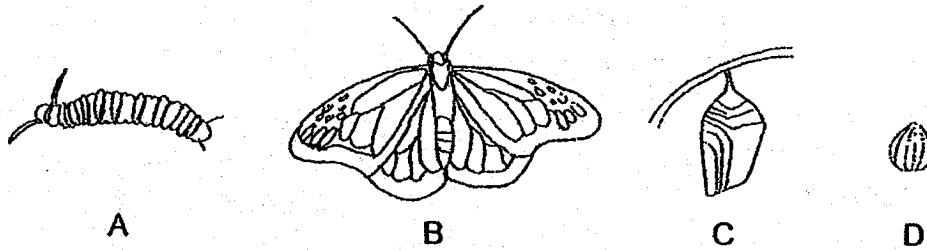
7. Study the classification chart below.



Which of the following best describe Groups X and Y?

	Group X	Group Y
(1)	Adult stage lives on land	Adult stage lives in water
(2)	Life cycle has a pupa stage	Life cycle does not have a pupa stage
(3)	Has a 4-stage life cycle	Has a 3-stage life cycle
(4)	Eggs are not laid in water	Eggs are laid in water

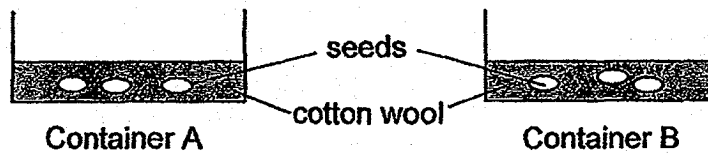
8. Which of the following arrangement represents the 4 stages of the butterfly in its life cycle?



9. A butterfly usually lays its eggs on leaves. How does this help in the survival of its young?

- (1) Its larva can obtain more air.
- (2) Its pupa has space to grow larger.
- (3) Its larva will have a ready food source.
- (4) When hatched, the adult can fly off easily.

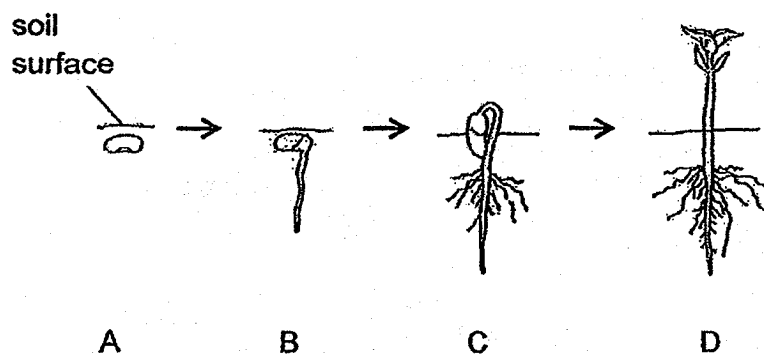
10. Hui Hui was given similar seeds to grow at home. She placed the seeds in two containers, A and B. After two weeks, only seeds in Container A germinated.



Which of the following was likely the changed variable for Hui Hui's experiment?

	Container A	Container B
(1)	Placed in the garden	Placed in a dark room
(2)	No water given daily	Water given daily
(3)	No air	Has air
(4)	Placed in the cupboard	Placed in a refrigerator

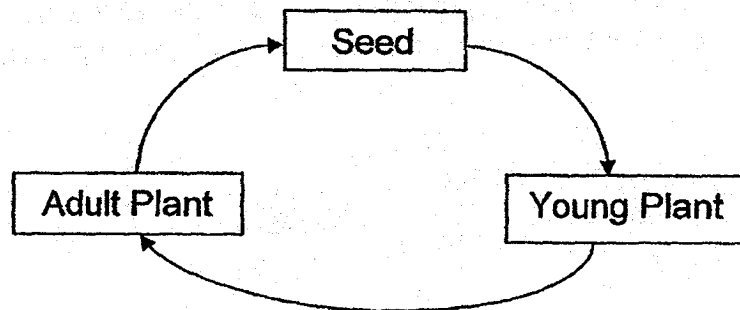
11. The diagram below shows the stages of germination (A, B, C and D) of Plant Y.



Which stage, A, B, C or D, shows the start of germination?

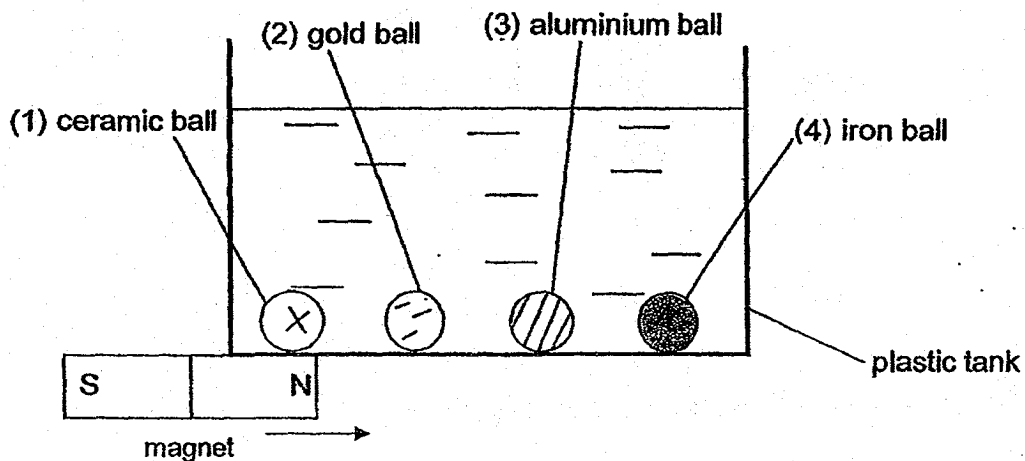
- (1) A
(2) B
(3) C
(4) D

12. Study the life cycle shown below.

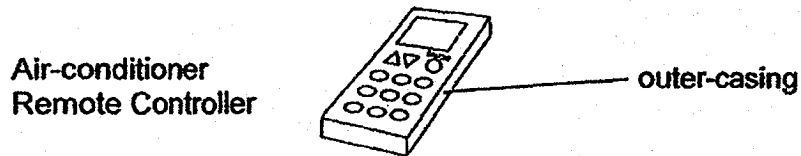


Which of the following living things has the above life cycle?

- (1) Moss
 - (2) Papaya Tree
 - (3) Bird's Nest Fern
 - (4) Bracket Mushroom
13. In a plastic tank, there are 4 balls of different materials. Matthew takes a magnet and moves it under the tank in the direction as shown below. Which of the following balls will move with the magnet?



14. Mr Lee wanted to select a material for making the outer-casing of an air-conditioner remote controller.



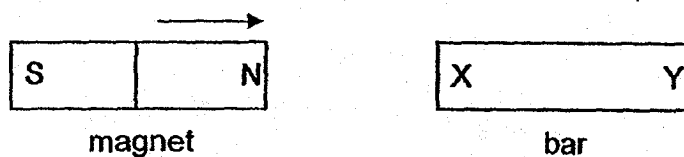
The following table shows the properties of four materials.

Material	Can It break easily?	Is it light?
A	No	Yes
B	Yes	Yes
C	No	No
D	Yes	No

Which of the following materials, A, B, C and D, is most suitable for Mr Lee to make the outer casing of the air-conditioner remote control?

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

15. Muthu carried out an experiment with a bar magnet and 4 other bars, A, B, C and D, of different materials. The ends of the objects are labelled X and Y.



He brought the north-seeking pole of the bar magnet near both ends of A, B, C and D and recorded his observations in the table below.

Bar	Reaction to the north-seeking pole of the magnet	
	X	Y
A	attract	attract
B	repel	attract
C	no reaction	no reaction
D	attract	repel

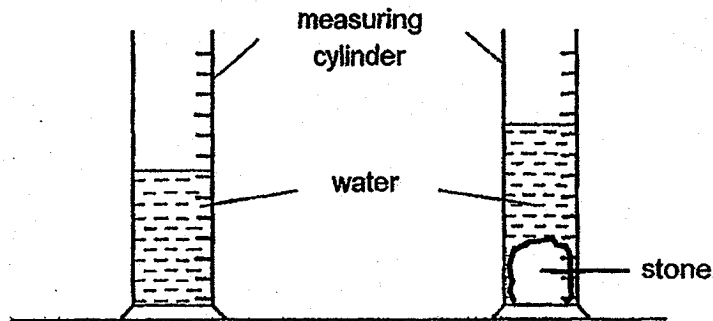
Which of the following statements is correct?

- (1) Only A is a magnet.
- (2) B, C and D are magnets.
- (3) Only A is made of a magnetic material.
- (4) Only A, B and D are made of magnetic materials.

16. Which of the following is **not** matter?

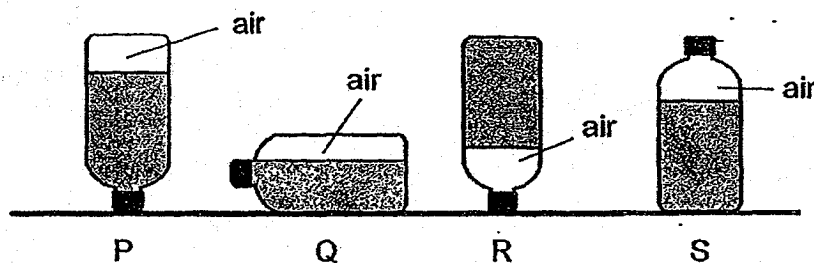
- (1) air
- (2) salt
- (3) light
- (4) water

17. Kevin lowered a stone into a measuring cylinder containing some water. He observed a change in water level as shown in the diagram below.



Which of the following explains why the water level changed?

- (1) The water has mass.
 - (2) The water is not matter.
 - (3) The stone occupies space.
 - (4) The volume of water increased.
18. Four bottles, P, Q, R and S, contained water. One of them had been put into a freezer.



Which of the bottles had definitely been placed in a freezer?

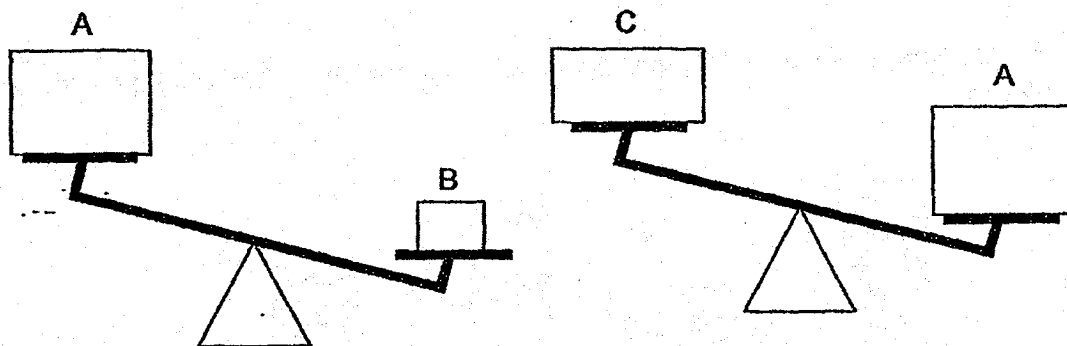
- (1) P
- (2) Q
- (3) R
- (4) S

19. A clown inflated a long yellow balloon and twisted it into the shape of a dog. What properties of air in the balloon did he change?

A: The shape of the air
B: The mass of the air
C: The colour of the air
D: The volume of the air

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

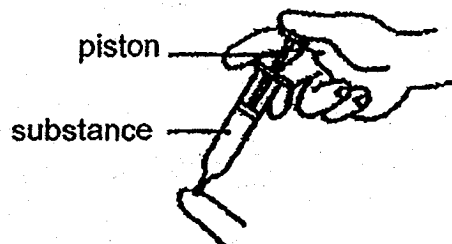
20. Three objects, A, B and C, are placed on a balance.



Which of the following statements is correct?

- (1) A is the heaviest.
(2) B is the heaviest.
(3) A is heavier than B.
(4) C is heavier than B.

21. Two identical syringes are filled fully with unknown substances, E and F. Siti used her finger to cover each syringe as shown in the diagram below. The piston is pushed down and the distance moved by the piston is recorded by Siti in the table below.

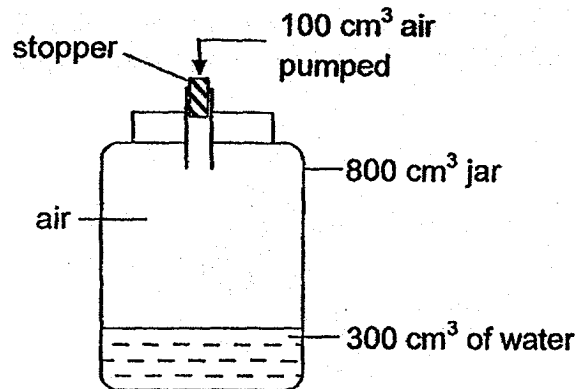


Distance moved by piston (cm)	
Syringe with E	Syringe with F
2	0

Which of the following are the substances, E and F?

	Substance E	Substance F
(1)	Slime	Water
(2)	Water	Slime
(3)	Air	Water
(4)	Slime	Air

22. John pumped 100 cm^3 of air into an 800 cm^3 jar that had 300 cm^3 of water in it as shown in the diagram.



What is the volume of air in the jar now?

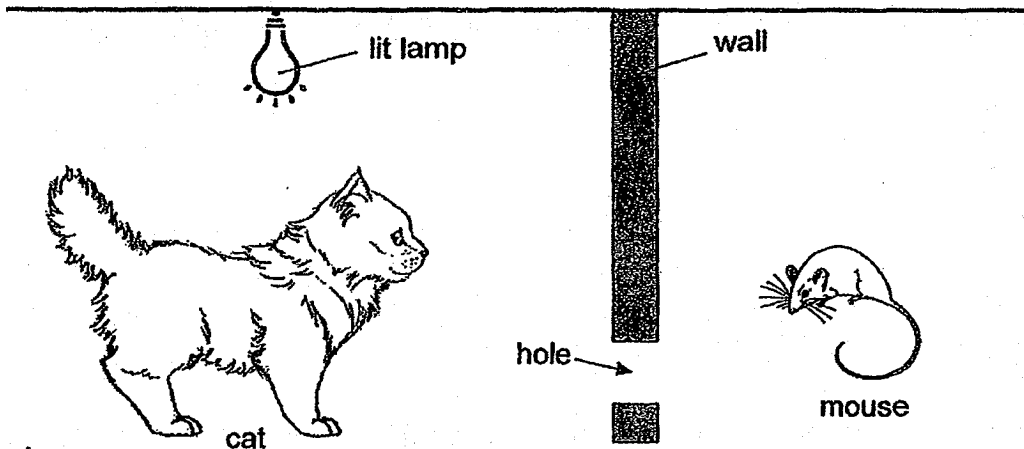
- (1) 100 cm^3
 - (2) 500 cm^3
 - (3) 600 cm^3
 - (4) 800 cm^3
23. Which of the following is a source of light?

- (1) sun
- (2) moon
- (3) mirror
- (4) aluminium sheet

24. James has an object that allows some light to pass through and another object that does not allow light to pass through. Which objects does he have?

- (1) Wood and clear plastic
- (2) Clear glass and magnet
- (3) Tracing paper and cardboard
- (4) Frosted glass and tracing paper

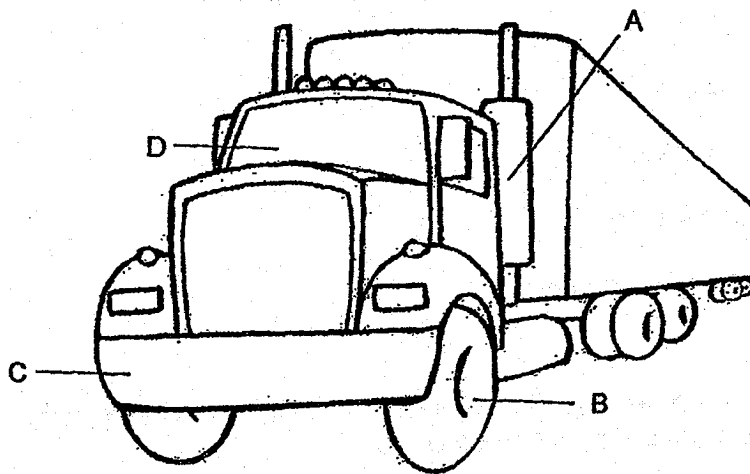
25. A cat ran after a mouse. The mouse ran into a hole in a wall. The cat stopped in front of the wall as it was unable to see the mouse.



Which of the following is a correct explanation of why the cat could not see the mouse?

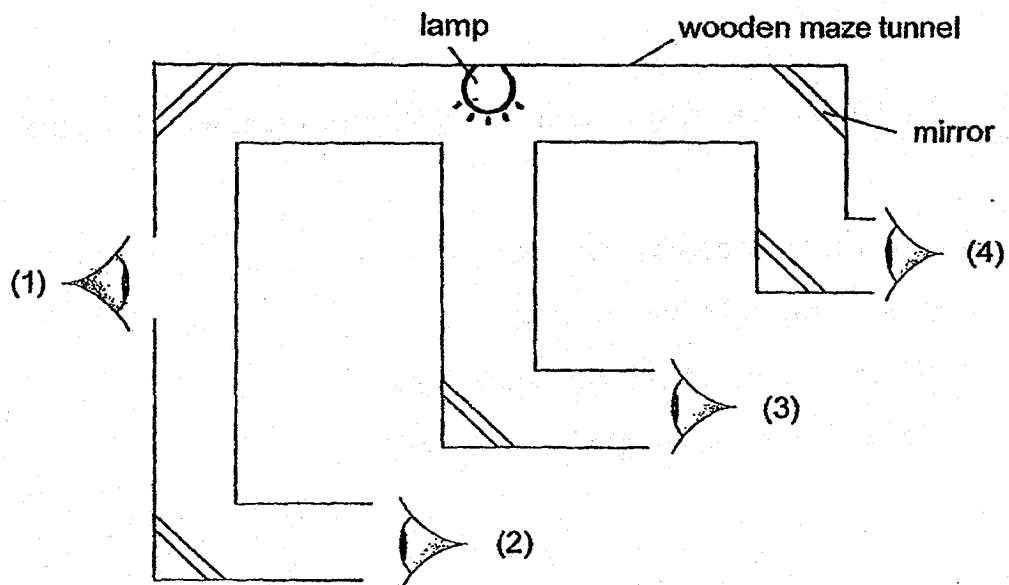
- (1) The mouse is not able to reflect light.
- (2) The wall allows light to pass through.
- (3) The light of the lamp travels in a straight line.
- (4) The hole does not allow light to pass through.

26. The diagram below shows a truck on the road.

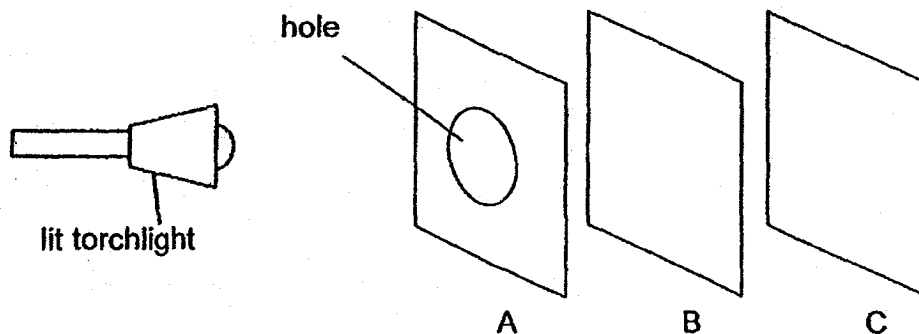


Which part, A, B, C or D, of the truck must be made of a transparent material?

- (1) A
 - (2) B
 - (3) C
 - (4) D
27. Four boys are peering into a wooden maze tunnel that has five pieces of mirrors as shown below. Which boy cannot see the lit lamp?



28. Fred carried out an experiment in a dark room. Sheets, A, B and C, are arranged in a straight line as shown in the diagram below.



Fred observed a bright circular patch of light on B only. Which of the following is definitely true?

- (1) A is made of clear plastic.
- (2) B allows light to pass through.
- (3) C does not allow light to pass through.
- (4) A and B do not allow light to pass through.



2018 PRIMARY 4 SEMESTRAL ASSESSMENT 1

Name : _____ ()

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SCIENCE

BOOKLET B

INSTRUCTIONS TO CANDIDATES

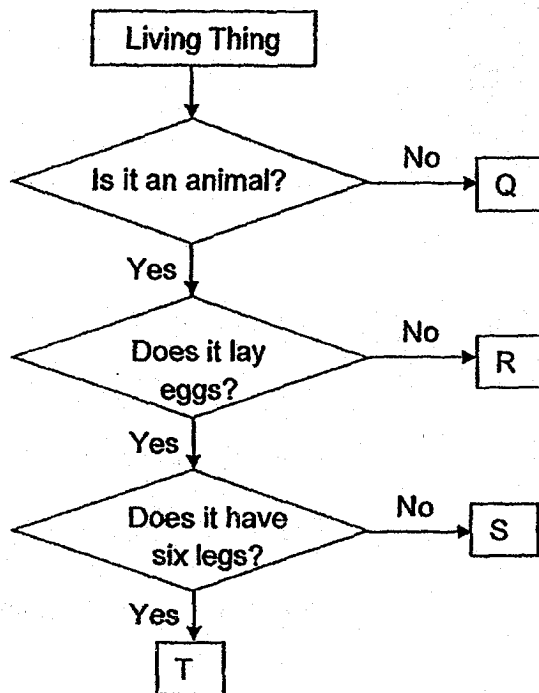
1. Write your name, class and register number.
2. Do not turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write your answers in the booklet.

Booklet A	56
Booklet B	44
Total	100

Booklet B (44 marks)

For questions 29 to 42, write your answers clearly in the spaces provided.

29. Study the flowchart below carefully. Q, R, S and T are living things.



(a) Based on the flowchart above, state one difference between R and S. [1]

(b) Based on the flow chart above, state one similarity in the characteristics of S and T. [1]

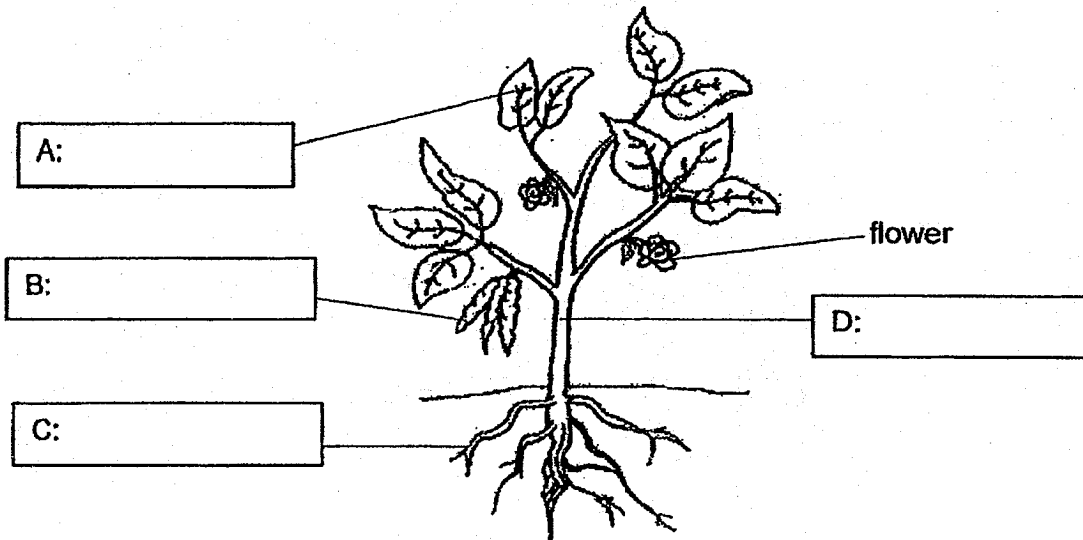
(c) Can Q be a plastic ball? Explain why. [1]

Score	3
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30. The diagram below shows a plant and its parts.

(a) Name the plant parts, A, B, C and D, in the boxes below.

[2]

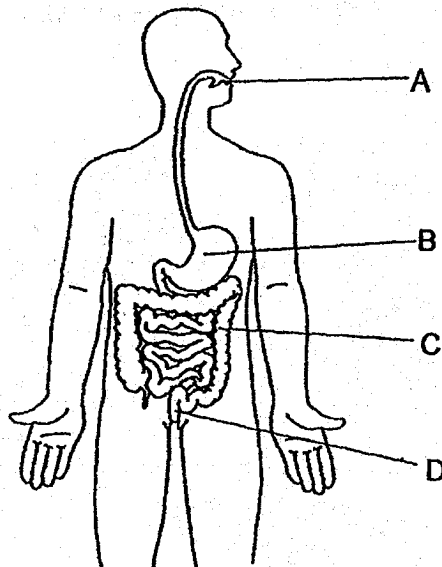


(b) State a function of plant part C.

[1]

Score	3
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31. The diagram below shows the human digestive system.

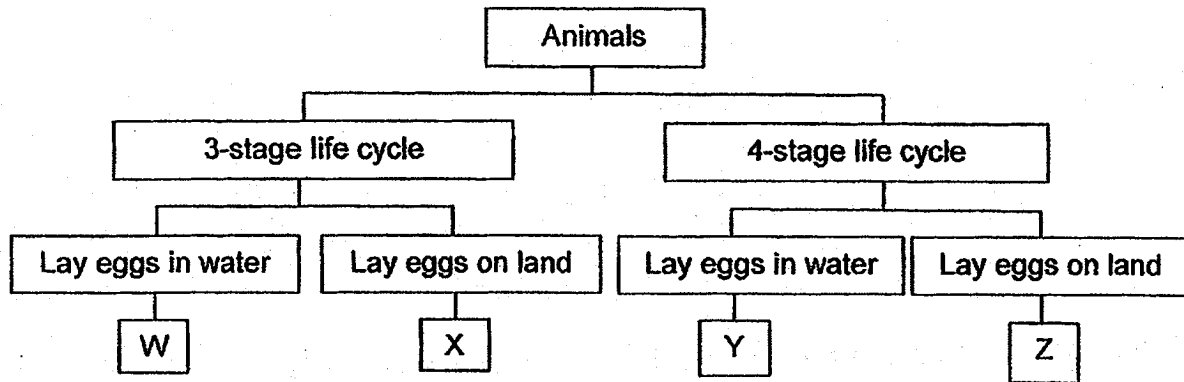


(a) State the part where digestion begins. Part: _____ [1]

(b) Explain how biting and chewing of food by the teeth affects the amount of food digested in the mouth.

Score	2
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32. Study the classification chart below.



(a) State one similarity in the life cycle of Animal X and the life cycle of a cat. [1]

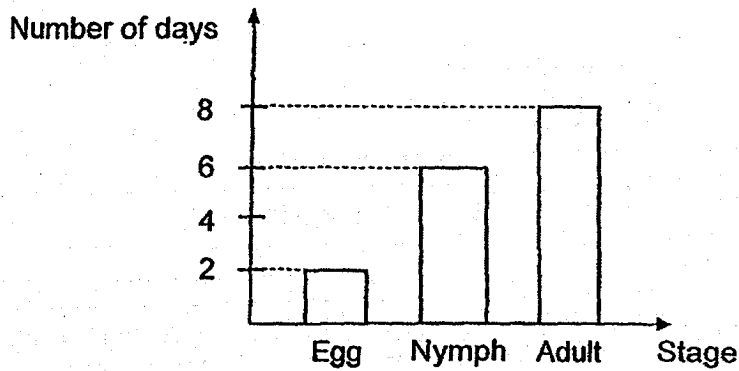
(b) Which of the letters, W, X, Y, Z, represent the following animals? [1]

(i) A butterfly: _____

(ii) A frog: _____

Score	2
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33. An unknown insect has 3 stages in its life cycle. The graph below shows the duration of each stage.



(a) At which of the above stages is the insect able to reproduce? [1]

(b) i) Based on the graph above, how long would it take for an egg to become an adult after it has been laid? [1]

ii) Based on the graph above, how long does it take for the insect to complete one life cycle. [1]

(c) If the above insect is a cockroach, give a difference between the characteristic of its nymph and its adult. [1]

Score	4
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34. Eric placed similar seeds, J, K, L, M and N in a room. They are given different conditions and the results of his experiment are shown below.

Seeds	Conditions			
	Given water daily	Exposed to light	Given Substance X	Seed grew into seedling (Germination)
J	Yes	Yes	Yes	Yes
K	No	Yes	Yes	No
L	Yes	Yes	No	Yes
M	No	No	Yes	No
N	Yes	No	No	Yes

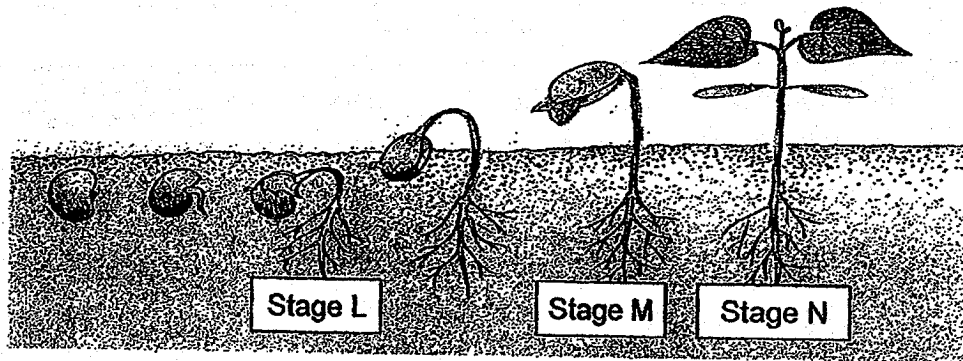
(a) Based on the above results, which condition(s) stated in the table is/are necessary for the seed to germinate? [1]

(b) What can Eric conclude about the presence of Substance X and light on the germination of a seed? [1]

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

Score	3
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35. The diagram below shows some of the stages in the life cycle of a plant.

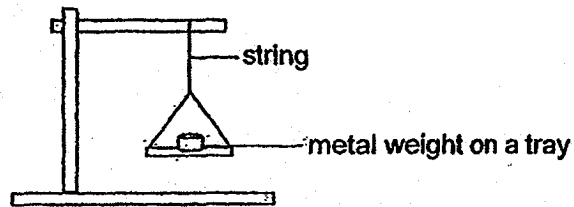


- (a) At which stage, L, M or N, does the plant make its own food? Explain. [1]

- (b) How can you tell if a plant has grown into an adult plant? [1]

Score	2
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36. Sam set up an experiment to find out how the thickness of a string would affect the strength of the string.



He used 3 strings, A, B and C. He added weights on the tray until the string broke. The table below shows the number of weights that each string could hold before it broke.

String	Thickness of string (unit)	Number of weights that each string could hold before it broke
A	1	5
B	2	10
C	3	15

- (a) Which string, A, B or C is the strongest? Explain your answer. [2]

- (b) Put a tick (✓) in the boxes below to select the constant variable to ensure a fair test in the above experiment. [1]

Variable	To be kept the same
Length of string	
Material of string	
Thickness of string	
Mass of weights	

Score	3
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37. Beth placed two identical ring magnets, A and B, through a wooden rod on a wooden base. She observed that the magnets, A and B, were at a distance away from each other as shown in the diagram below.

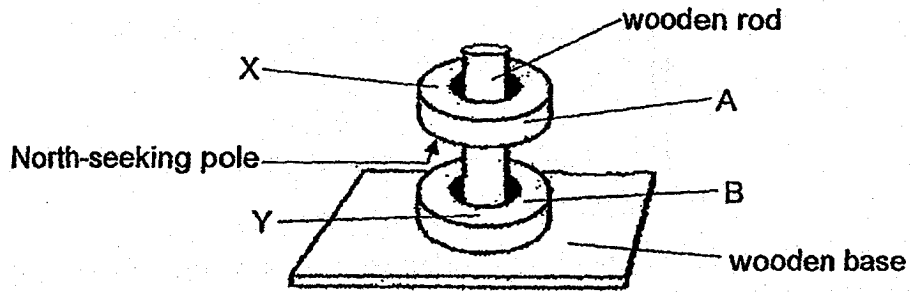


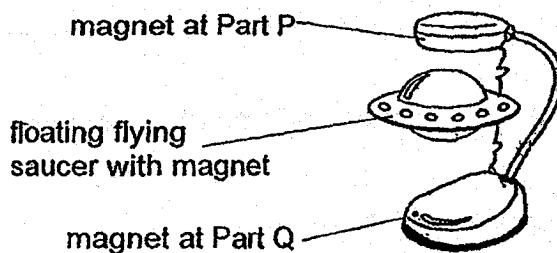
Diagram 1

- (a) Explain why the magnets, A and B, were at a distance away from each other. [1]

- (b) The north-seeking pole of the magnet, A, is shown. Identify the magnetic poles of the surfaces, X and Y. [1]

X: _____ Y: _____

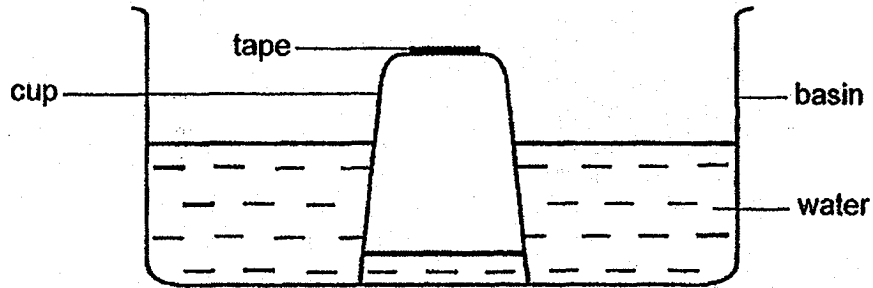
Beth has a toy flying saucer as shown below.



- (c) Explain why the flying saucer is floating. [2]

Score	4
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38. Abdul made a hole at the base of a plastic cup and then sealed it with tape. When he pushed the inverted cup into the basin of water, only a small amount of water entered the cup.



(a) Explain why a small amount of water entered the cup? [1]

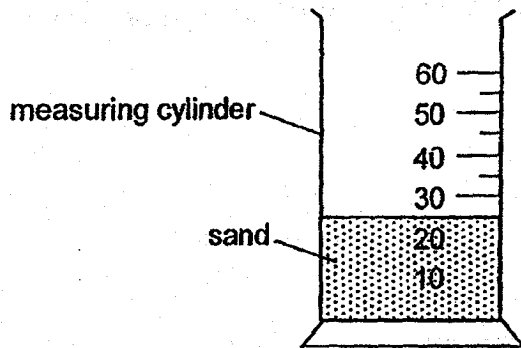
(b) Give a reason why the water level in the cup does not move any higher. [1]

(c) Describe what would happen to the water level in the cup if Abdul removed the tape from the cup. [1]

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

Score	4
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39. James filled a measuring cylinder with 25 cm^3 of sand as shown in the diagram below.



He then poured 35 cm^3 of water into the same measuring cylinder.

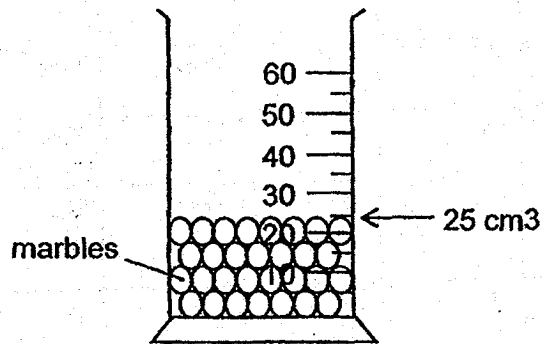
- (a) What would be the total volume of sand and water shown on the measuring scale of the cylinder? Tick your answer in the table below. [1]

Total volume of water and sand	Tick (✓)
More than 60 cm^3	
At 60 cm^3	
Between 60 cm^3 and 25 cm^3	
Below 25 cm^3	

- (b) Explain your choice in (a). [2]

Score	3
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(c) James repeated the experiment but used marbles instead of sand.



After pouring the 35 cm^3 of water into the cylinder, will the water level be higher or lower than in (a)? Explain why. [1]

Score	1
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40. The table below shows the properties of A, B, C and D.

Properties	A	B	C	D
Does it have mass?	Yes	No	Yes	Yes
Can it be seen?	No	No	Yes	Yes
Does it have a definite shape?	No	No	Yes	No
Does it have definite volume?	No	No	Yes	Yes

(a) Which of the above, A, B, C or D, can represent music?

[1]

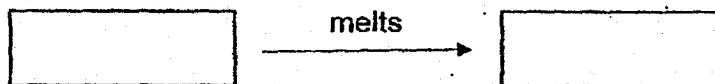
(b) If D is matter, what state of matter is it?

[1]



(c) When the above candle is lit, the wax melts. State "solid", "liquid" or "gas" for the change of state of the wax as it melts in the boxes below.

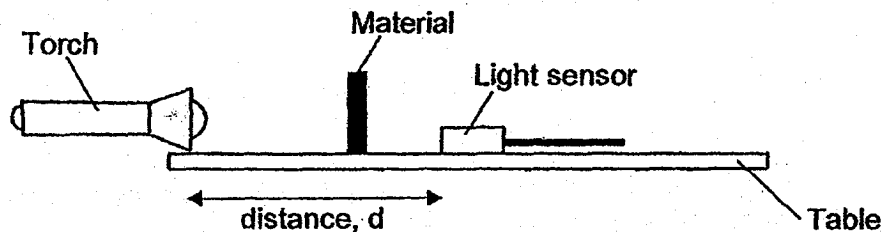
[1]



Change of state of candle wax

Score	3
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41. An experiment was conducted to find out the amount of light that would pass through 4 different materials, P, Q, R and S. A light sensor was used to detect how much light passes through each material. The setup for the experiment is shown below.

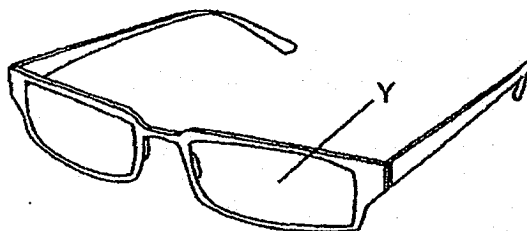


When no material was placed between the torch and light sensor, the amount of light detected was 500 units.

The following table shows the results when different materials were placed between the torch and light sensor.

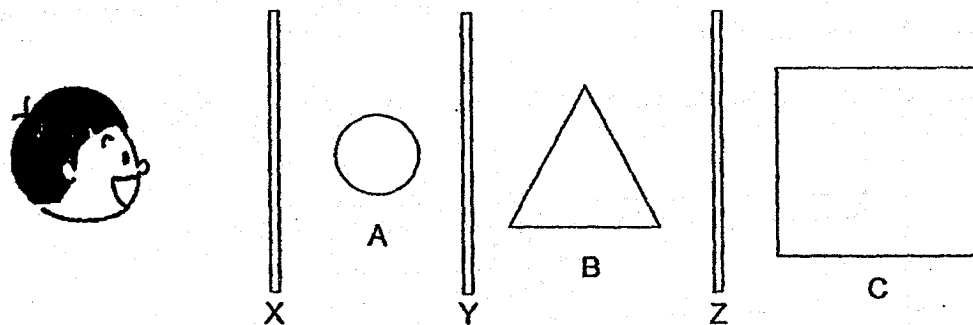
Material	Amount of light detected (units)
P	470
Q	390
R	180
S	0

- (a) Based on the table above, which of the materials, P, Q, R or S, will be most suitable to make part Y of the spectacles below which is used for reading? Give a reason for your answer. [2]



- (b) Without changing any of the apparatus or equipment used, suggest how you can increase the readings on the light sensor for all the materials? [1]

A boy looked across the room at objects, A, B and C, and three pieces of glass, X, Y and Z. They were arranged in a row as shown below.

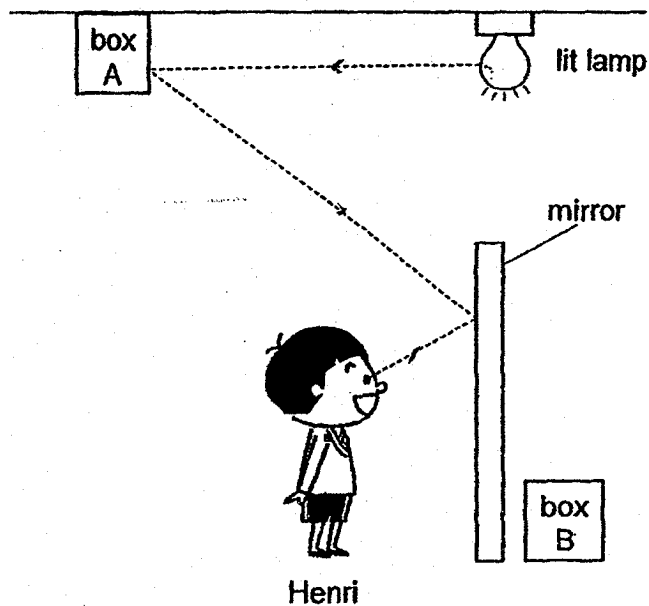


Screen	Property
X	Allow most light to pass through
Y	Allow some light to pass through
Z	Does not allow light to pass through

- (c) Which of the objects, A, B or C, can the boy see? [1]

Score	2
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42. Henri set up an experiment as shown in the diagram below.



When Henri faces the mirror, he is able to see box A clearly behind him but not box B. The path of light shown in the above diagram as dotted lines allows Henri to see box A.

(a) Draw in the arrows on the dotted line in the above diagram to show the direction of the path of light. [1]

(b) With the help of the diagram, explain how Henri is able to see box A even though it is behind him. [2]

Score	3
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EXAM PAPER 2018 (P4)

SCHOOL : TAO NAN

SUBJECT : SCIENCE

TERM : SA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	2	1	3	3	1	4	1	3	4
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
2	2	4	1	4	3	3	3	2	2
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
3	2	1	3	3	4	1	4		

Q29) a) R does not lay eggs but S lay eggs.

b) Both S and T lay eggs.

c) No. Q cannot be a plastic ball. The title of this flowchart is "Living Thing" but a plastic ball is not a living thing.

Q30) a) A : leaf

B : fruit

C : root

D : stem

b) Plant part C holds the plant firmly to the ground.

Q31) a) Part A

b) Biting and chewing helps to grind the food, producing a large surface of the food for the digestive juices to come in contact with, increasing the speed of digestion in the mouth.

Q32) a) Both Animal X and the cat have a 3 stage life cycle.

b) i) A butterfly : Z

ii) A frog : W

Q33) a) The adult stage

b) 8 days (17) 16 days

c) The cockroach as a nymph does not have wings but the cockroach as an adult has wings.

Q34) a) The condition given water daily is necessary.

b) The presence of substance X and light are not necessary for the germination of a seed.

c) This ensures that his results are reliable.

Q35) a) Stage N. The leaves can trap sunlight.

b) The plant has flowers.

Q36) a) String C. It held the most number of weights among the three strings before breaking.

b) Length of string , Material of string , Mass of weights

Q37) a) The like poles of magnet A and B may have been facing each other, thus repelled each other.

b) X : South-seeking pole

Y : North-seeking pole

c) The like poles of the magnet at Part P and the magnet of the flying saucer are facing each other and like poles of the magnet at Part Q and the magnet in the flying saucer are facing each other, so these magnets are repelling each other.

Q38) a) Air occupies space but can be compressed, thus when the cup is pushed into the basin, some water entered the cup and compressed the air.

b) The tape prevents air in the cup from escaping the cup when the water tries to move higher as air can be compressed only to a certain limit.

c) The water level in the cup increases and would be equal to the level in the basin.

d) The air in the cup escapes through the hole and the water would enter the cup and occupy the space left by the air.

Q39) a) Between 60 cm³ and 25 cm³

b) There are air, spaces between the grains of sand, allowing the water to fill them up.

c) Lower. There are more space and more water between the marbles for the water to fill, so more water can fill the air spaces between the marbles.

Q40) a) B

b) Liquid

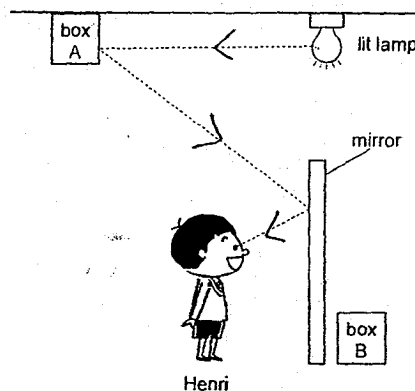
c) Solid – Liquid

Q41) a) Material P. It allows the transparent, so that the words can be seen clearly through partly.

b) Move the torch towards the material

c) Objects A and B

Q42) a)



b) The light from the bulb is reflected by Box A and then the light is reflected by the mirror into Henri's eyes.