RED SWASTIKA SCHOOL

SCIENCE
2021 SEMESTRAL EXAMINATION 1
PRIMARY 4

Name : _____ ( )

Class : Primary 4/ _____

Date : 18 May 2021

BOOKLET A

Total time for Booklets A & B: 1h 30 min

Booklet A: 24 questions (48 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 12**
   b. **Questions 1 to 24**

For Questions 1 to 24, choose the most suitable answer and shade its number in the OAS provided.

1. Which of the following pairs of living things has been classified correctly?

	Non-flowering plants	Fungi
(1)	mushroom	bird's nest fern
(2)	sunflower	moss
(3)	moss	rose
(4)	bird's nest fern	bread mould

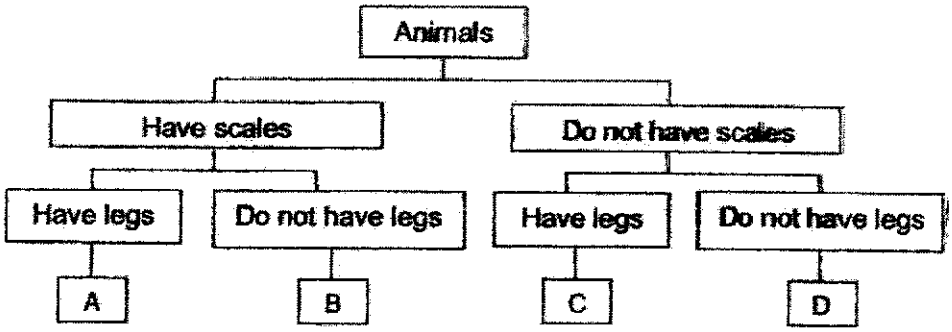
2. Four students made the following statements about the characteristics of animals.

Aveon: Reptiles give birth to young alive.
Bryan: Amphibians have moist skin.
Caris: Birds reproduce by laying eggs.
David: Mammals produce milk for their young to feed on.

Which student has made a wrong statement?

(1) Aveon
(2) Bryan
(3) Caris
(4) David

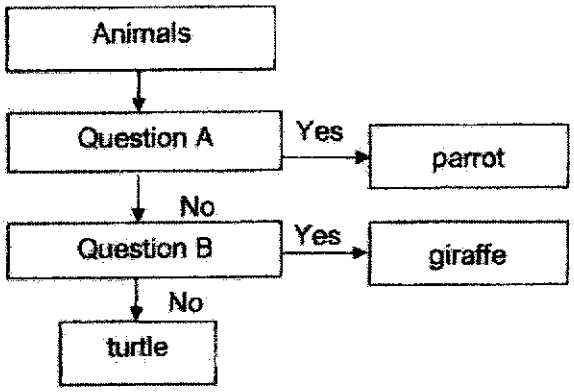
3. Study the classification diagram below carefully.



Which letter correctly represents a snake?

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

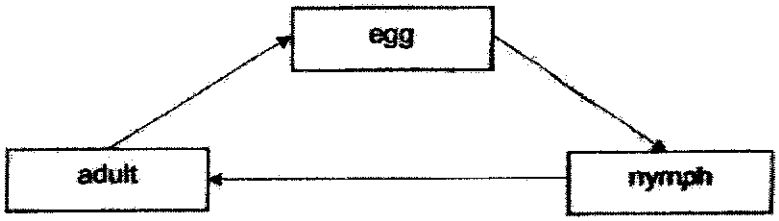
4. Study the flow chart carefully.



Which two questions, A and B, should be used to classify the animals as shown in the flow chart above?

	Question A	Question B
(1)	Do they have wings?	Are they covered with hair?
(2)	Are they covered with hair?	Do they have wings?
(3)	Do they lay eggs?	Do they have wings?
(4)	Are they covered with hair?	Do they lay eggs?

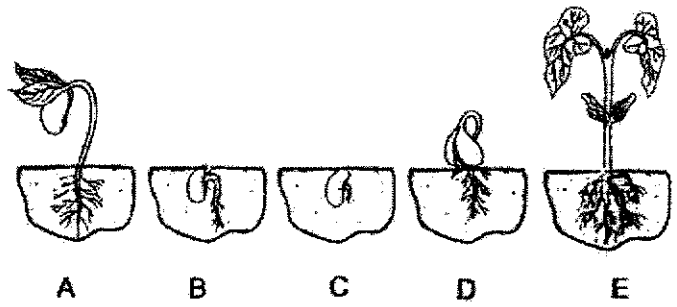
5. The diagram below shows the life cycle of an animal.



Which animal is likely to have the life cycle above?

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

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



Which of the following shows the correct arrangement of the stages in the life cycle of a plant?

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

7. Seeds W, X, Y and Z from a plant are placed under the conditions as shown below.

	conditions			
seed	water	air	light	temperature (°C)
W	√	√	×	28
X	√	×	√	28
Y	×	√	×	8
Z	×	√	√	8

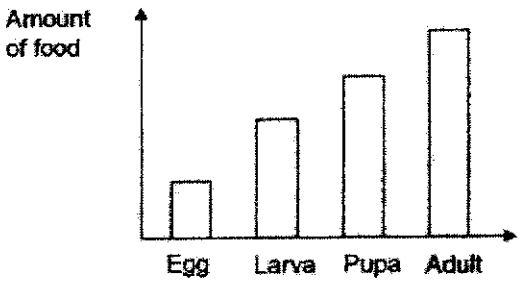
Key
√ : present
× : absent

Which seed can germinate?

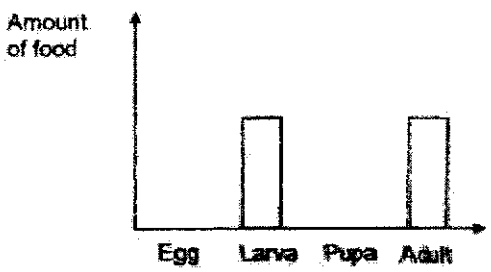
(1) W
(2) X
(3) Y
(4) Z

8. Which one of the following graphs shows the possible amount of food eaten during the life cycle of a butterfly?

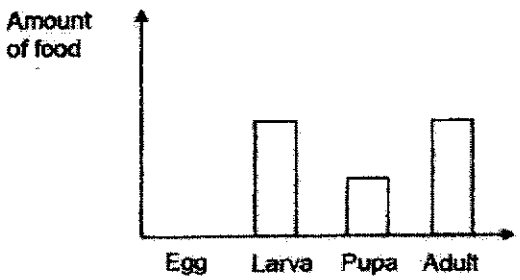
(1)



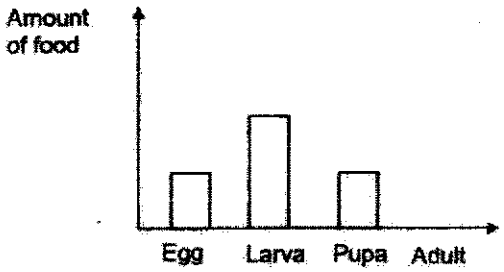
(2)



(3)



(4)



9. The pictures below show a beetle and a mosquito. How are their life cycles similar?

beetle

mosquito

A: Their young will moult a few times.
B: They lay eggs in the water.
C: Their young are called nymphs.
D: They have four stages in their life cycles.

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

10. The table below shows the characteristics of the life cycles of four different animals, M, N, O and P. A tick (✓) indicates that the animal has that characteristic.

Characteristics	Animals			
	M	N	O	P
It moults during one stage of its life cycle.	✓			✓
It has a three-stage life cycle.		✓	✓	✓
The young does not look like the adult.	✓	✓		

Which animal most likely represents a grasshopper?

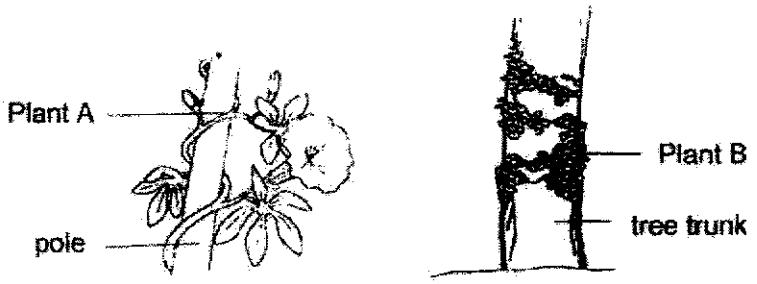
(1) M
(2) N
(3) O
(4) P

11. Which of the following parts of the digestive system produce digestive juices?

A: mouth
B: gullet
C: stomach
D: small intestine
E: large intestine

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

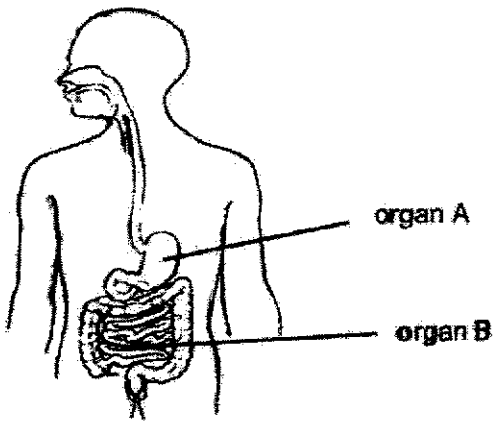
12. The diagrams below shows two plants, A and B, growing in the school garden.



Which of the following statements about both plants is incorrect?

(1) They have weak stems.
(2) They depend on a support to grow.
(3) They grow upwards to take in sunlight.
(4) They grow upwards to take in more air.

13. The diagram below shows a human digestive system.

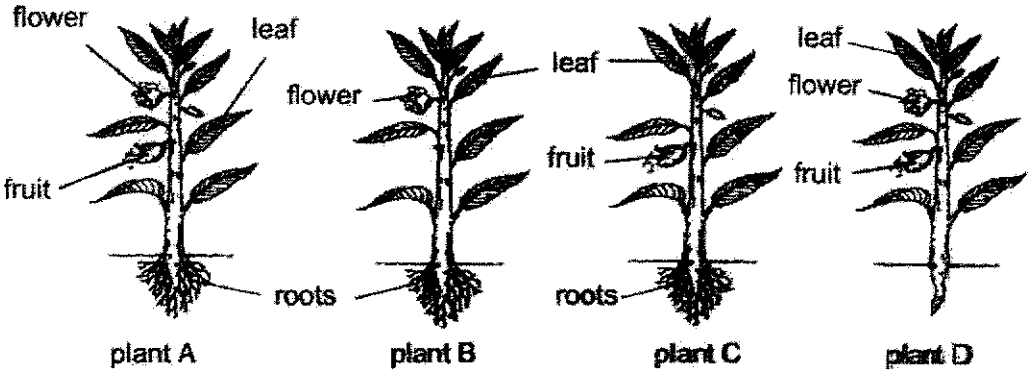


Which of the following statements are correct about organs A and B?

A: Digestion begins at organ A.
B: Digestion is completed at organ B.
C: Water is absorbed from undigested food in organ A.
D: Digested food is absorbed through the walls of organ B.

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

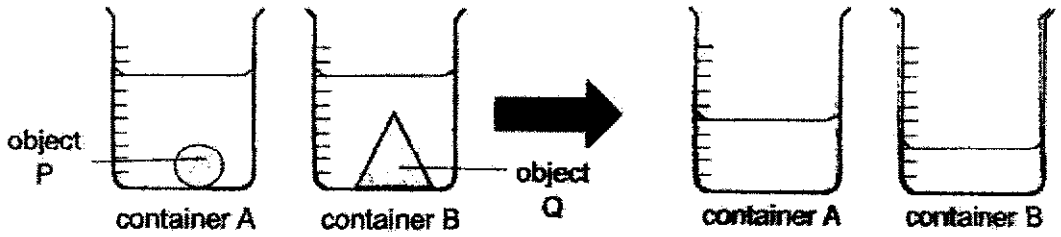
14. The diagram below shows four similar plants, A, B, C and D. Some plant parts are removed from plants B, C and D.



Which plant is least likely to survive after one week?

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

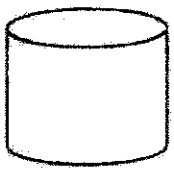
15. Han Ye placed two objects, P and Q, into two identical containers, A and B, respectively. He poured water into the containers until they reached the same water level as shown below. Next, he removed the two objects from the containers and recorded the volume of water left in each container.



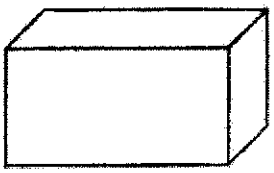
The experiment above shows that _____.

(1) Object P has a greater volume than object Q
(2) Object Q has a greater volume than object P
(3) Both objects P and Q do not have a definite shape
(4) Both objects P and Q occupy the same amount of space

16. Sheila wanted to find a container that can hold 500cm³ of air and 100cm³ of water. Her teacher gave her three different containers as shown below.



Container A
Capacity: 580cm³



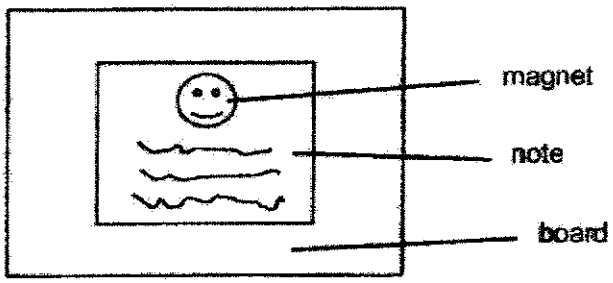
Container B
Capacity: 800cm³

Container C
Capacity: 100cm³

Which container(s) can Sheila use to hold all the air and water?

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

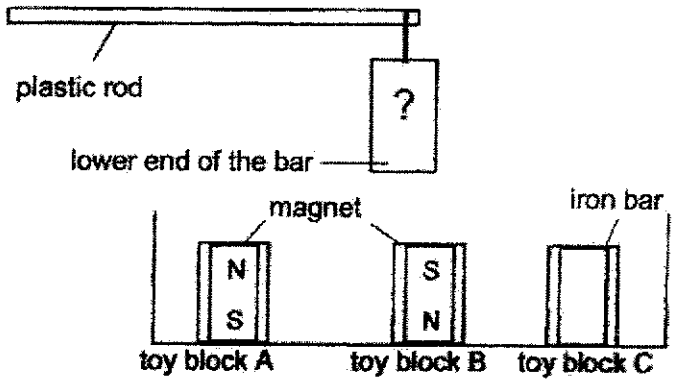
17. Jordan left a note on a board using a magnet.



Which of the following materials is the board made of?

(1) paper cardboard
(2) aluminium
(3) plastic
(4) steel

18. Lee Min made a game using the objects shown below.



The lower end of the bar was used for attracting the toy block and could only attract toy block A and C only.

Which of the following represents the bar?

(1)

iron bar

(2)

wooden bar

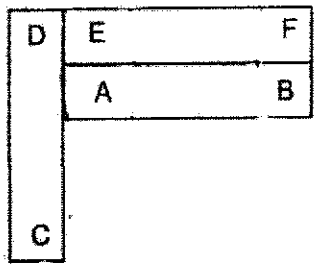
(3)

(4)

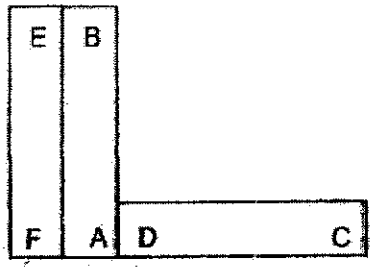
19. Three bar magnets AB, CD and EF can be arranged as shown below.

Which of the following arrangements of the magnets is not possible?

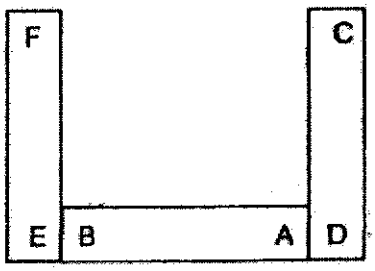
(1)



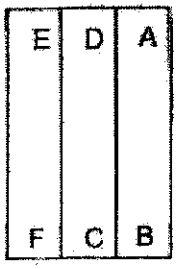
(2)



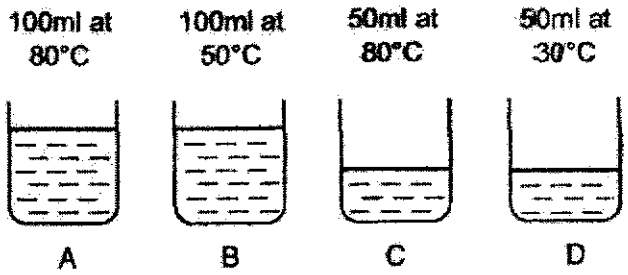
(3)



(4)



20. Jia Hui prepared 4 identical beakers, A, B, C and D, with different volumes of water at different temperatures as shown below.



Which beaker of water has the greatest amount of heat?

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

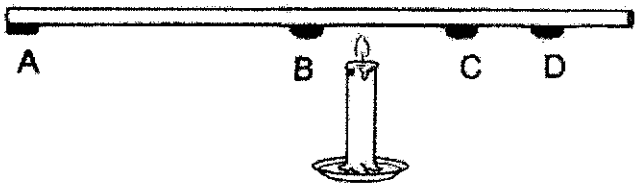
21. Ahmad noted the following processes happening around him at home.

A: Water in the kettle starts to boil.
B: A cup of hot tea becomes cooler when left on the table.
C: Ice cream melts into liquid when placed under the hot sun.
D: Water freezes into ice cubes when placed into the freezer.

Which of the processes above show heat gain?

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

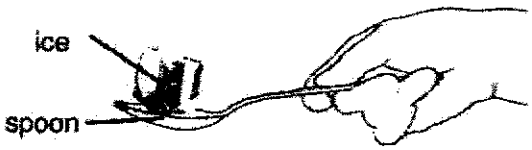
22. The diagram below shows four identical blobs of wax stuck on a rod. The rod is then heated by a candle in the position as shown below.



In which order will the blob of wax melt?

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

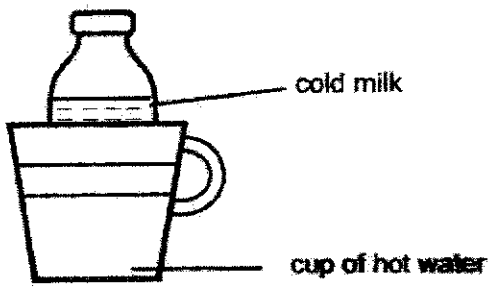
23. Chloe was holding a metal spoon with a cube of ice as shown below. After some time, she felt that the spoon was cold.



Which one of the following correctly explains why Chloe felt that the spoon was cold?

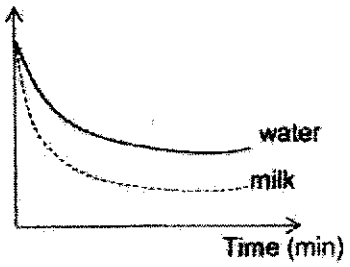
(1) Her hands gained heat from the spoon.
(2) Her hands lost heat to the spoon.
(3) The spoon lost heat to her hands.
(4) The spoon gained heat from the ice.

24. Sarah wanted to warm up some cold milk in a bottle. She put the bottle into a cup of hot water.

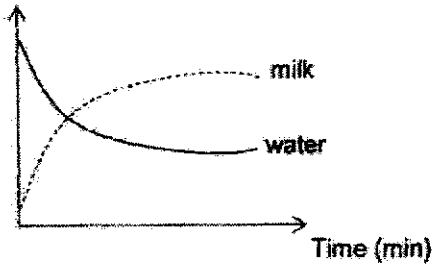


Which of the following graphs correctly shows the change in temperatures of the milk and water over 20 minutes?

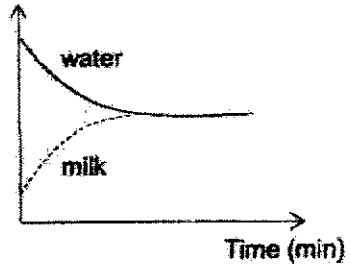
(1) Temperature (°C)



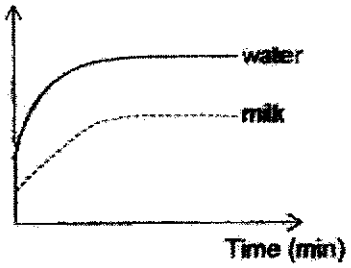
(2) Temperature (°C)



(3) Temperature (°C)



(4) Temperature (°C)



End of Booklet A

RED SWASTIKA SCHOOL

SCIENCE
2021 SEMESTRAL EXAMINATION 1
PRIMARY 4

Name : _____ ( )

Class : Primary 4/ _____

Date : 18 May 2021

BOOKLET B

10 Questions
32 Marks

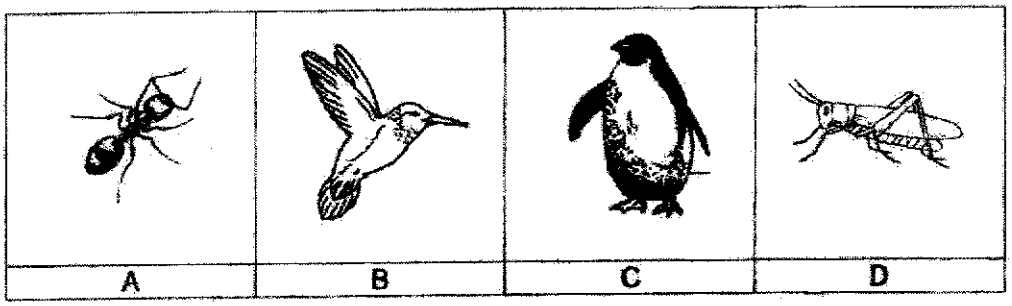
In this booklet, you should have the following:
a. Page 13 to Page 22
b. Questions 25 to 34

	MARKS OBTAINED	POSSIBLE
BOOKLET A		48
BOOKLET B		32
TOTAL		80

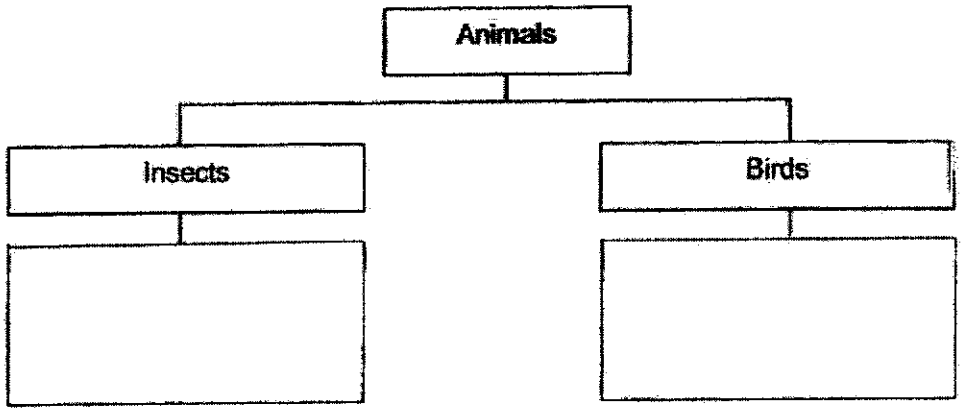
Parent's Signature: _____

Answer all questions in the space provided.

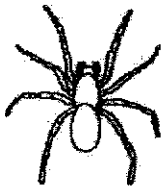
25. Kai Xin wanted to classify the animals below into two groups.



(a) **Place the animals, A, B, C and D into the correct group. (2m)**



Kai Xin saw animal E below.



Animal E

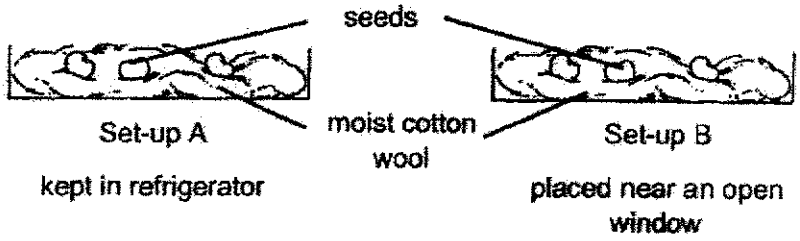
(b) Give two reasons why Kai Xin cannot classify Animal E into the 'Insects' group. (2m)

_____

_____

4

26. Jamal wanted to find out if water is needed for the germination of seeds. He prepared two set-ups, A and B, as shown below. After some time, he observed that only the seeds in set-up B germinated.



(a) The seeds in set-up A did not germinate. Why was this so? (1m)

_____

_____

(b) Jamal's teacher commented that the experiment was set up wrongly.

Suggest two changes that Jamal should make to set-up A in order to carry out his experiment correctly. (2m)

First change: _____

_____

Second change: _____

_____

3

27. A group of scientists kept the same number of organism A at different temperatures to observe the time taken for each stage of their life cycle to complete. They recorded their results in the table below.

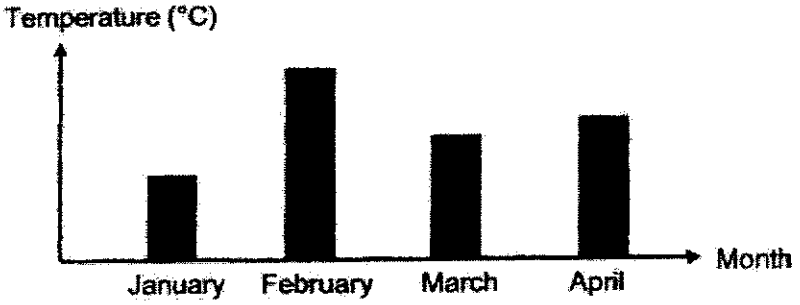
Temperature of surroundings	Average total number of days for an egg to develop into an adult
20°C	15
24°C	13
28°C	7
32°C	6

(a) What is the relationship between the temperature of the surroundings and the total number of days taken for organism A to become an adult? (1m)

_____

_____

The graph below shows the average monthly temperature in Singapore in 2020.



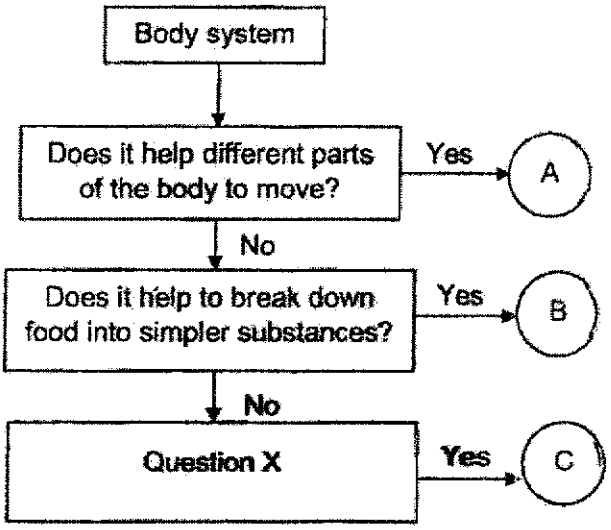
(b) Based on the graph above, February is likely to have the highest number of organism A. Explain why. (2m)

_____

_____

3

28. Study the flow chart below.



(a) Based on the flow chart above, what could systems A and B be? (2m)

System A: _____

System B: _____

(b) System C is the circulatory system. Based on this information, which question below is most likely to be question X? Put a tick (✓) in the box. (1m)

Question	Tick (✓) the correct box
Does it help to carry waste materials away from different parts of the body?	
Does it help to protect the organs in the body?	

3

29. The diagram below shows two trees with different types of roots.

tree X tree Y

(a) Which tree, X or Y, will not get pulled out of the ground easily during heavy rain? Explain why. (2m)

_____

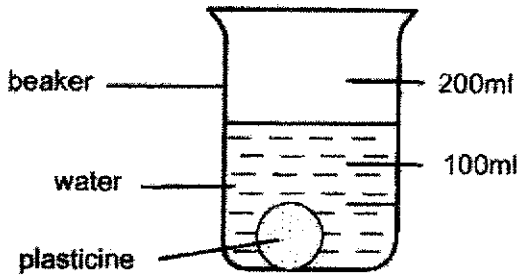
_____

(b) Other than the reason given in (a), state another function of the roots. (1m)

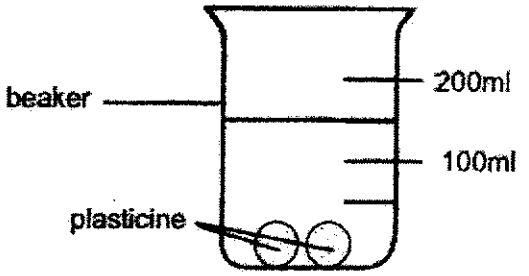
_____

3

30. Siti placed a ball of plasticine and 100ml of water into the beaker shown below.



She took out only the plasticine and cut it into two smaller pieces. She then placed the plasticine back into the beaker containing water.



(a) Using a ruler, draw the water level in the beaker above. (1m)

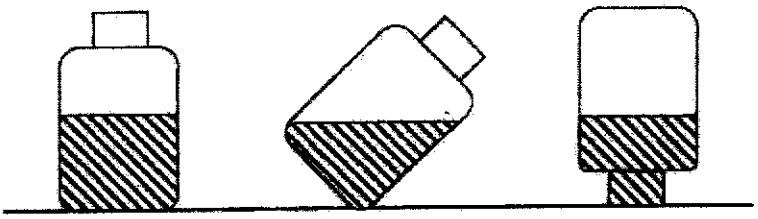
(b) Which property of solids did you use for your answer in part (a)? (1m)

_____

_____

2

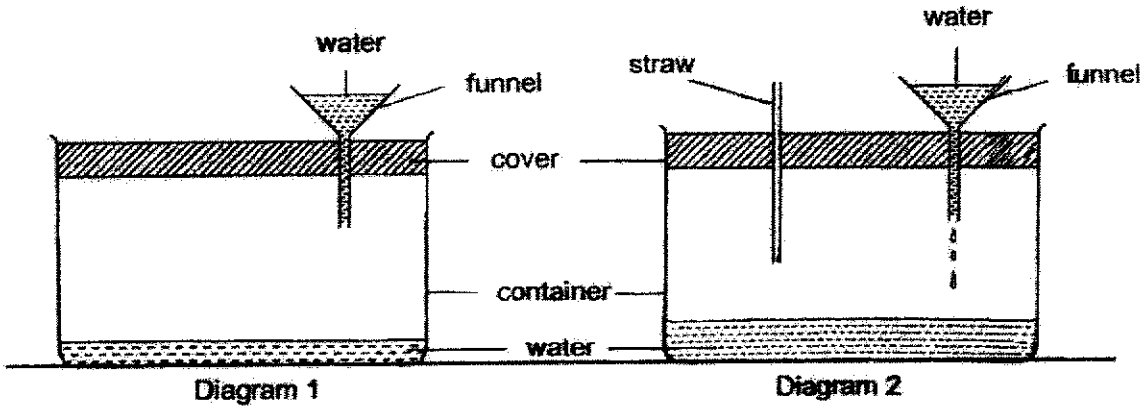
31. Kieran poured some water into a container and tilted it in different ways as shown below.



(a) Which property of liquid can be seen from the above experiment? (1m)

_____

Kieran poured water into the funnel and noticed that the water stopped flowing as shown in Diagram 1. His teacher inserted a straw into the cover of the container and Kieran noticed that the water in the funnel was able to flow into the container as shown in Diagram 2.



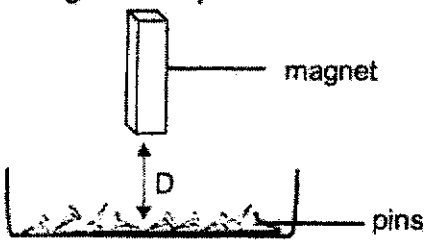
(b) Explain why water was able to flow into the container as shown in Diagram 2. (2m)

_____

_____

3

32. Megan wanted to investigate how the distance, D, affects the number of pins attracted by a magnet using the set-up below.



Her results are shown below.

D (cm)	Number of pins attracted to the magnet
4	3
3	?
2	6
1	7

(a) What is a possible number of pins that will be attracted when the magnet is 3cm away from the tray of pins? (1m)

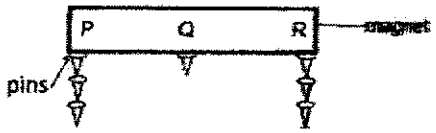
_____

(b) What is the relationship between the distance of the magnet from the tray of pins and the magnetic strength of the magnet? (1m)

_____

_____

Megan placed the magnet horizontally into the tray of pins. She lifted the magnet and observed the number of pins attracted to the magnet.



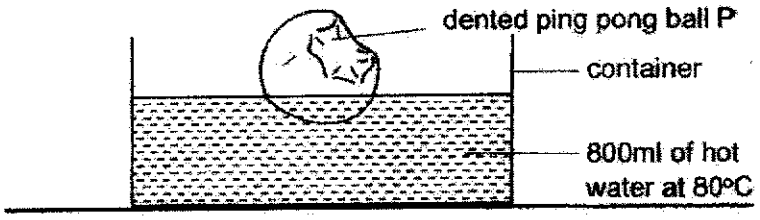
(c) Explain why more pins were attracted at Parts P and R than at Q. (2m)

_____

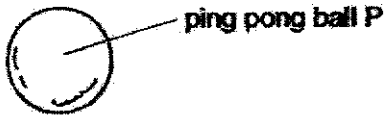
_____

4

33. Kai En had two similar dented ping pong balls, P and Q. She learnt from her Science lesson that there was air in a ping pong ball. She placed the dented ping pong ball P in a container as shown below.



Kai En observed that the ball returned to its original shape after 20 minutes as shown in the diagram below.

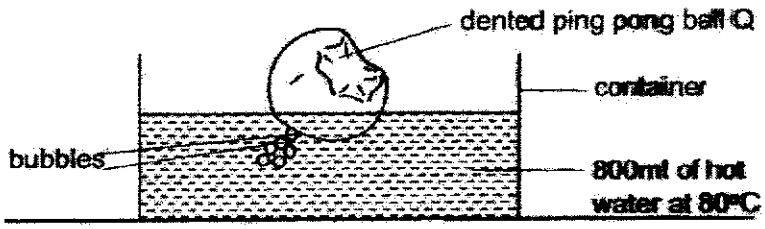


(a) Explain how the dented ping pong ball P returned to its original shape. (1m)

_____

_____

Kai En then placed the dented ping pong ball Q in a container as shown below.



This time, Kai En observed some bubbles coming out from one part of the dented ping pong ball. The ball took 40 minutes to return to its original shape.

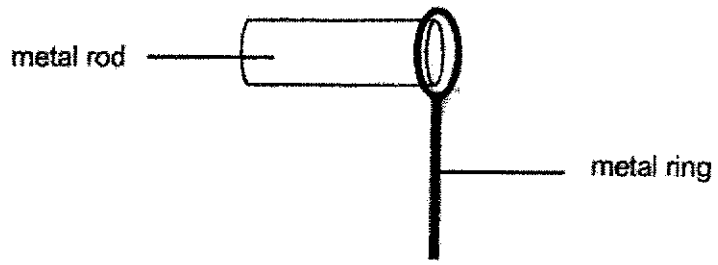
(b) Explain why the dented ping pong ball Q took a longer time to return to its original shape. (2m)

_____

_____

3

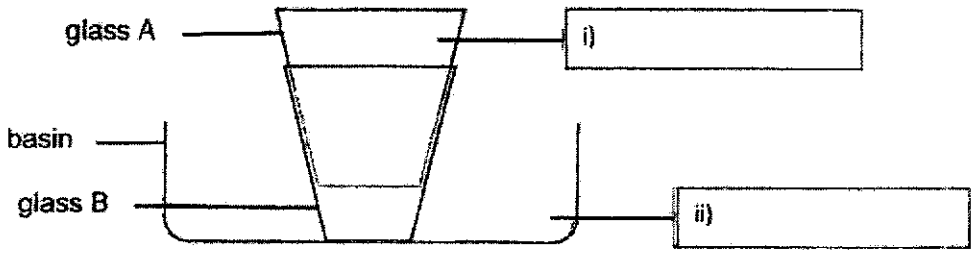
34. Carol had a metal rod that was able to pass through the metal ring as shown below.



(a) After heating the metal rod for 10 minutes, Carol noticed that the metal rod was unable to pass through the metal ring. Explain why. (1m)

_____

Carol had two glasses, A and B, that were stuck together. She tried pulling them apart but was unsuccessful. Her mother put both glasses into a basin and gave Carol some ice cubes and a beaker of hot water.



(b) Label the boxes above with 'hot water' or 'ice cubes' to indicate where Carol should place the two items to separate glasses A and B. (1m)

(c) Based on the answers in (b), explain how the two glasses were separated. (2m)

_____

_____

End of Booklet B
Please check your answers.

4

SCHOOL : RED SWATIKA SCHOOL
LEVEL : PRIMARY 4
SUBJECT : SCIENCE
TERM : SA 1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
4	1	2	1	3	3	1	2	33	4
Q11	**Q12**	**Q13**	**Q14**	**Q15**	**Q16**	**Q17**	**Q18**	**Q19**	**Q20**
2	4	3	4	2	3	4	4	1	1
Q21	**Q22**	**Q23**	**Q24**						
2	3	2	3						

Q25

a)

Insects	Birds
A D	D C

b) Animal E does not have 6 legs and does not have 3 body parts like an insect.

Q26

a) There is no warmth in set-up A

b) 1. Remove the moisture
2. Place the setup near an open window as setup B

Q27

a) The higher the temperature of the surroundings, the fewer the number of days taken for organism A to become an adult.

b) It is the hottest month and organism A will take the least number of days to become an adult.

Q28

a) System A: Muscular system
System B: Digestive System

b)

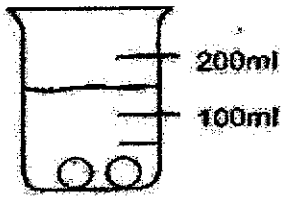
Does it help to carry waste materials away from different parts of the body.	✓
Does it help to protect the organs in the body?	

c)

Q29

a) Tree Y. The roots are longer into the soil and can anchor the tree more firmly to the ground.

b) The roots help the plant to absorb water from the ground.

Q30	 a) b) Solid have a definite volume
Q31	a) Liquids do not have a definite shape b) Air scaped fro mthe straw and allowed water to enter to occupy the space previously occupied by the air.
Q32	a) 4 or 5 b) As the disance of the magnet from the magnet and magnetism is the greatest at the poles c) P and R were the poles of the magnet and magnetism is the greatest at the poles.
Q33	a) The air in the ping pong ball gained heat from the hot water and expanded b) Ping Pong Q had holes where air could scapes. Thus, there was less air in ball Q to gain heat and expand.
Q34	a) The metal rod gained heat and expanded b) i) Ice cubes ii) hot water c) Ice cubes will cause glass A to lose heat to the ice and contract while hot water will cause glass B to gain heat from the water and expand.