RED SWASTIKA SCHOOL

SCIENCE
2023 END OF YEAR EXAMINATION
PRIMARY 4

Name : _____ ( )

Class : Primary 4/ _____

Date : 27 October 2023

BOOKLET A

Total time for Booklets A & B: 1h 45 min

Booklet A: 28 questions (56 marks)

Note:

1. Do not open the booklet until you are told to do so.
2. Read carefully the instructions given at the beginning of each part of the booklet.
3. Do not waste time. If the question is too difficult for you, go on to the next question.
4. Check your answers thoroughly and make sure you attempt every question.
5. In this booklet, you should have the following:
   a. Page 1 to Page 17
   b. Questions 1 to 28

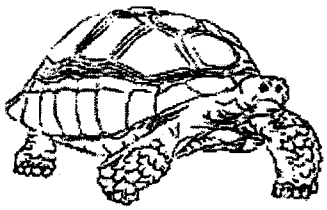
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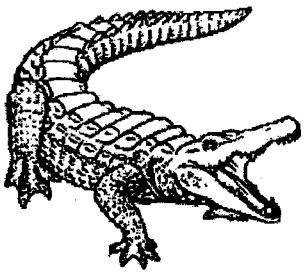
For Questions 1 to 28, choose the most suitable answer and shade its number in the OAS provided.

1. Which animal is not a reptile?

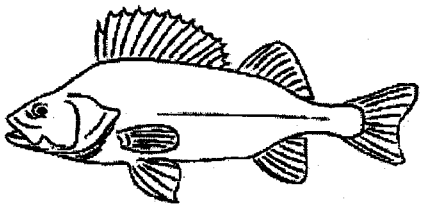
(1)



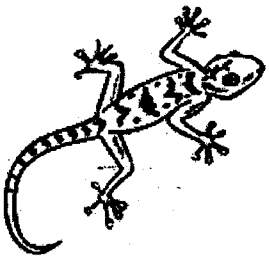
(2)



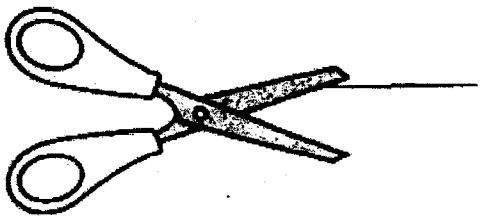
(3)



(4)



2. The diagram below shows a pair of scissors.

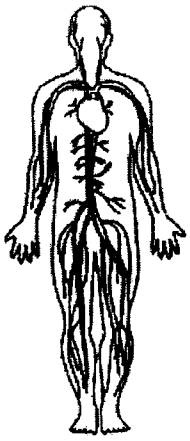


Metal is used to make the blades of the scissors because metal _____.

(1) is shiny
(2) can bend easily
(3) does not break easily
(4) allows light to pass through

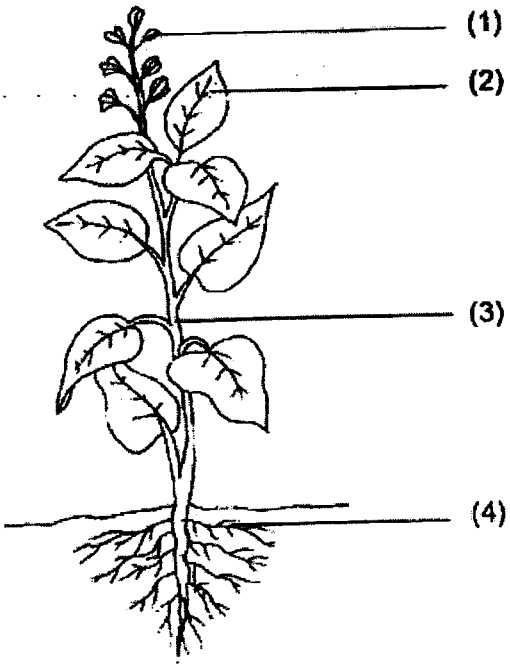
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3. Which organ system is shown in the diagram?



(1) skeletal system
(2) digestive system
(3) muscular system
(4) circulatory system

4. Which part, (1), (2), (3) or (4), makes food for the plant?



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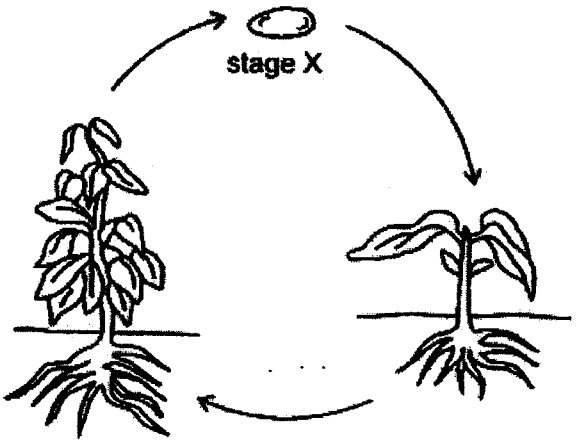
5. Nina made the following observations on the life cycle of an animal.

- There are three stages in the life cycle.
- The young looks like the adult.

Which animal was Nina observing?

(1) frog
(2) beetle
(3) butterfly
(4) cockroach

6. The diagram shows the life cycle of a plant.

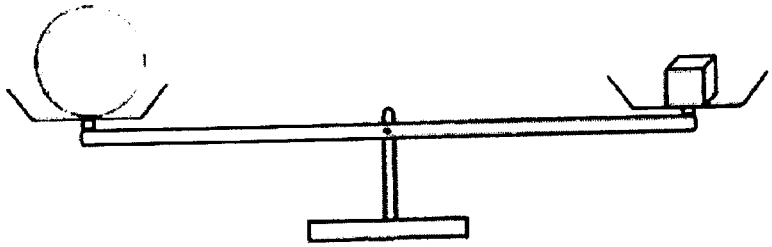


What is the stage marked X?

(1) egg
(2) seed
(3) nymph
(4) young plant

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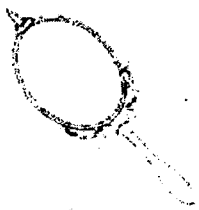
7. Study the diagram below.



Which of the following statements is true?

(1) Both objects are the same size.
(2) Both objects are the same mass.
(3) Both objects are the same shape.
(4) Both objects are the same volume.

8. Which of the following is a light source?

(1) 
mirror

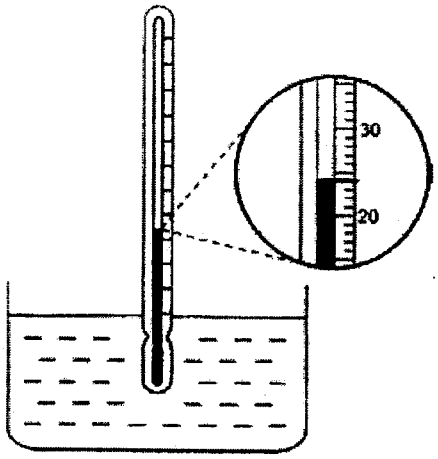
(2) 
leaf

(3) 
orange

(4) 
candle flame

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9. Ali used the thermometer below to measure the temperature of the water in the basin.



What is the temperature of the water in the basin?

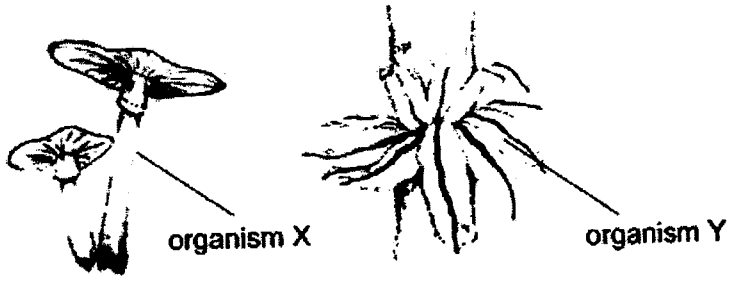
(1) 20°C
(2) 22°C
(3) 24°C
(4) 26°C

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

(1) steel ball
(2) rubber ball
(3) wooden ball
(4) aluminium ball

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11. Wen Jie observed two organisms, X and Y, as shown below.



He made the following statements about both organisms.

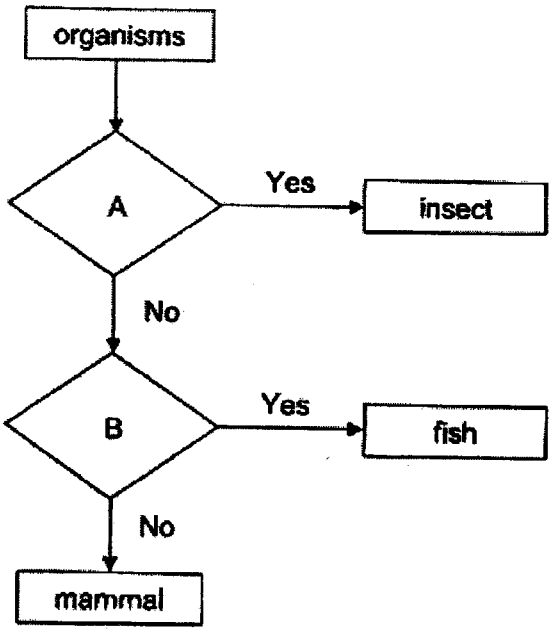
A: Both reproduce by spores.
B: Both are non-flowering plants.
C: Both can make food on their own.

Which of the above statement(s) is/are correct?

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

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12. Study the chart below.



Which of the following best represents characteristics A and B?

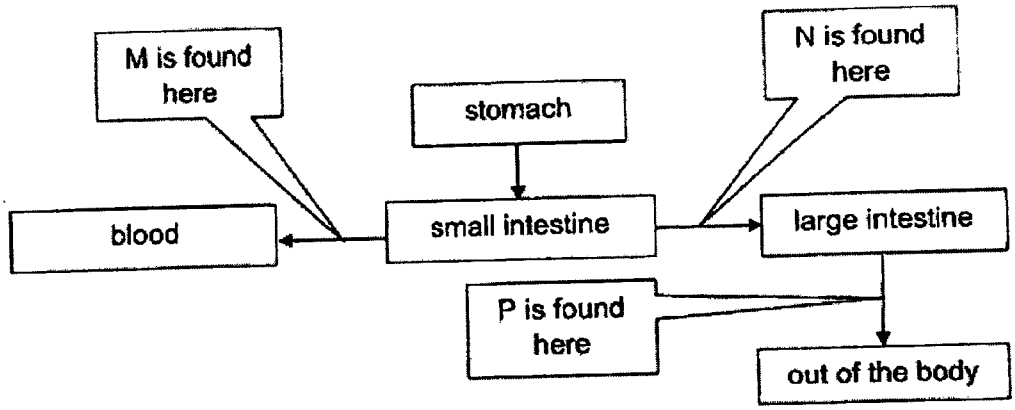
	A	B
(1)	has wings	has gills
(2)	has wings	has hair
(3)	has three body parts	has gills
(4)	has three body parts	has hair

13. Which of the following is not a function of the skeletal system?

(1) It supports the body.
(2) It gives the body shape.
(3) It protects the organs in the body.
(4) It carries digested food, water and oxygen in the blood to all parts of the body.

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14. The diagram below shows part of the human digestive system. The arrows represent the direction of the substances.

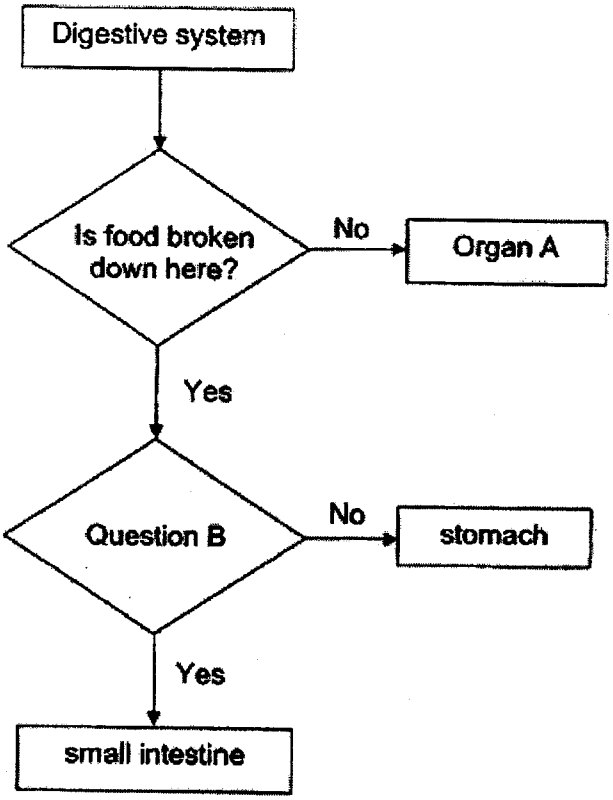


What do the letters M, N and P represent?

	M	N	P
(1)	digested food	undigested food	undigested food
(2)	digested food	undigested food	digested food
(3)	undigested food	digested food	water
(4)	undigested food	digested food	undigested food

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15. Study the flowchart below.

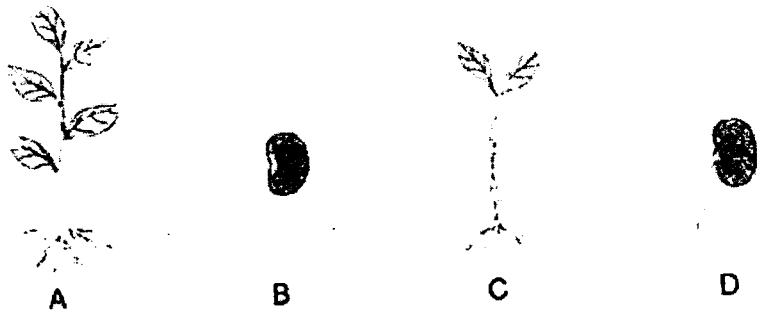


What can organ A and question B be?

	Organ A	Question B
(1)	mouth	Is digestion completed here?
(2)	mouth	Does digestion start here?
(3)	gullet	Is digestion completed here?
(4)	gullet	Does digestion start here?

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16. The diagram below shows the different stages of the life cycle of a plant.



At which stage(s) will the plant be able to make its own food?

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

17. Shulin planted five seeds each in three identical pots, X, Y and Z. The pots are left at different locations with different temperatures. She gave each plant the same amount of water every day. After one week, she measured and recorded the average height of the seedlings in each pot in the table below.

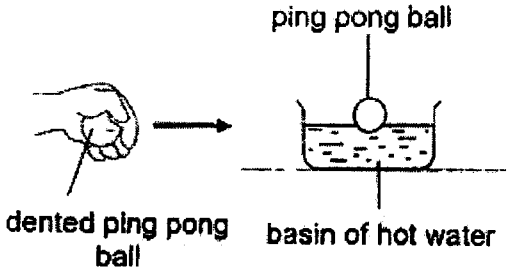
	Pot X	Pot Y	Pot Z
Temperature of surroundings (°C)	15	30	45
Number of seeds germinated	3	5	0
Average height of seedlings (cm)	12	20	0

Based on the table above, which of the following statements is correct?

(1) The amount of water affects germination.
(2) Seeds are unable to germinate at 45°C.
(3) Seeds germinate the best when temperatures are below 15°C.
(4) The temperature of the surroundings does not affect germination.

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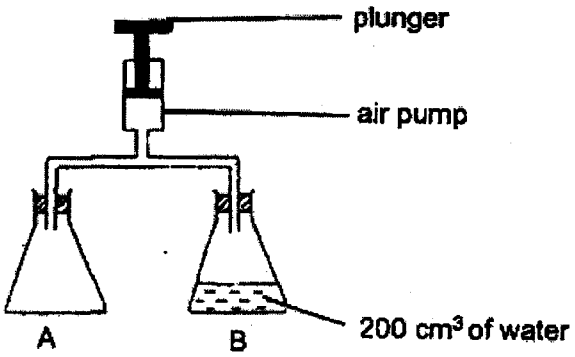
18. A dented ping pong ball will become round again when put into a basin of hot water.



What causes the ping pong ball to become round again?

(1) The ping pong ball gains heat and expands.
(2) The ping pong ball loses heat and contracts.
(3) The air inside the ping pong ball gains heat and expands.
(4) The air inside the ping pong ball loses heat and contracts.

19. Ravi joined two 500 cm^3 flasks, A and B, to an air pump shown below.

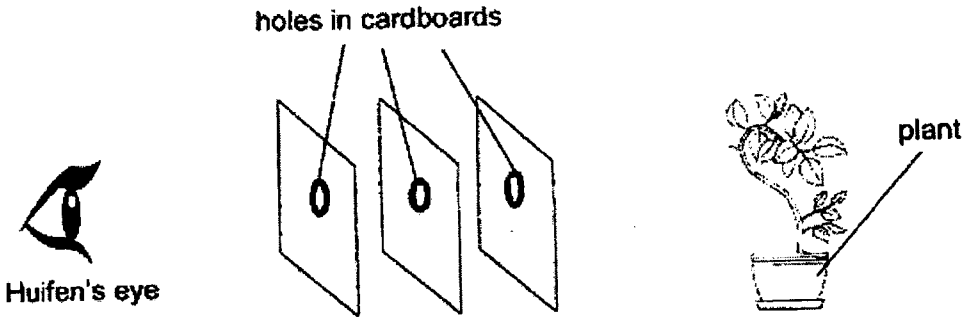


He pushed down the plunger to pump in 300 cm^3 of air into both flasks. What was the final volume of air in each flask after the pump?

	Volume of air in flask A (cm^3)	Volume of air in flask B (cm^3)
(1)	150	150
(2)	150	300
(3)	500	150
(4)	500	300

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20. Huifen set up the experiment below.

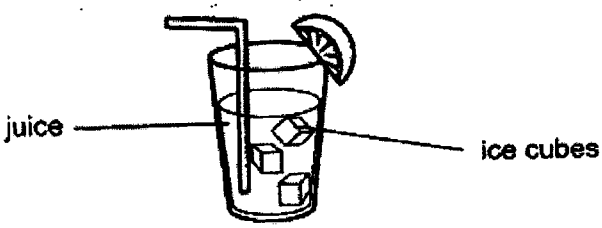


When the cardboards were placed in a straight line, Huifen could see the plant. However, when she shifted one of the boards slightly to the left, she could not see the plant anymore.

Which property of light explains Huifen's observation?

(1) Light travels in a straight line.
(2) Light is given out by the plant.
(3) Light is absorbed by the plant.
(4) Light can pass through the cardboards.

21. Mrs Tay added some ice cubes into a glass of juice as shown below.

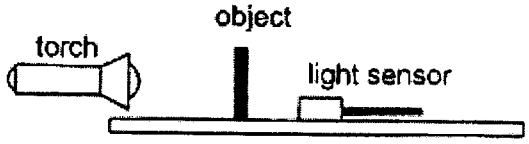


Which of the following correctly describes her observation after 15 minutes?

	Change in state of the ice cubes	Change in temperature of the juice
(1)	solid to liquid	increase
(2)	solid to liquid	decrease
(3)	liquid to solid	increase
(4)	liquid to solid	decrease

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22. Rudy wanted to investigate how different materials affect the amount of light passing through them using the set-up shown below.

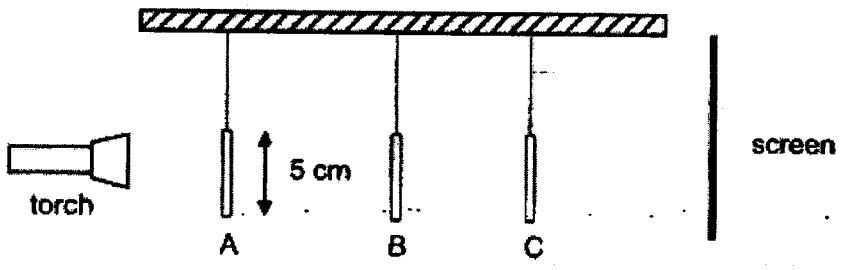


Which of the following variables should be kept constant for a fair test?

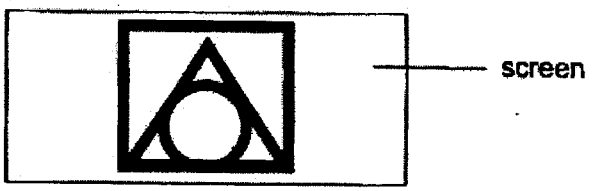
A: The material of the object
B: The thickness of the object
C: The brightness of the torch
D: The distance between the torch and the light sensor

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

23. Janelle placed 3 shapes A, B and C, at different distance in front of a torch as shown below. The shapes were all 5 cm tall and hollow in the center.



The diagram below shows the shadow that was formed on the screen.

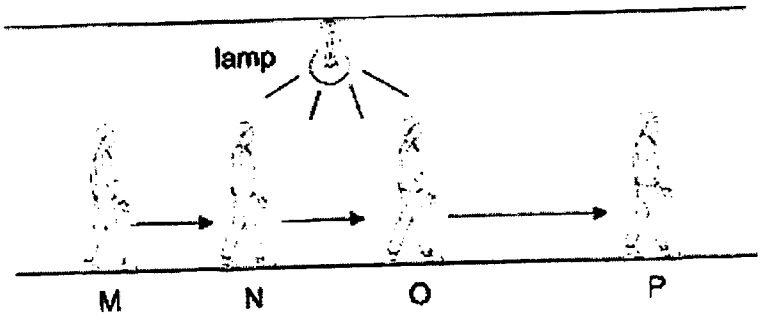


Which of the following correctly represents shapes A, B and C?

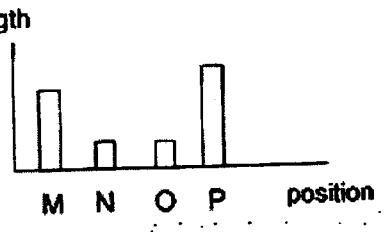
	A	B	C
(1)	circle	triangle	square
(2)	triangle	square	circle
(3)	square	circle	triangle
(4)	square	triangle	circle

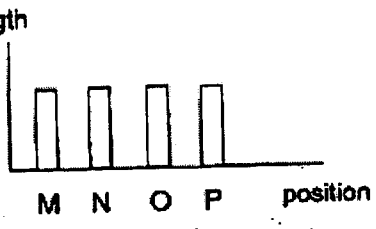
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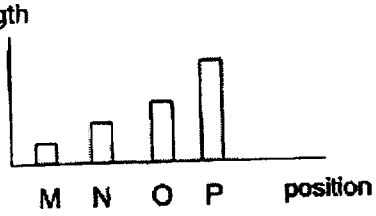
24. The man in the diagram below walks from position M to N, then to O and finally to P.

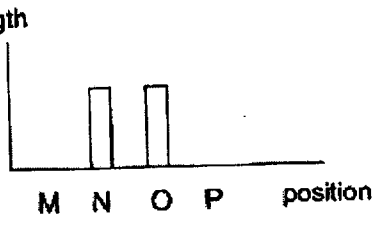


Which of the following shows how the length of the shadow will most likely change as he walks from M to P?

(1)


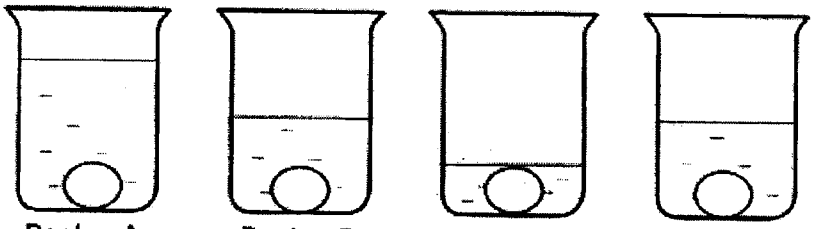
(2)


(3)


(4)


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25. Cedric placed 4 similar uncooked eggs into beakers A, B, C and D, which contained water at different temperatures and different volumes. The eggs were left in the beakers for 10 minutes.



Beaker A	Beaker B	Beaker C	Beaker D
(600 ml of water at 80°C)	(400 ml of water at 50°C)	(200 ml of water at 30°C)	(400 ml of water at 80°C)

After 10 minutes, Cedric cracked each of the eggs to find out how cooked it was. Arrange the eggs in order, from the most cooked to the least cooked.

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

26. A metal spoon is placed in a bowl of ice cream as shown below. After a while, the spoon becomes cold.

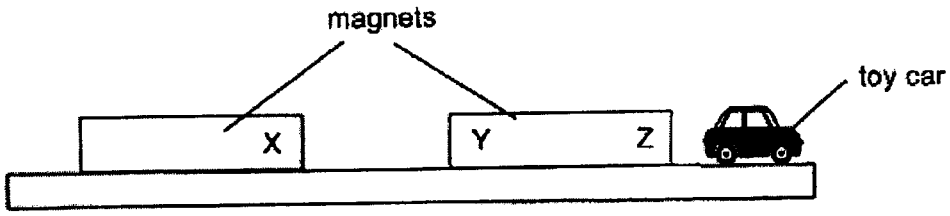


Which of the following statements explains why the spoon becomes cold after a while?

(1) The bowl loses heat to the spoon.
(2) The spoon gains heat from the bowl.
(3) The spoon loses heat to the ice cream.
(4) The ice cream gains heat from the bowl.

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27. Emma set up the experiment below.

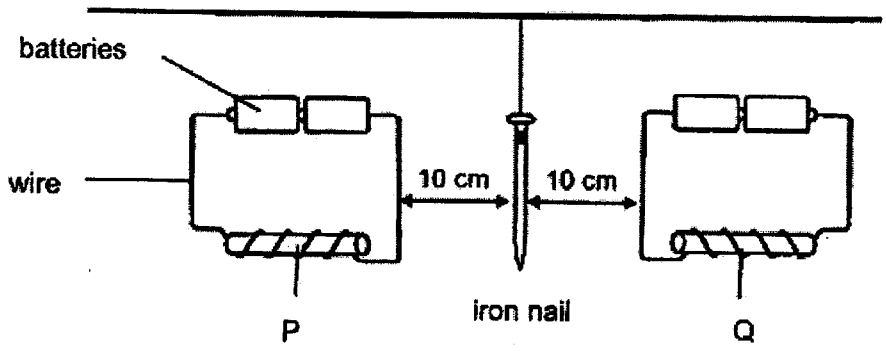


She used the magnets to make the toy car fall off the table. What are the likely poles of X, Y and Z?

	X	Y	Z
(1)	North	North	North
(2)	North	South	South
(3)	South	South	North
(4)	South	North	South

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28. Mr Wong had two electromagnets, P and Q, as shown below. He placed an iron nail in between the two electromagnets.



What should Mr Wong do if he wants the iron nail to move towards electromagnet Q?

A: Add more batteries to P.
B: Add more batteries to Q.
C: Increase the number of coils around P.
D: Increase the number of coils around Q.

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

END OF BOOKLET A

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RED SWASTIKA SCHOOL

SCIENCE
2023 END OF YEAR EXAMINATION
PRIMARY 4

Name : _____ ( )

Class : Primary 4/ _____

Date : 27 October 2023

BOOKLET B

13 Questions
44 Marks

In this booklet, you should have the following:
a. Page 17 to Page 33
b. Questions 29 to 41

	MARKS OBTAINED	POSSIBLE
BOOKLET A		56
BOOKLET B		44
TOTAL		100

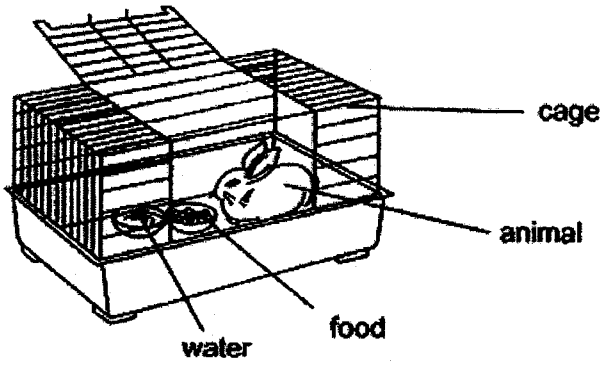
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Answer all the questions in the space provided.

29. Study the diagram below.



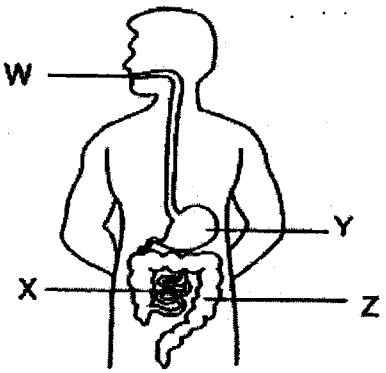
(a) After a few days, will the amount of food in the bowl increase, decrease or remain the same? (1m)

_____

(b) Based on the diagram above, name one substance this animal needs so that it remains alive. (1m)

_____

30. The diagram below shows the human digestive system.



Identify the part (W, X, Y or Z) where

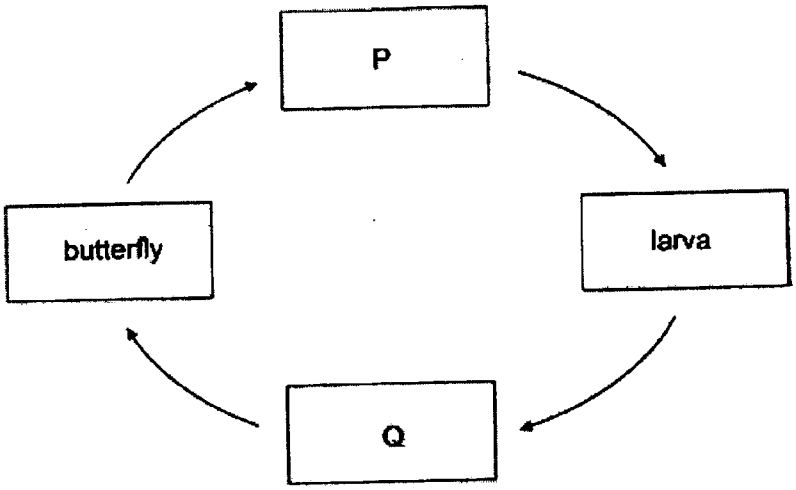
(a) digestion first takes place: _____ (1m)

(b) there is no digestion: _____ (1m)

4

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31. The diagram below shows the stages in the life cycle of a butterfly.



Choose the correct words from the box to answer the question below.

caterpillar	egg	pupa	seed

Name the two stages P and Q. (2m)

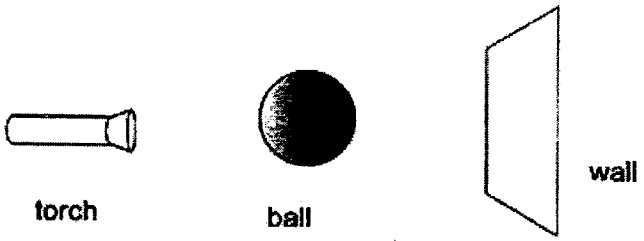
(a) P: _____

(b) Q: _____

2

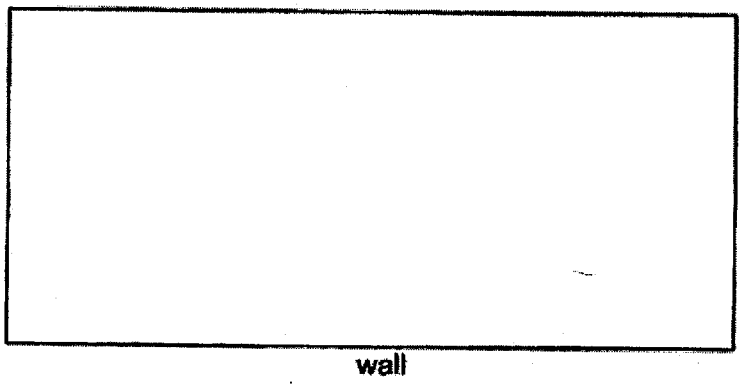
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32. John shines a torch on a ball and a shadow is formed on a smooth wall.

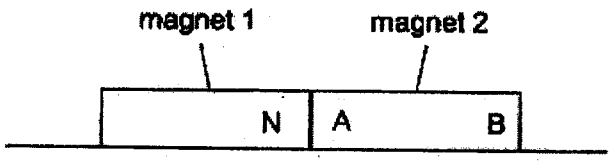


(a) A shadow is formed when light is _____ by an object. (1m)

(b) Draw the shadow of the ball that is formed on the wall. (1m)



33. Two magnets are placed together as shown below.



The north pole of magnet 1 is labelled 'N'.

Name the poles labelled A and B on magnet 2. (2m)

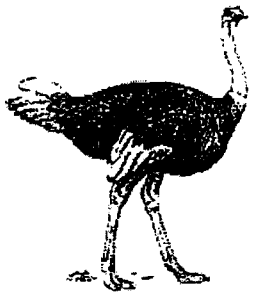
A: _____

B: _____

4

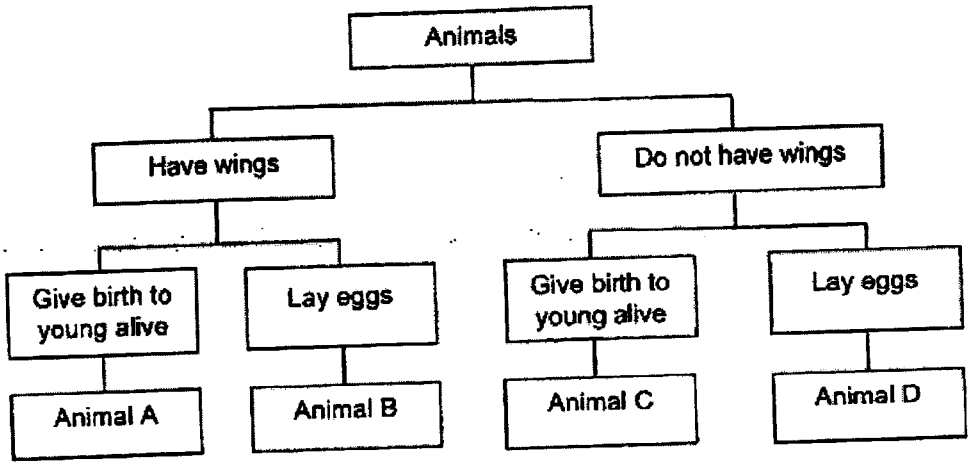
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34. Isaac saw the animal below in the zoo.



(a) Which animal group does the animal likely belong to? State one observable characteristic to support your answer. (2m)

Study the flow chart below.



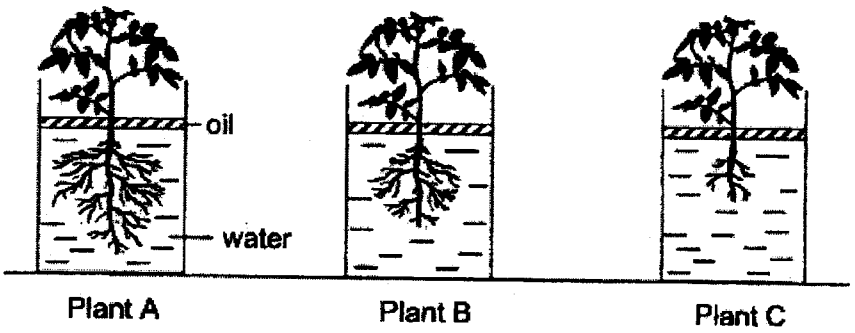
(b) State two characteristics of animal B. (2m)

(c) State a difference in characteristics between animal A and animal C. (1m)

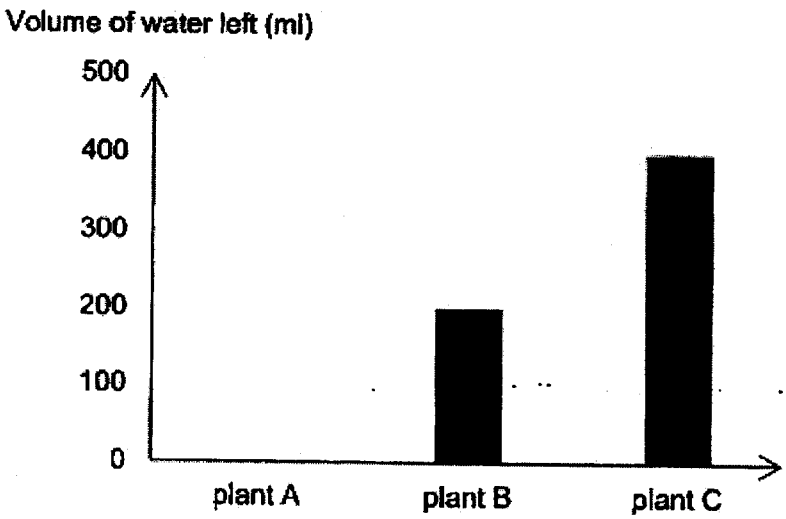
5

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35. Jiayi conducted an experiment with three similar kinds of plants, A, B and C, using the set-ups below. She put 500 ml of water into each of the set-ups and placed all three containers at the same location in a classroom.



After one week, she recorded the volume of water left in the containers.



(a) What is a possible volume of water left for plant A after one week? (1m)

_____

(b) State a reason for your answer in (a). (2m)

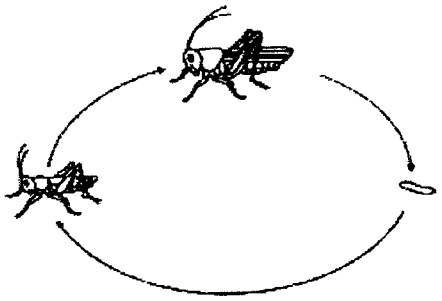
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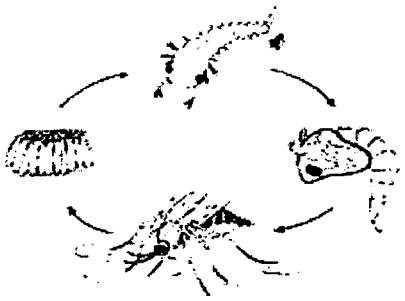
3

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36. The diagrams below show the life cycles of a grasshopper and a mosquito.



grasshopper



mosquito

(a) Based on the diagrams above, state one similarity and one difference between the life cycle of a grasshopper and the life cycle of a mosquito. (2m)

Similarity: _____

_____

Difference: _____

_____

2

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36. Dengue fever can be spread by adult female Aedes mosquitoes. A group of scientists carried out an experiment on these mosquitoes and recorded their results in the table shown below.

Temperature of the surroundings (°C)	Days taken for the Aedes mosquito to complete its life cycle
20	18
25	16
30	13
35	10

(b) What is the relationship between the temperature of the surroundings and the time taken for the Aedes mosquito to complete its life cycle? (1m)

_____

_____

(c) The month of April has an average temperature of 32°C. What is a possible number of days for an Aedes mosquito to complete its life cycle? (1m)

_____

2

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37. Siti placed a plasticine cube into a beaker containing 100 cm^3 of water. The water level rose as shown in diagram A.

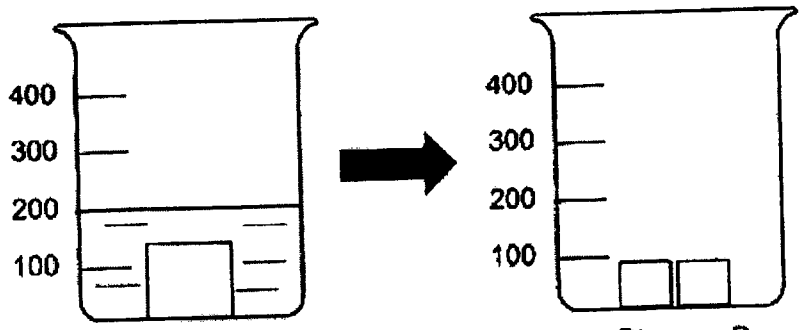


Diagram A Diagram B

(a) Siti then separated the same plasticine into two smaller pieces of plasticine cube and put them into the beaker as shown in diagram B. Using a pencil and ruler, draw a new line in diagram B to show the new water level. (1m)

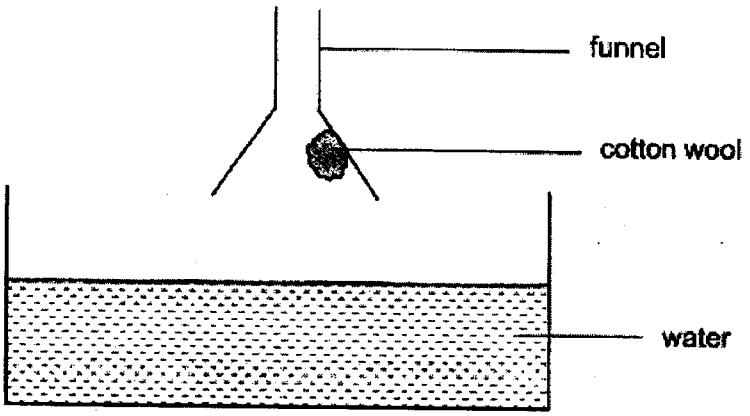
(b) Which property of solids did you use to get your answer in (a)? (1m)

_____

2

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37. Siti stuck a dry piece of cotton wool in a funnel as shown below. She then pushed the funnel into a basin of water.



(c) What will she observe? Tick the correct option. (1m)

Observation	Tick (✓) the correct option
The cotton wool will remain dry.	
The cotton wool will become wet.	

(d) Explain your answer in (c). (2m)

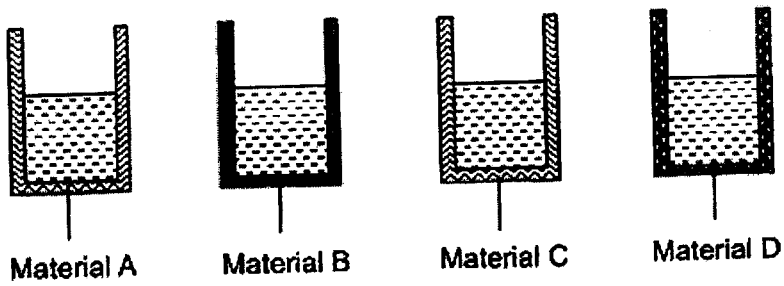
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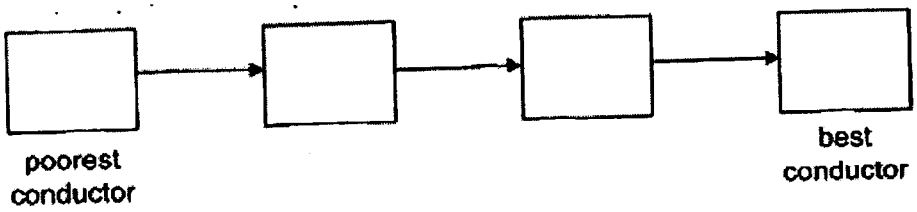
38. Fandi prepared four containers made of different materials. Each container contained the same amount of boiling water at 90°C.



After half an hour, he recorded the temperature of the water in all four containers in the table below.

Material that container is made of	Temperature of water after half an hour (°C)
A	35
B	70
C	50
D	85

(a) Arrange the materials from the poorest to best conductor of heat. (2m)



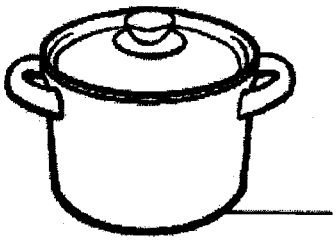
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38. (b) All four containers are left in a classroom in Red Swastika School for three days. Predict the temperature of the water in all four containers at the end of three days. Put a tick (✓) in the correct box. (1m)

☐ 10°C ☐ 30°C ☐ 70°C

Fandi wanted to use one of the materials to make part Y of the cooking pot below.



(c) Based on Fandi's results, which material, A, B, C or D, is most suitable to make part Y of the cooking pot so that food will be cooked the fastest? Explain your answer. (2m)

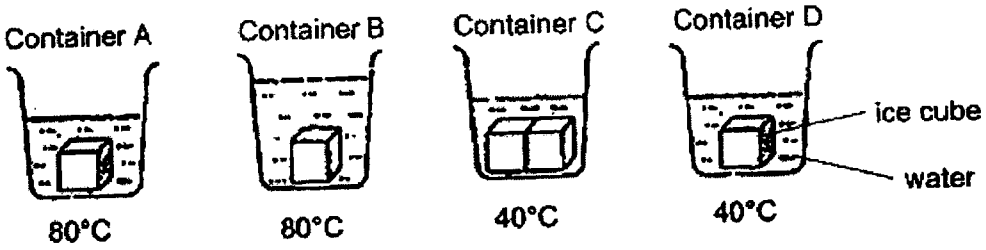
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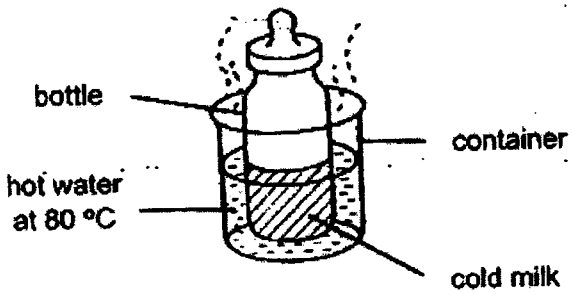
39. Charis wanted to find out how the temperature of water affects the melting rate of an ice cube. She prepared four containers of water, A, B, C and D, as shown below. All the ice cubes are of the same size.



(a) Which two containers must Charis use in order to ensure a fair test? (1m)

_____

Charis conducted another experiment as shown below. She took a bottle of cold milk out of the refrigerator and placed it into a container of hot water. The bottle was left in the hot water for half an hour.



(b) What will happen to the temperature of the cold milk after half an hour? Give a reason for your answer. (2m)

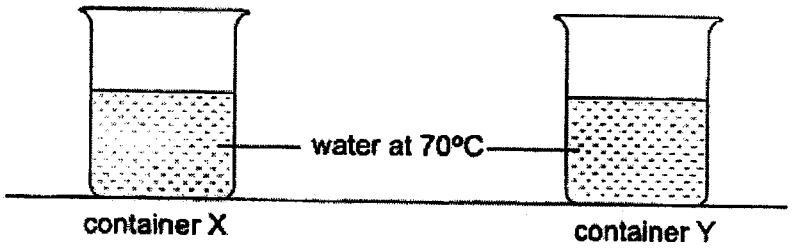
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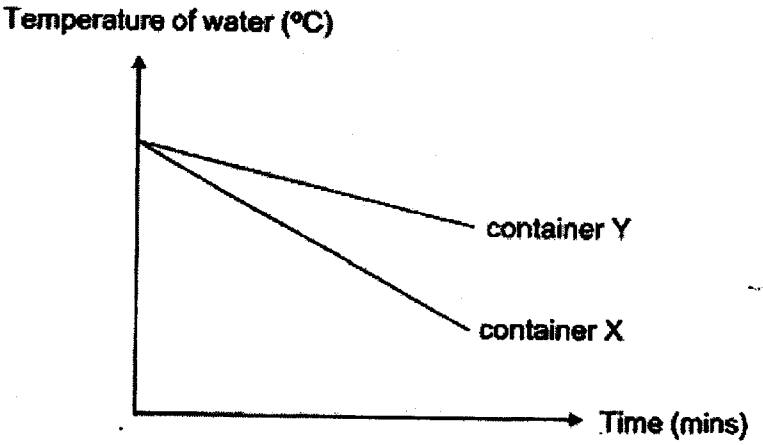
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39. Charis had two similar containers, X and Y, made of different materials as shown below. She poured an equal amount of water at 70°C into both containers.



Charis then measured the temperature of the water in both containers over a period of time and plotted her results in the graph below.



(c) Which container, X or Y, should Charis use if she wants to ensure that the hot water stays warm for a longer period of time? Explain your answer. (2m)

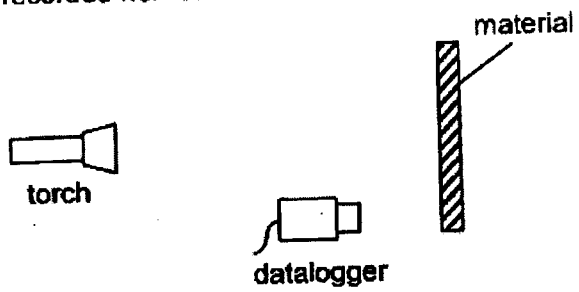
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40. Sarah set up the following experiment in a dark room. She shone a torch on materials A, B and C one at a time and measured the amount of light that is reflected. She recorded her results in the table below.



Material	Amount of light detected by datalogger (units)
A	300
B	0
C	100

Sarah wanted to use one of the materials to stick onto her cycling helmet so that she could be seen more clearly on the road at night.



(a) Based on the table above, which material will be most suitable? Explain your answer. (2m)

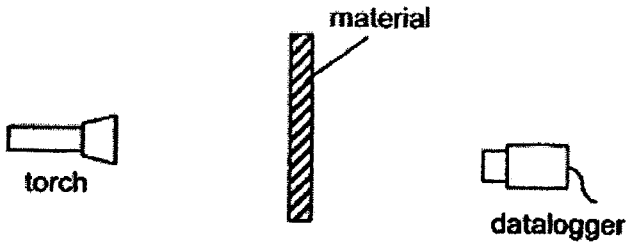
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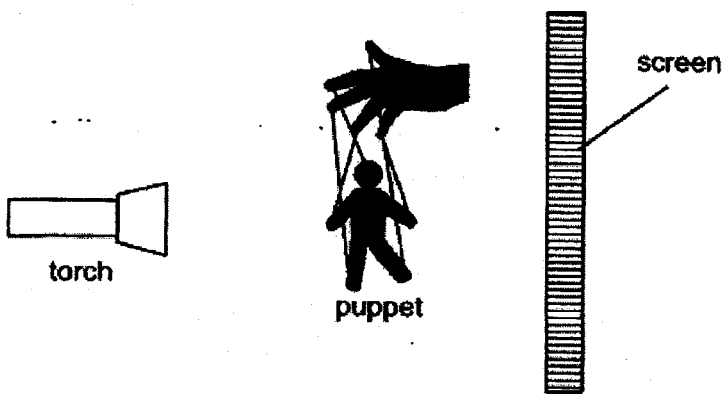
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40. Using the same set-up, Sarah shone a torch on three different materials X, Y and Z and measured the amount of light that passes through each material. The table below shows her results.



Material	Amount of light detected by datalogger (units)
X	50
Y	500
Z	0

Sarah set up a puppet show as shown below.



(b) Based on Sarah's results, which material, X, Y or Z, is most suitable to make the puppet? Explain your answer. (2m)

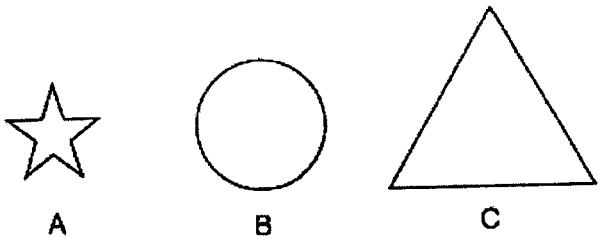
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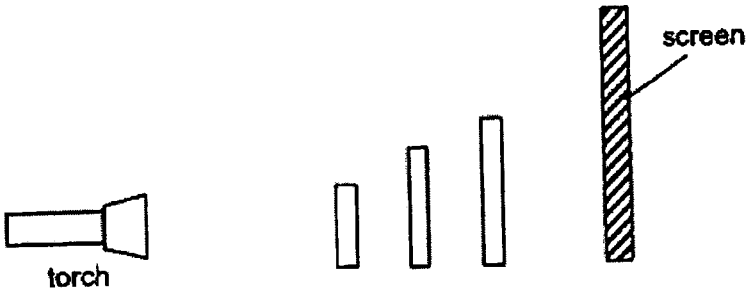
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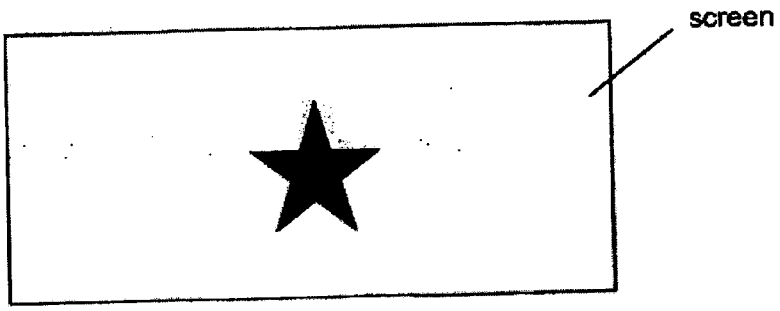
40. Sarah has three sheets of materials, A, B and C, of different shapes and sizes.



She arranged the materials in between a torch and a screen as shown below.



She observed the shadow cast on the screen.



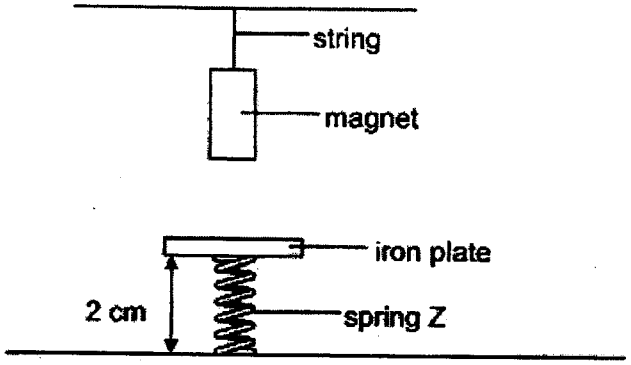
(c) What properties should materials A, B and C have in order to form the shadow above? Fill in the table below with the letters A, B and C. (1m)

Property	Material
Allows all light to pass through	
Allows some light to pass through	
Does not allow light to pass through	

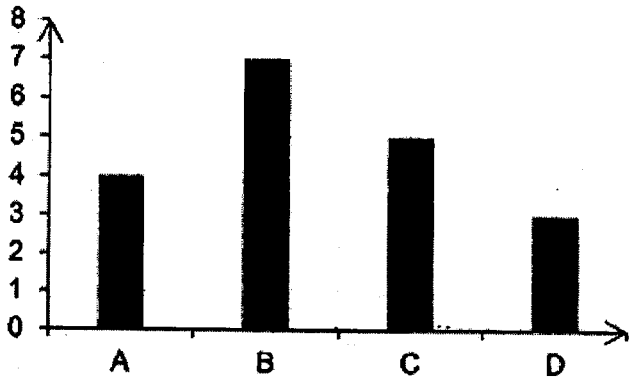
1

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41. Titus conducted an experiment to test the magnetic strength of four different magnets, A, B, C and D. An iron plate was attached to spring Z, which was 2 cm long at first. He then measured the length of spring Z each time a different magnet was hung above it.



The graph below shows the results of his experiment.



(a) Based on the results of the experiment, which magnet has the weakest magnetic strength? Explain your answer. (1m)

(b) Titus changed the iron plate to a plastic plate and he realised that the length of spring Z remained the same for all four magnets. Explain why. (1m)

End of Booklet B
Please check your answers.

2

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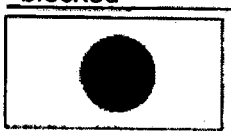
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RED SWASTIKA SCHOOL
P4 Science End of Year Examination 2023
Correction Template

Section A: Multiple Choice Questions (MCQ)

1	(3)	6	(2)	11	(1)	16	(2)	21	(2)	26	(3)
2	(3)	7	(2)	12	(3)	17	(2)	22	(4)	27	(3)
3	(4)	8	(4)	13	(4)	18	(3)	23	(4)	28	(4)
4	(2)	9	(3)	14	(1)	19	(4)	24	(1)		
5	(4)	10	(1)	15	(3)	20	(1)	25	(2)		

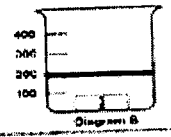
Section B: Open-ended Questions

Qn	Answer
29	(a) decrease (b) water
30	(a) W (b) Z
31	(a) egg (b) pupa
32	(a) blocked (b)  Note: Shadow must be a **full circle** and **completely shaded**
33	(a) South (b) North
34(a)	Bird. It has feathers / It has wings.
34(b)	Animal B has wings and lays eggs.
34(c)	Animal A has wings but animal C does not have wings.
35(a)	Any volume less than 200 ml and more than 0ml.
35(b)	Plant A has most roots so it absorbed the most amount of water.
36(a)	Similarity: Both life cycles have an egg stage/ adult stage. Difference: The young of the grasshopper looks like the adult while the young of the mosquito does not look like the adult **OR** The grasshopper has 3 stages in its life cycle while the mosquito has 4 stages in its life cycle.

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36(b) When the temperature of the surroundings ___increases___, the time taken for the Aedes mosquito to complete its life cycle ___decreases___.

36(c) 11/ 12 days

37(a) 

Answer: Draw line at 200ml mark

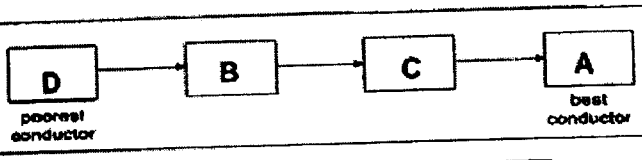
37(b) Solids have a ___definite volume___.

37(c)

	Tick (✓) the correct option
The cotton wool will remain dry.	
The cotton wool will become wet.	✓

37(d) Air in the funnel will ___escape___ through the opening. Water will enter to ___occupy the space___ previously occupied by the air. The cotton wool will ___absorb water___ and become wet.

38(a)



38(b) ☐ 10 °C ☑ 30 °C ☐ 70 °C

38(c) A, as the water has the ___greatest___ decrease in temperature, which shows that it is the ___best___ conductor of heat and food will be cooked the fastest.

39(a) Containers A and D

39(b) The temperature of the milk will ___increase___ as the cold milk ___will gain heat from the hot water___.

39(c) Y, as Y is a ___poorer___ conductor of heat .The hot water will ___lost heat to the surrounding slower___. Thus the hot water will stay warm for a longer period of time and can heat up the milk bottle.

40(a) A, it reflects the ___most___ amount of light so that her helmet can be clearly seen at night.

40(b) Z, it ___does not allow light to pass through___.

40(c)

Property	Material
Allows all light to pass through	C
Allows some light to pass through	B
Does not allow light to pass through	A

41(a) Magnet D , the length of spring Z is the ___shortest___.

41(b) Plastic is a ___non-magnetic___ material.

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