

SINGAPORE CHINESE GIRLS' SCHOOL
SECOND SEMESTRAL ASSESSMENT 2014
Primary 4

NAME: _____ ()

DATE: _____

CLASS: PRIMARY 4 SY / C / G / SE / P

SCIENCE
BOOKLET A

30 questions

60 marks

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

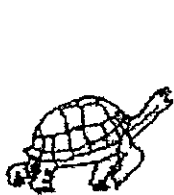
DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

FOLLOW ALL INSTRUCTIONS CAREFULLY.

Part I (30 x 2 marks)

For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. Which one of the following is a living thing?



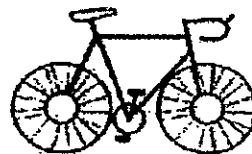
tortoise

(1)



chair

(2)



bicycle

(3)



kite

(4)

2. The leaves of a mimosa plant close up when touched.



Before



After

This shows that the mimosa plant is a living thing because it can _____.

(1) grow taller and bigger

(2) breathe in air

(3) respond to changes

(4) reproduce young

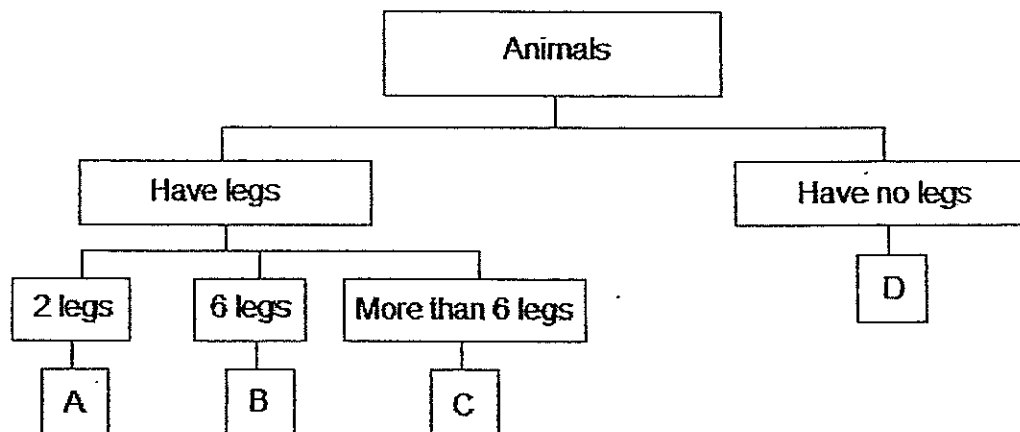
3. Some materials have been classified into 2 groups as shown below.

Group P	Group Q
Plastic	Wood
Rubber	Cloth
Steel	Paper

The above materials are classified into Group P and Q based on whether they are _____.

- (1) Flexible
- (2) Magnetic
- (3) Waterproof
- (4) Transparent

4. Study the chart below.



Where would you put this animal in the chart above?



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

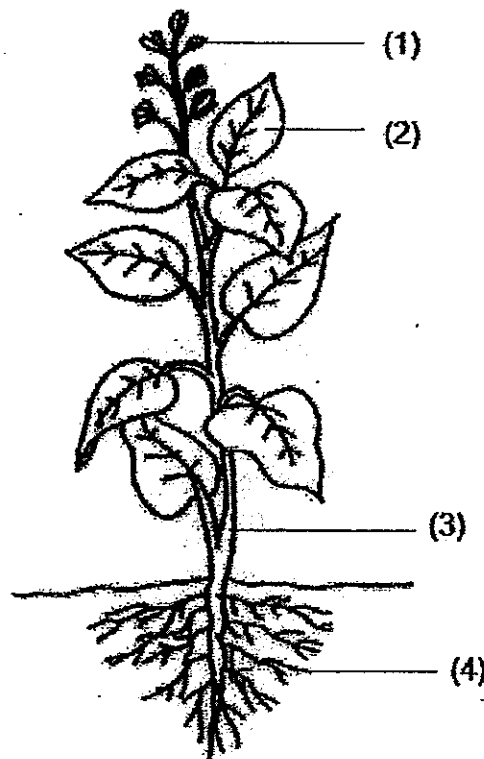
5. Amanda made some observations about 2 animals, X and Y. She drew up the table as shown below.

Characteristics \ Animals	X	Y
Legs	Yes	Yes
Wings	Yes	No
Scales	No	Yes
Feathers	Yes	No

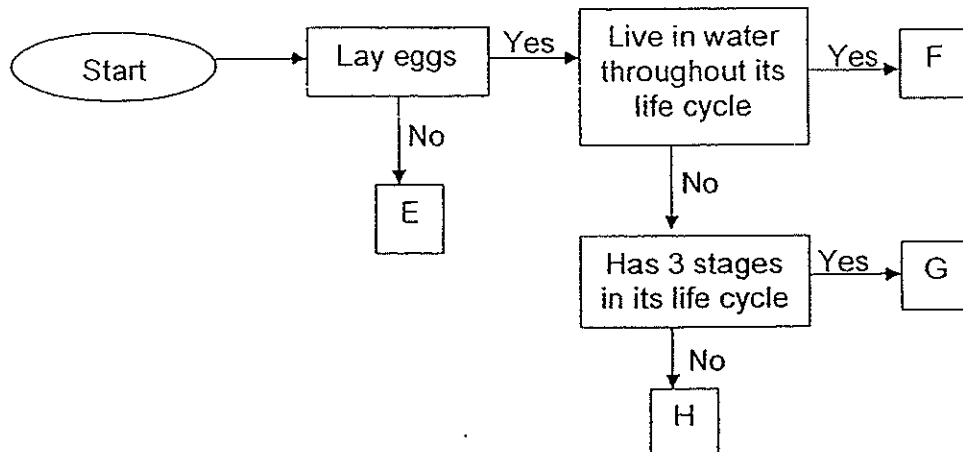
Which of the following will Amanda be able to conclude based on her observations?

- (1) Animal X is a bird
- (2) Animal X is a fish
- (3) Animal Y is a bird
- (4) Animal Y is a fish

6. Which part of the plant (1), (2), (3) or (4) is the leaf?



7. Study the flowchart below.



Based on the information given, which of the following is true?

- (1) Both animals E and F lay eggs.
- (2) Animals G and H live in water throughout their life cycle.
- (3) Animal G has a 4-stage life cycle but Animal H does not.
- (4) Animal F lives in water throughout its life cycle but animal H does not.

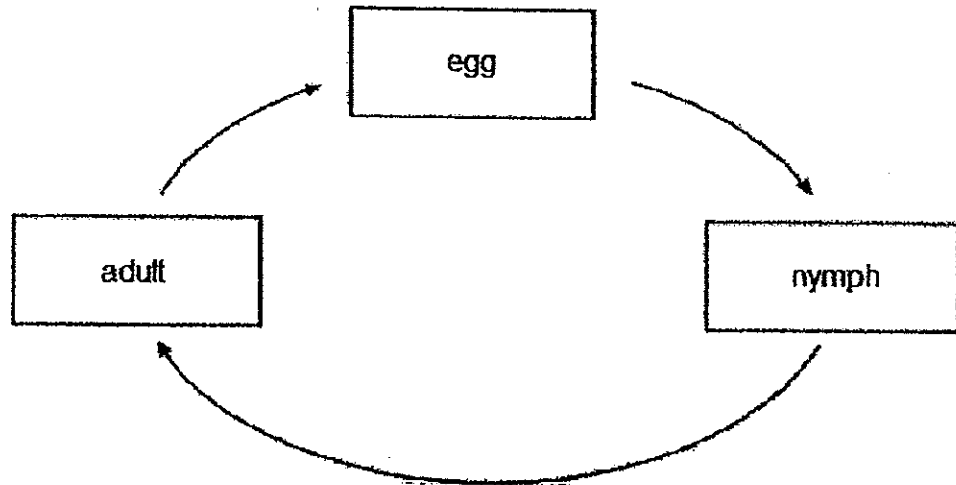
8. What is the main function of the large intestine?

- (1) It allows digested food to be passed into the blood.
- (2) It allows water to be passed into the blood.
- (3) It removes digested food from the body.
- (4) It removes undigested food out of the body.

9. Which one of the following is NOT a source of heat?

- | | |
|--------------------|--------------------|
| (1) the sun | (3) a candle flame |
| (2) a lighted bulb | (4) a wool sweater |

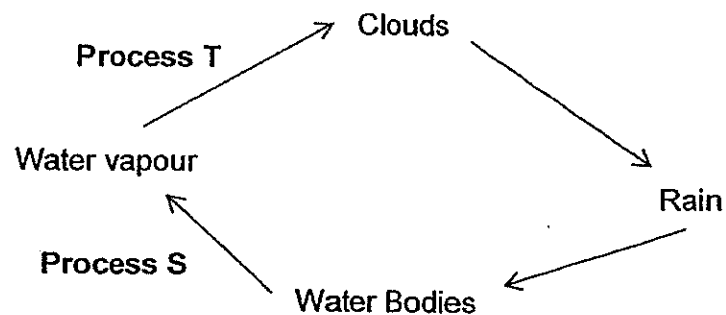
10. The diagram below shows the life cycle of an animal.



Which animal is likely to have the life cycle as shown above?

- (1) beetle
- (2) butterfly
- (3) chicken
- (4) cockroach

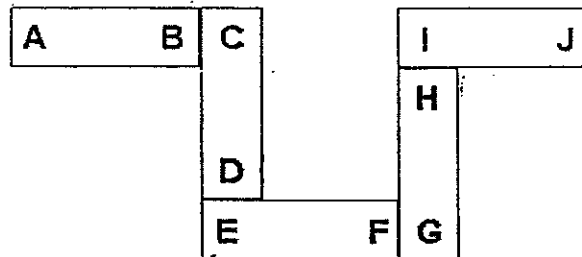
11. The diagram below shows the water cycle.



Which of the following correctly shows Process S and Process T?

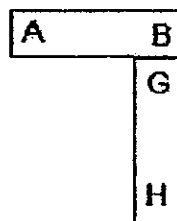
	Process S		Process T	
(1)	Condensation	Heat Loss	Evaporation	Heat Gain
(2)	Evaporation	Heat Loss	Condensation	Heat Gain
(3)	Condensation	Heat Gain	Evaporation	Heat Loss
(4)	Evaporation	Heat Gain	Condensation	Heat Loss

12. Five bar magnets with their ends marked A to J can be arranged as shown below.

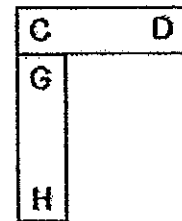


Which of the following diagrams shows a possible arrangement of two of the magnets?

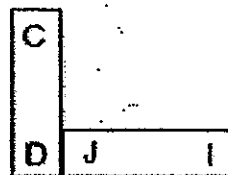
(1)



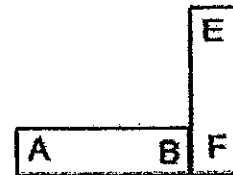
(3)



(2)



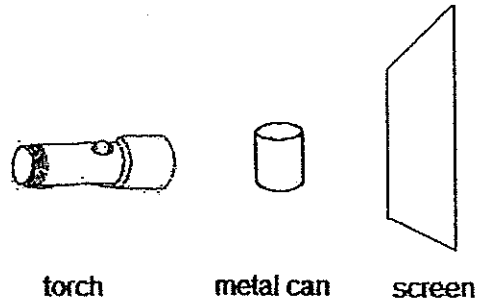
(4)



13. Which one of the following properties is true for both air and a pencil?

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

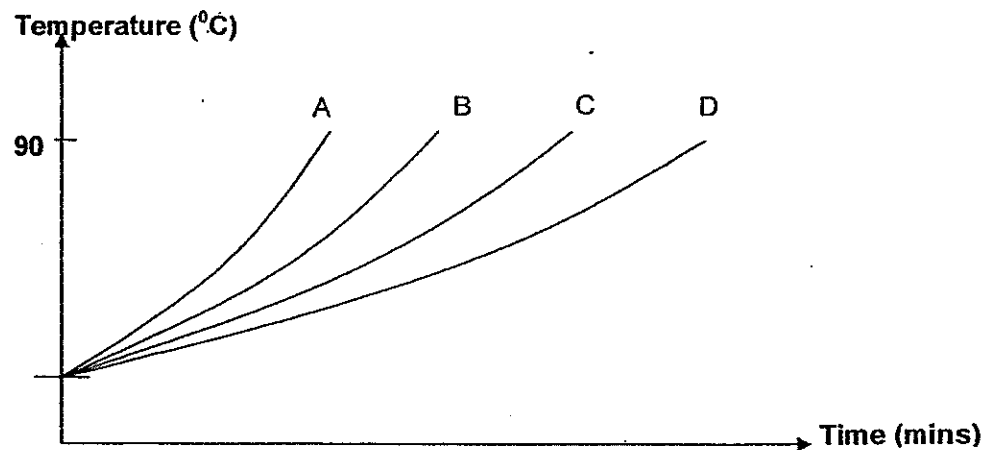
14. Pei Ling shines a torch on the metal container as shown below.



Which one of the following shows the shadow of the metal container on the screen?



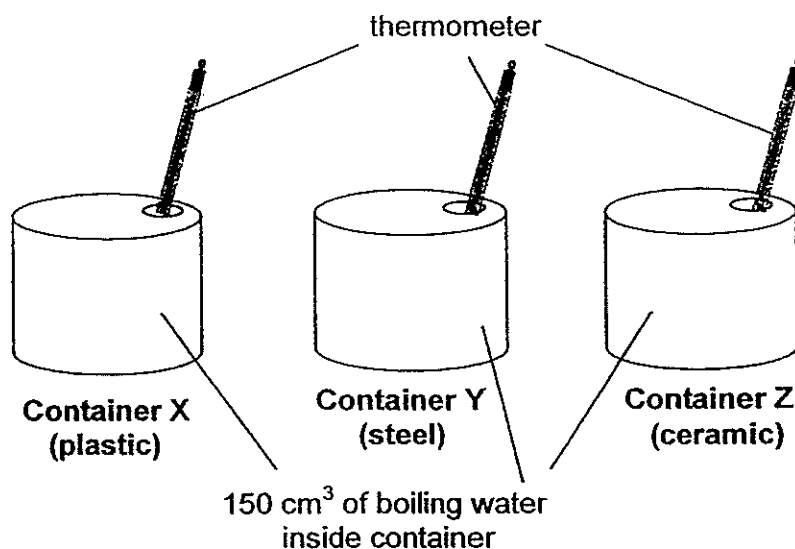
15. The graph below shows the time taken for 4 cooking pots made of different materials, A, B, C and D, to reach 90°C.



Dayna wants to make a container that can allow ice cream to stay solid for the longest time. Which one of the following materials would allow her to do so?

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

16. 150 cm^3 of boiling water is poured into 3 containers of similar shape and size, X, Y and Z. The 3 containers are then tightly sealed and left on a table.



Which of the following tables correctly shows the time taken for the water in each container to cool to room temperature of 28°C ?

(1)

Container	Time taken to cool to room temperature (min)
X	30
Y	45
Z	20

(3)

Container	Time taken to cool to room temperature (min)
X	20
Y	30
Z	45

(2)

Container	Time taken to cool to room temperature (min)
X	45
Y	20
Z	30

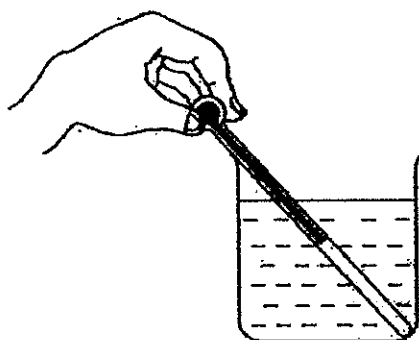
(4)

Container	Time taken to cool to room temperature (min)
X	20
Y	45
Z	30

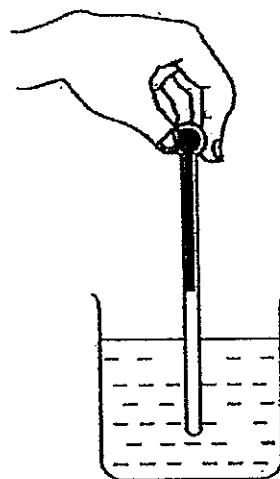
17. Catherine wants to measure the temperature of hot water in a beaker.

Which one of the following diagrams shows the correct position of the thermometer when taking the temperature reading?

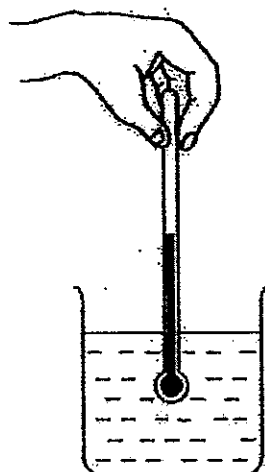
(1)



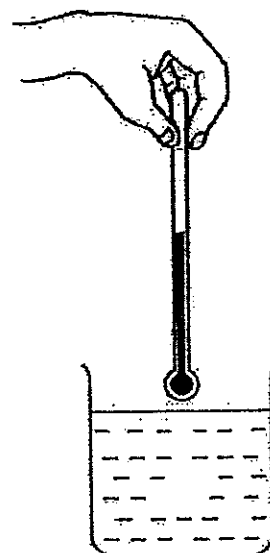
(3)



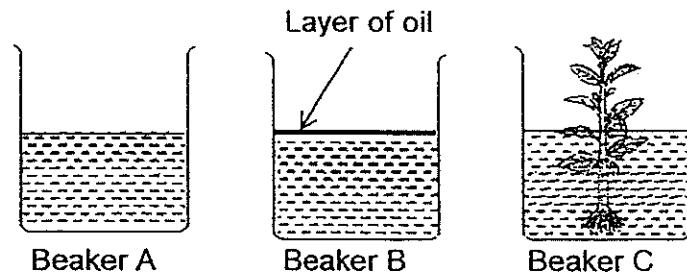
(2)



(4)



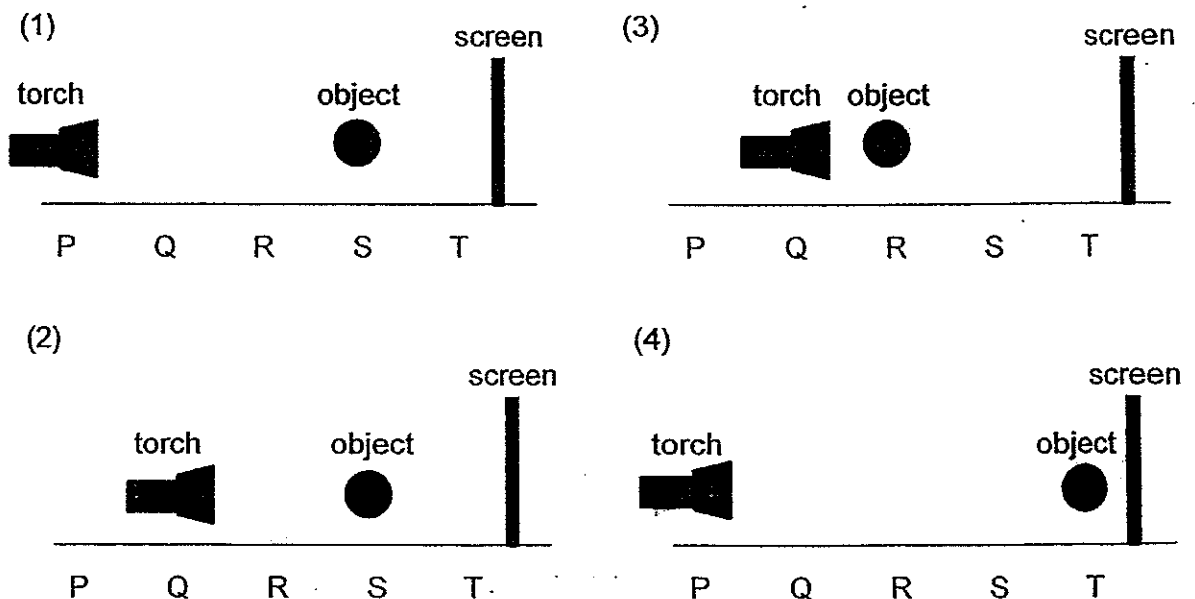
18. Amy carried out an experiment to find out which beaker would have the least amount of water after 1 week. She placed the 3 beakers as shown below on the table.



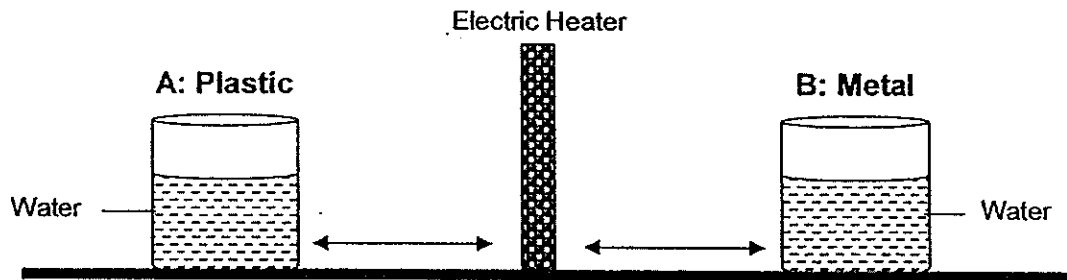
Given that all 3 beakers had the same amount of water at the start of the experiment, which of the following correctly shows the amount of water, from the least to the most, in the beakers at the end of 1 week?

	Least water	→	Most water
(1)	B , A , C		
(2)	C , A , B		
(3)	A , B , C		
(4)	B , C , A		

19. Kimberly wanted to find out how the position of a torch and an object can affect the size of the shadow formed. Which of the following set-ups will result in the largest shadow on the screen?

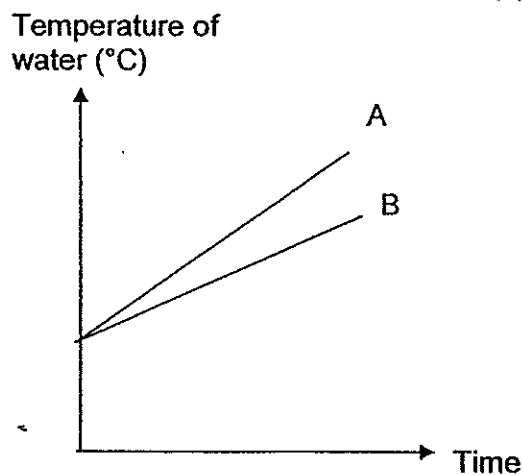


20. Jessica set up an experiment with two containers of water at room temperature, A and B. The containers are made of plastic and metal respectively and were of the same size and thickness. She placed them at equal distance from an electric heater over a period of time as shown below.

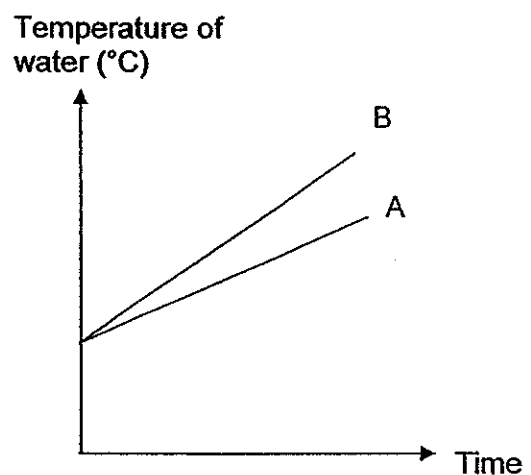


Which of the following correctly shows the increase in temperature of water over time?

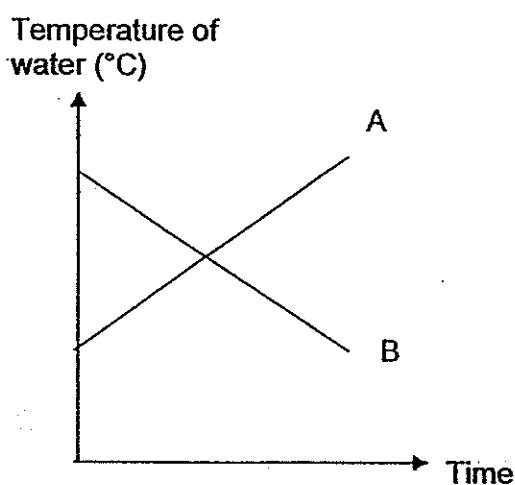
(1)



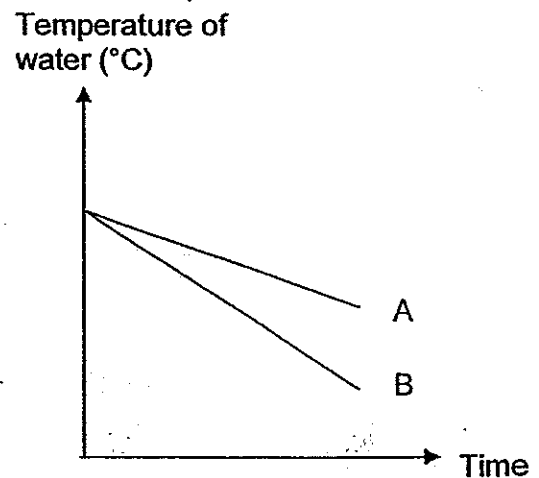
(3)



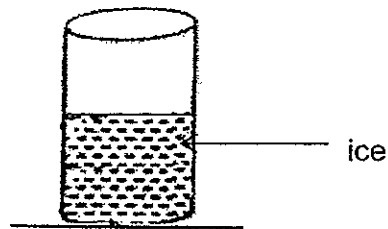
(2)



(4)

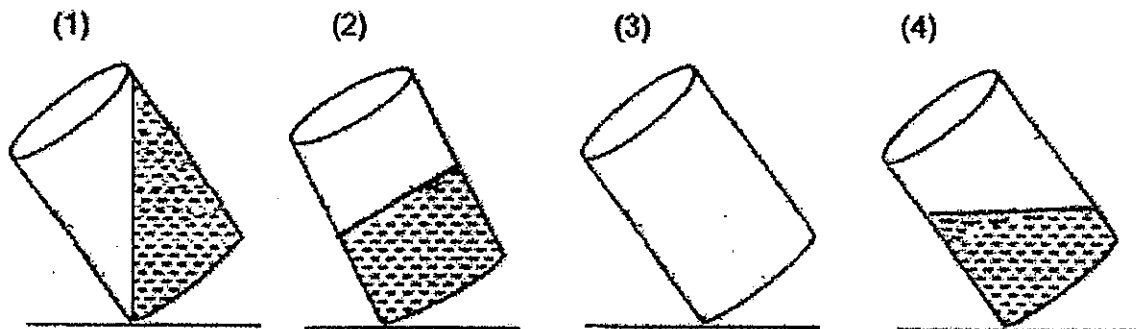


21. Becky placed a beaker of water in the freezer and took it out 3 hours later. The diagram below shows the beaker when she removed it from the freezer.

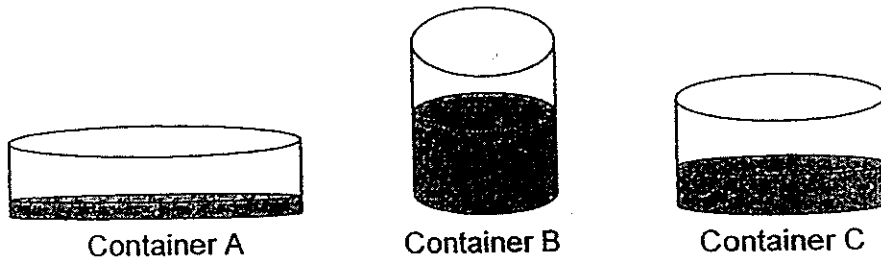


She left the beaker on the table top. 2 hours later, she returned and tilted the beaker.

Which of the following shows the beaker when it is tilted?

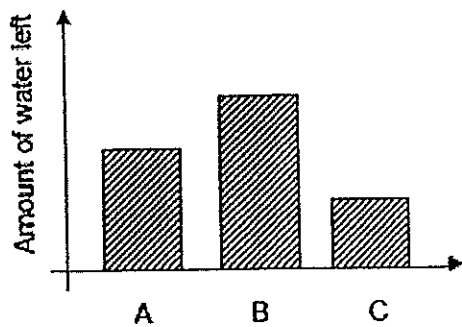


22. The same amount of water was poured into 3 different containers. The containers were then left in the classroom and placed in front of a moving fan.

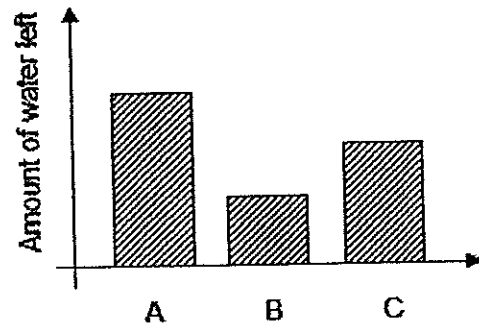


Which of the graphs below correctly shows the amount of water left in the 3 containers at the end of the day?

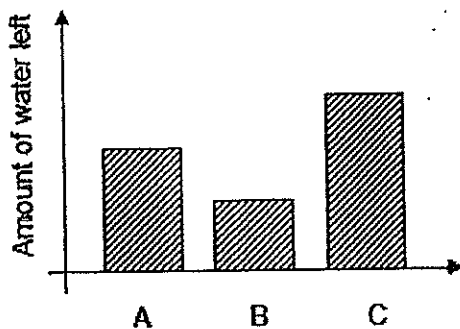
(1)



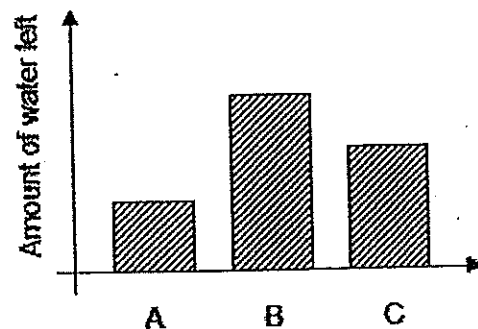
(3)



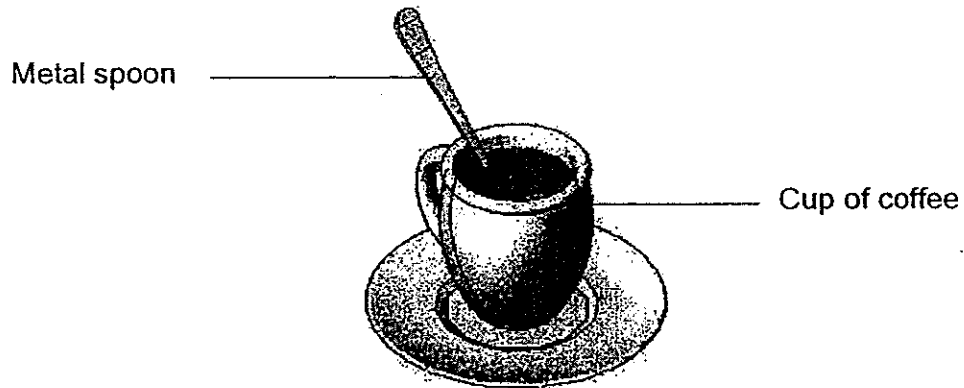
(2)



(4)

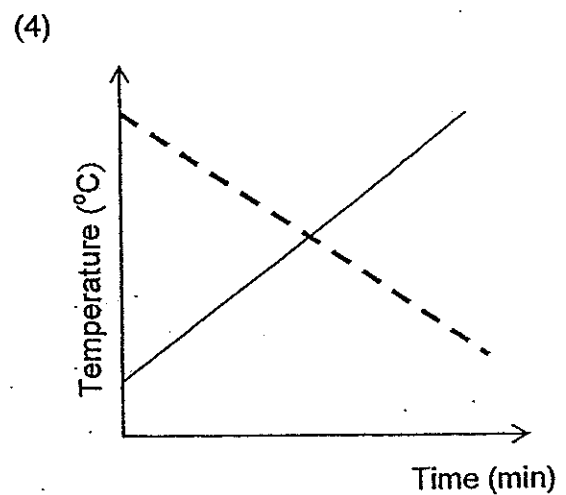
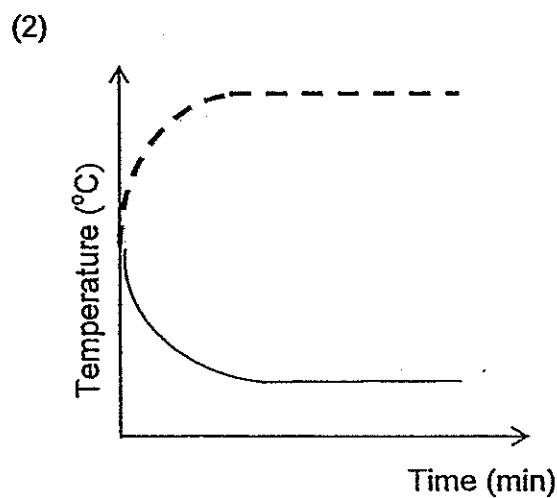
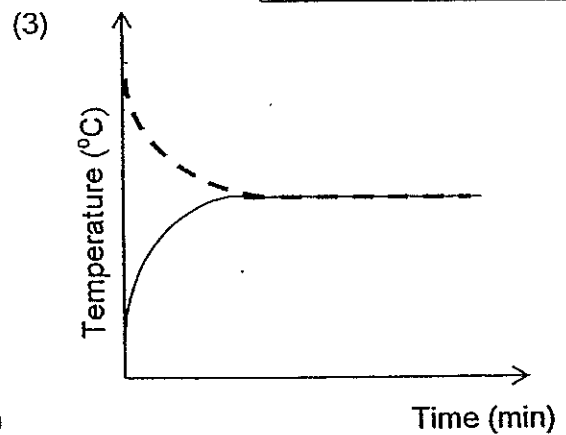
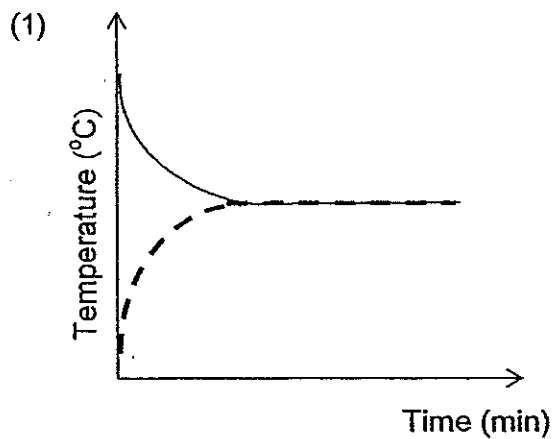


23. A metal spoon was placed in a cup of hot coffee as shown in the diagram below.

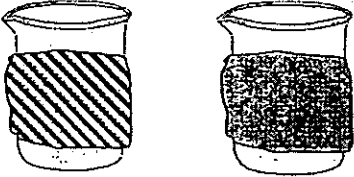
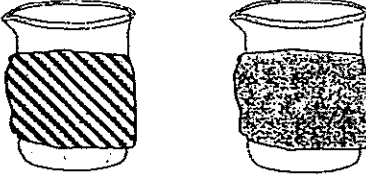
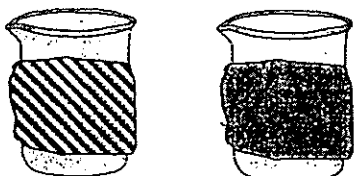
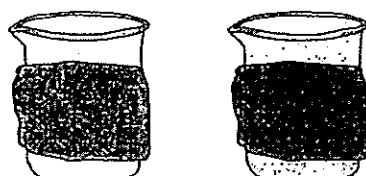


Which of the following graphs correctly shows the temperature change of the coffee and the spoon over 30 minutes?

Key:	
—————	Coffee
-----	Spoon



24. Hashim wanted to find out which material, A or B, would allow cold water in a beaker to gain heat the fastest. Given that the materials used were of the same thickness and the temperature of the water in the beakers was the same at the start of the experiment, which of the following set-ups should he choose?

(1)  Glass beaker 100ml water Material A Plastic beaker 100ml water Material B	(3)  Glass beaker 50ml water Material A Glass beaker 50ml water Material B
(2)  Glass beaker 50ml water Material A Glass beaker 100 ml water Material B	(4)  Glass beaker 50ml water Material B Plastic beaker 50ml water Material B

25. Rani kept guppies in 2 tanks X and Y under different conditions. The table below shows the conditions that the guppies were kept in.

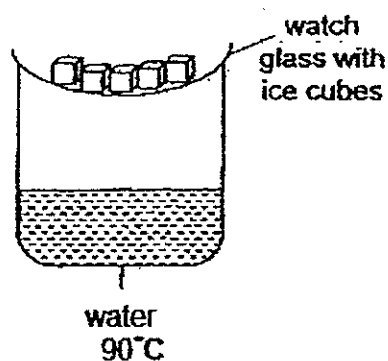
Tank	Amount of water	Amount of food	Number of guppies	Number of air pumps
A	3 litres	10g a day	5	4
B	3 litres	10g a day	5	0

After 1 week, Rani found that guppies in Tank A were swimming at the bottom of the tank while guppies in Tank B were swimming near the water surface. What could be the reason for the above difference in her observation?

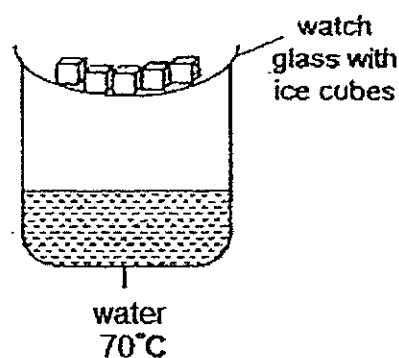
- (1) There was not enough food in Tank B.
- (2) There was not enough dissolved air in Tank B.
- (3) The water plants provided shelter for the guppies in Tank A.
- (4) There were no water plants for the guppies to hide in in Tank B.

26. On which watch glass will most water droplets appear after 2 minutes?

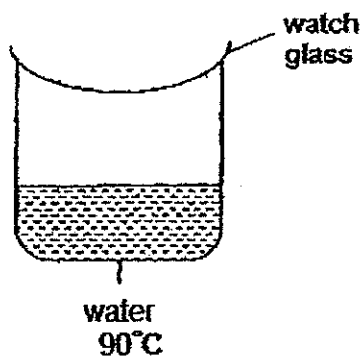
(1)



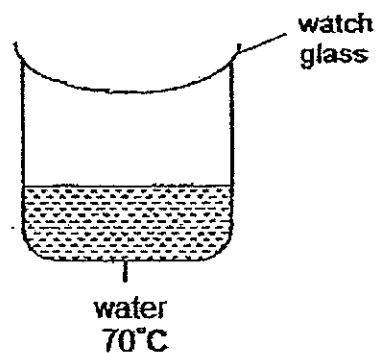
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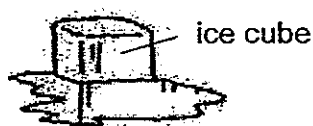
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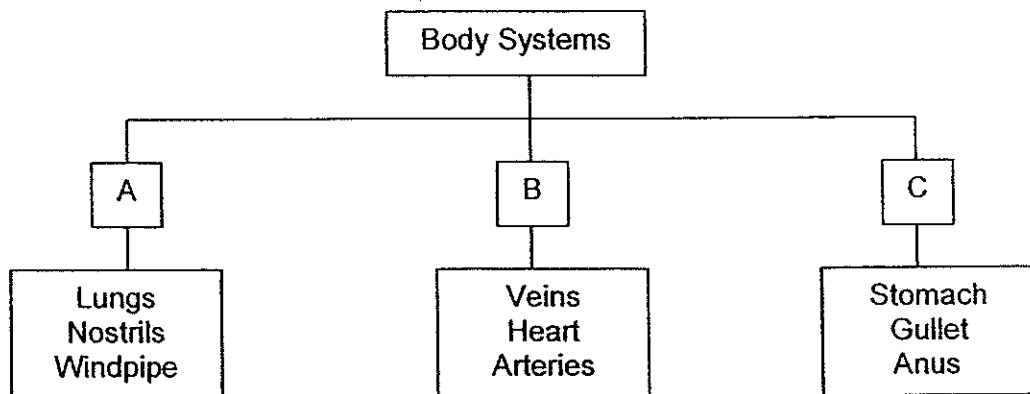
27. Mary placed an ice cube on a table and 5 minutes later she found a pool of water in the place of the ice cube. 3 hours later, she found that the table was dry even though it had not been wiped.



During the experiment, water existed as a _____.

- (1) liquid only
- (2) solid and gas only
- (3) solid and liquid only
- (4) gas, liquid and solid

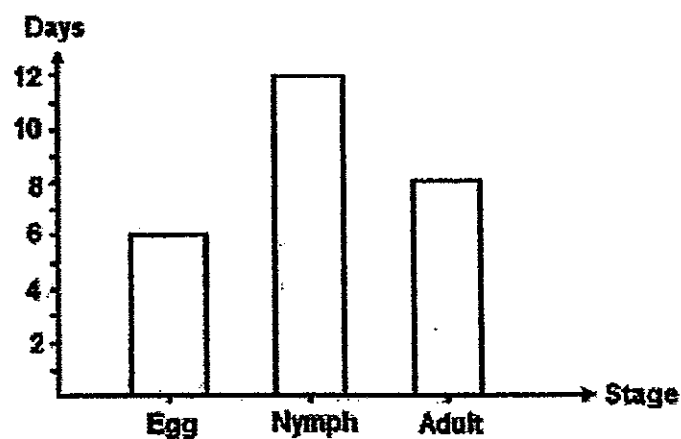
28. The classification chart below shows some body systems.



Which of the following correctly shows what systems A, B and C are?

	A	B	C
(1)	Circulatory	Respiratory	Digestive
(2)	Digestive	Respiratory	Circulatory
(3)	Circulatory	Digestive	Respiratory
(4)	Respiratory	Circulatory	Digestive

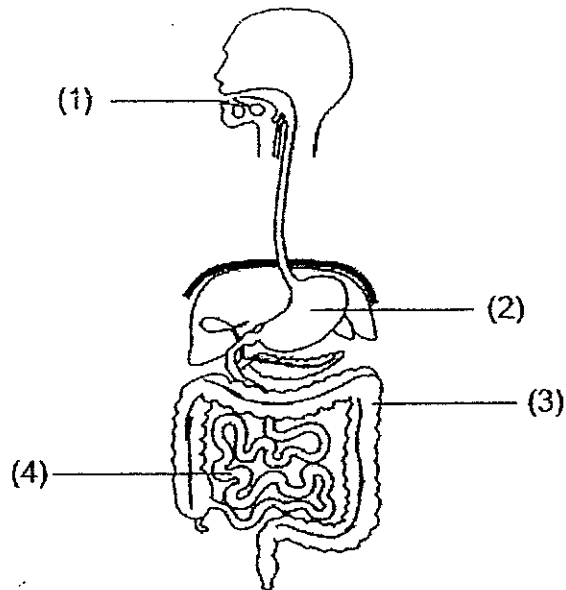
29. The graph below shows the length of each stage in the life cycle of an insect.



How many days would it take for the insect to become an adult after the egg is laid?

- (1) 6 days
 (2) 12 days
 (3) 18 days
 (4) 26 days

30. In which part of the digestive system is digested food absorbed into the bloodstream?



Student No. : 8 CHOO SU JIN						SUBJECT			TEST		SCORE		SCORE(%)	
Primary 4-C (2014)						Science			SA2		56 / 60		93.33	
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
1	3	3	3	1	2	4	2	4	4	4	1	4	3	4
Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	2	2	3	3	2 (4) X	4	1	3	2	1	4	4	2 (3) X	4
Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q40	Q41	Q42	Q43	Q44	Q45
Q46	Q47	Q48	Q49	Q50	Q51	Q52	Q53	Q54	Q55	Q56	Q57	Q58	Q59	Q60

INDEX NUMBER	0	1	2	3	4	5	6	7	8	9
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	0	1	2	3	4	5	6	7	8	9
	0	1	2	3	4	5	6	7	8	9
	A	B	C	D	E	F	G	H	I	J

EXAMPLE: IF YOU THINK
THE 2ND OPTION IS THE
CORRECT ANSWER SHADE
THE OVAL 2 LIKE THIS:

1	2	3	4
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1	2	3	4
1	2	3	4

Name: _____ ()

Date: _____

Class: Primary 4 SY / C / G / SE / P

Components	Marks Obtained	Total Possible Marks
Booklet A		60
Booklet B		40
Total		100

Parent's Signature:

Booklet B (40 marks)

Answer all the following questions.

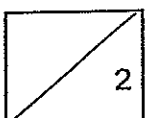
31. Choose the correct words from the box to answer the questions below.

gullet large intestine mouth small intestine stomach

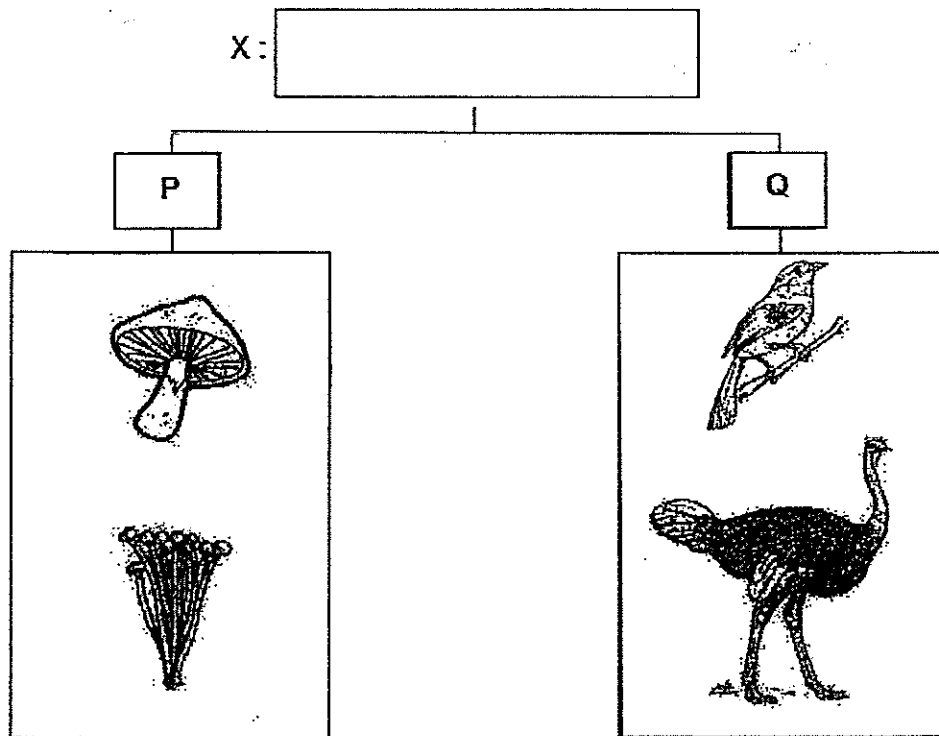
In the human digestive system, name the part where

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

b) digestion is completed : _____ (1m)



32. The classification chart below shows how some organisms can be grouped.



- a) In the diagram above, give the classification chart a suitable heading by filling in box X. (1m)
- b) Tick () the similar characteristics between Group P and Q. (2m)

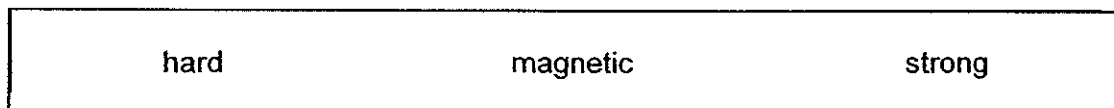
	Characteristic	Similar?
i)	Needs food to stay alive	
ii)	Able to reproduce	
iii)	Needs to take in air to survive	
iv)	Able to move from place to place on its own	

33.



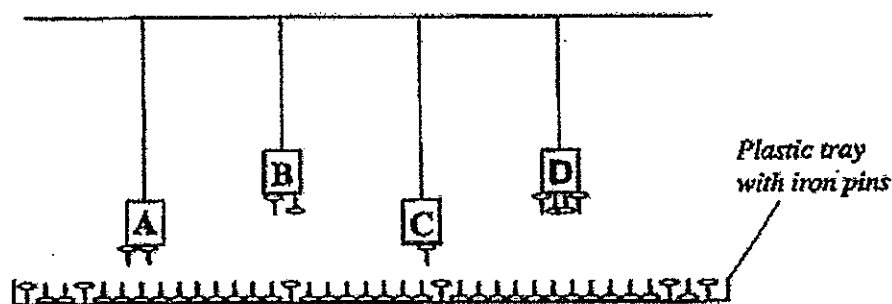
Susan places a magnet near an iron rod. The iron rod moves towards the magnet.

- a) Magnet exerts a _____ on the iron rod. (1m)
- b) Choose the correct word from the box to answer the question below.

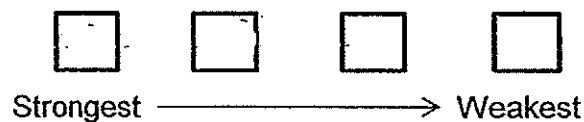


Susan's observation shows that iron is a _____ material. (1m)

34. Vivian wanted to test the strength of different magnets. She set up the experiment as shown below.

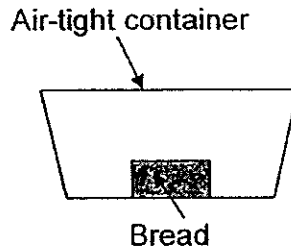


- a) Rank the magnets from the strongest to the weakest by filling the boxes below with A, B, C and D. (2m)



- b) State one change that can be made to the above set-up to make it a fair test. (1m)

35. Paul baked 4 loaves of bread A, B, C and D by changing the amount of water added and he kept other ingredients constant. He then placed each loaf of bread into an air-tight plastic container and left them in a room for a week as shown in the diagram below.

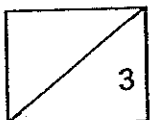


The table below shows the results of his experiment.

Bread	Amount of water added before baking (units)	Area of bread mould formed (cm ²)
A	5	0.8
B	10	1.4
C	15	2.3
D	20	3.2

- a) What is the aim of Paul's experiment? (1m)

- b) Based on the data above, what is the relationship between the amount of water added and the area of bread mould formed? (2m)



36. The table below shows characteristics of 3 animals, S, T and U.

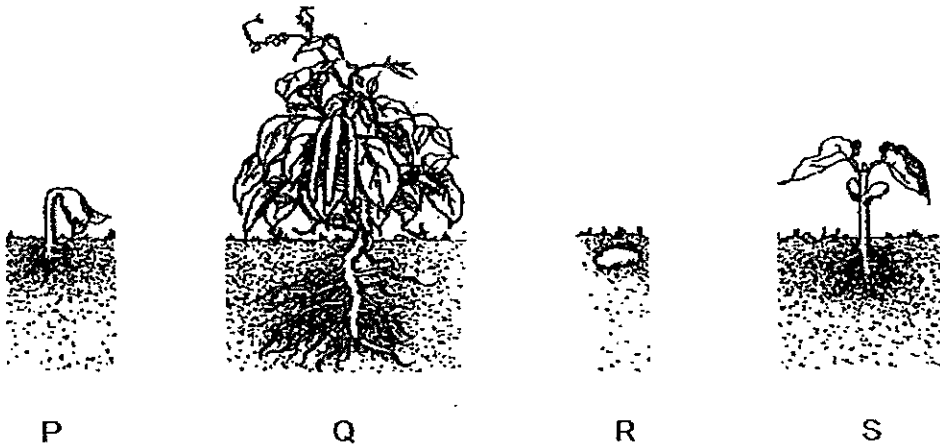
Characteristic	Animal		
	S	T	U
The young looks like the adult.	Yes	No	No
The adult has 6 legs.	No	No	Yes
The adult lay their eggs in water.	No	Yes	Yes

- a) Which animal is likely to have a 4-stage life cycle? (1m)

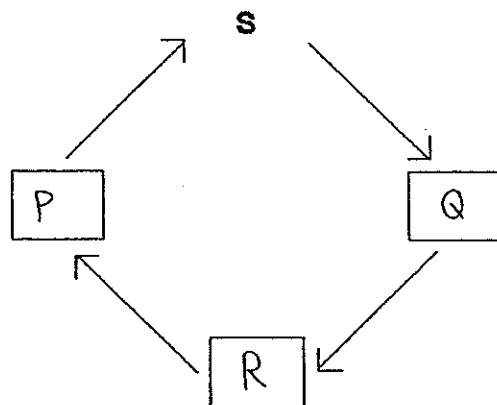
- b) Based on the characteristics given above, state 1 difference between Animal S and Animal T. (1m)

- c) *"Animal U spends its entire life cycle on land"*
Based on the information given in the table, explain why the statement above is not true. (1m)

37. The pictures below show the stages of growth of a bean plant.



- a) In the diagram below, put P, Q, R in the correct boxes to show the life cycle of the bean plant. (1m)



- b) Choose the correct words from the box to answer the question below.

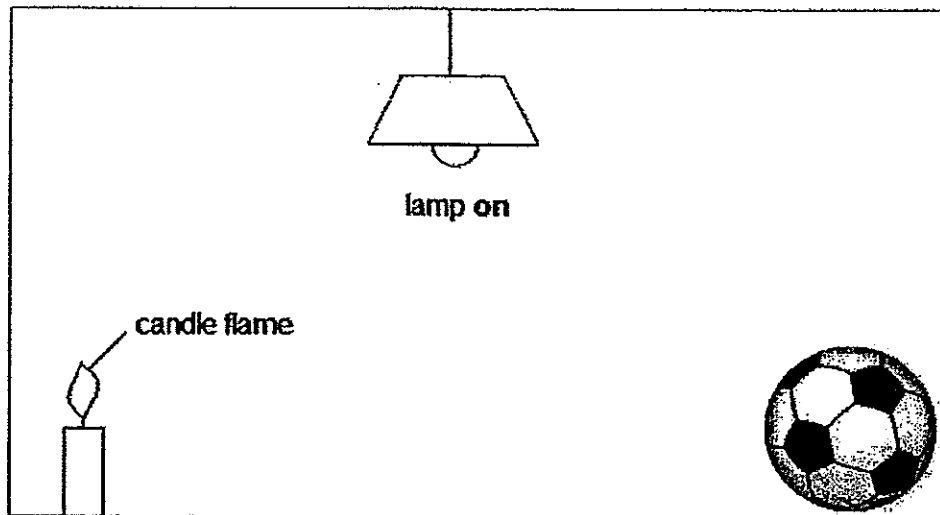
egg	seed	young plant	adult plant.
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Name the stages R and Q in the life cycle of the bean plant. (2m)

R: _____

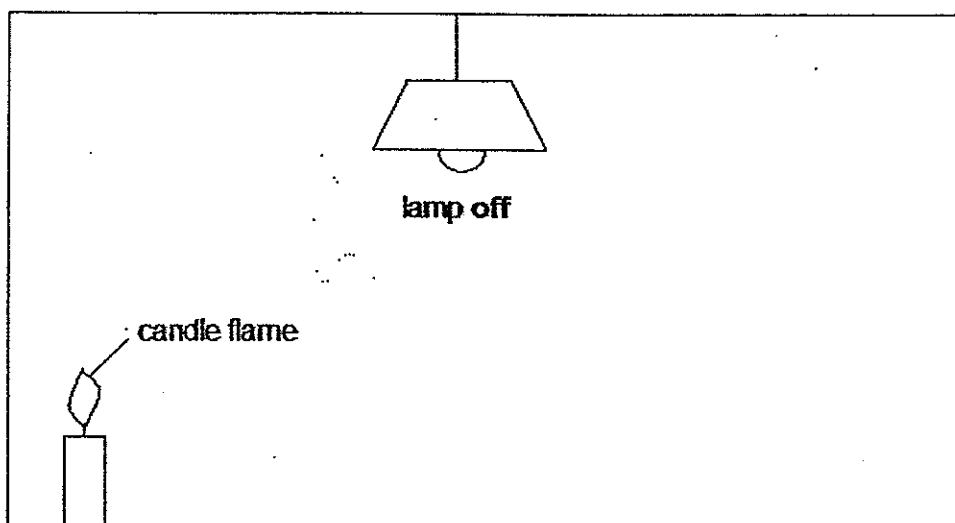
Q: _____

38. Aileen enters a room and sees a candle flame and a ball.



- a) Aileen can see the ball because it _____ light from the lamp. (1m)

When she switches off the light in the room, the room is completely dark. She can still see the candle flame at the corner.



- b) Aileen can see the candle flame because it _____ light. (1m)

39. The table below shows the states of 4 substances E, F, G and H at different temperatures.

Substance	State of substances at		
	20 °C	50 °C	80 °C
E	Solid	Solid	Solid
F	Liquid	Liquid	Gas
G	Liquid	Liquid	Liquid

- (a) Put a tick (✓) in the correct box to indicate if each statement is True or False. (2m)

		True	False
(i)	Substance E has the lowest melting point.		
(ii)	Substance F has a lower boiling point than G.		

- b) Which substance/s are solids at 35°C? (1m)

40. The diagram below shows a cooking pot.



- a) The pot's handle is made of plastic because it is a _____ conductor of heat. (1m)
- b) The pot's body is made of metal because it is a _____ conductor of heat. (1m)

41. The following table shows the properties of Materials P and Q.

Properties	P	Q
It can be stretched.	Yes	No
Its material/s was once alive.	Yes	No
It is a good conductor of heat.	No	No
It allows some light to pass through.	No	Yes

Study objects X, Y and Z.



rubber tyre



metal and glass mirror



wooden table

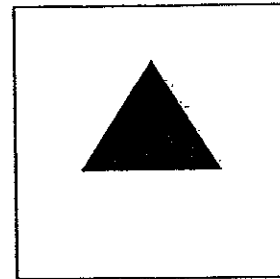
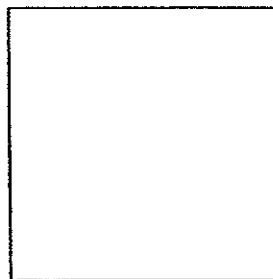
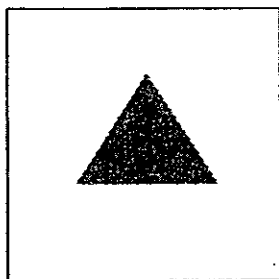
- a) Which of the above objects is likely to be constructed using Material P?

(1m)

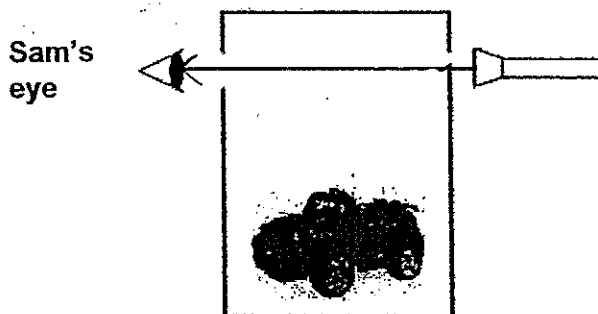
- b) Materials P and Q are cut into the shape of a triangle as shown below.



They are then placed between a torch and a screen. Write "P" and "Q" in the correct boxes to indicate what can be observed on the screen when the torch is turned on. (2m)



42. Sam places a toy car in a box which has holes cut on 2 opposite sides of the box as shown in the diagram below.



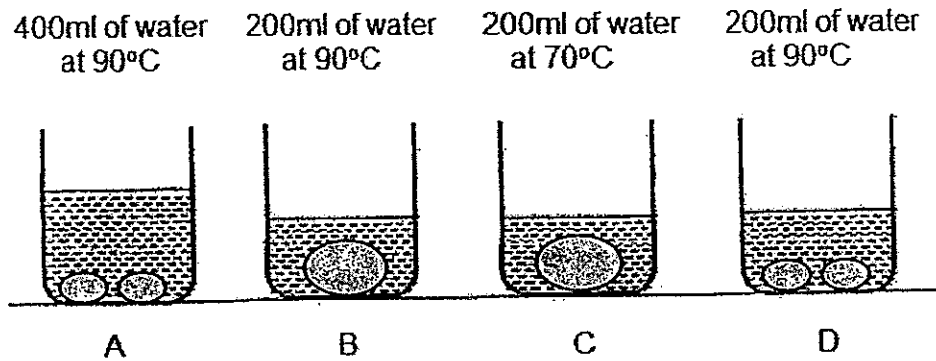
- a) Sam is unable to see the toy car even when the torch is turned on. In the diagram above, draw an arrow showing how the light travels when the torch is turned on. (1m)
- b) Without using additional objects or tilting the box, state what Sam can do in order to see the toy car in the box and explain why he can now see it. (2m)

43. Janet poured 200 ml of hot water into 3 bowls made of different materials, X, Y and Z. She used a temperature sensor to measure the temperature of the water in the 3 bowls at intervals of 2 minutes and recorded it in the table below.

Time (min.)	Temperature (°C)		
	Material X	Material Y	Material Z
0	80	80	80
2	79	74	77
4	78	66	72
6	78	60	66
8	76	55	59

- a) In the table above, fill in the temperature of Material Z at the 4th minute. (1m)
- b) Which material, X, Y or Z, is the poorest conductor of heat? Explain. (1m)

44. Study the four set-ups shown below.



a) Which 2 set-ups should Sophie use to conduct an experiment for each of the following aims:

i) To find out if the volume of water will affect the amount of heat cooking the eggs.

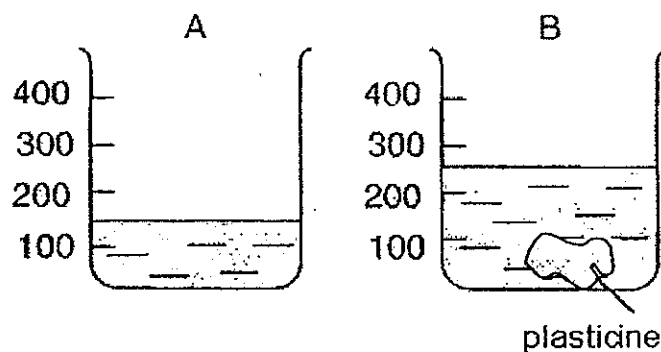
Set-up _____ and _____ (1m)

ii) To find out if the temperature of water will affect the amount of heat cooking the eggs.

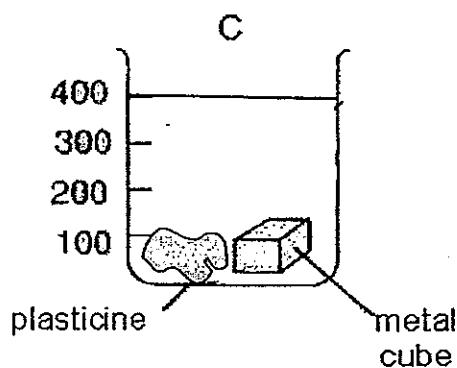
Set-up _____ and _____ (1m)

b) Can Sophie use Set-up B and D to find out if the number of eggs affect the time taken to cook it? Explain. (1m)

45. Melissa poured 150ml of water into a beaker as shown in diagram A. She then placed some plasticine in the beaker. The water level rose as shown in diagram B.



She then carefully placed a metal cube of volume 150cm^3 into the beaker as shown in diagram C.

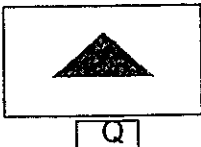
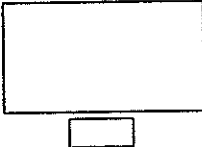
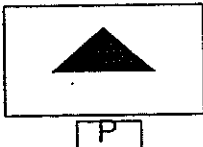
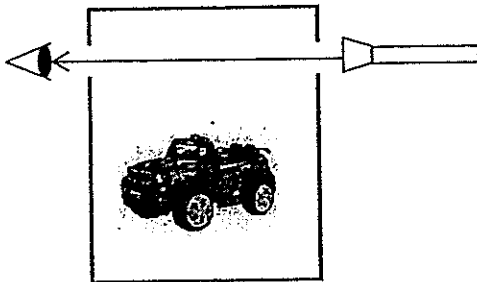


- a) In diagram C above, draw the new water level in the beaker. (1m)
- b) Melissa removed the plasticine and reshaped it into a ball. She then carefully placed the plasticine ball back into the beaker together with the metal cube.

Will the water level be higher, lower or the same as the water level you have drawn? Give a reason for your answer. (2m)

2014 Primary 4 SA2 Answers

1) 1	6) 2	11) 4	16) 2	21) 4	26) 1															
2) 3	7) 4	12) 1	17) 2	22) 4	27) 4															
3) 3	8) 2	13) 4	18) 2	23) 1	28) 4															
4) 3	9) 4	14) 3	19) 3	24) 3	29) 3															
5) 1	10) 4	15) 4	20) 3	25) 2	30) 4															
Qn	Suggested Answers																			
31	a) Mouth b) small intestine																			
32a)	Living things																			
32b)	<table><tr><td></td><td>Characteristic</td><td>Common?</td></tr><tr><td>i)</td><td>Needs food to stay alive</td><td>✓</td></tr><tr><td>ii)</td><td>Able to reproduce</td><td>✓</td></tr><tr><td>iii)</td><td>Needs to take in air to survive</td><td>✓</td></tr><tr><td>iv)</td><td>Able to move from place to place on its own</td><td></td></tr></table>						Characteristic	Common?	i)	Needs food to stay alive	✓	ii)	Able to reproduce	✓	iii)	Needs to take in air to survive	✓	iv)	Able to move from place to place on its own	
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iii)	Needs to take in air to survive	✓																		
iv)	Able to move from place to place on its own																			
33	a) Pull/force b) magnetic																			
34a)	D → B → A → C																			
34b)	Hang the magnets from the same height. OR Make the distance between the magnets and the iron pins the same.																			
35a)	To find out how the amount of water added to bread affects the area of bread mould formed /amount of mould growth																			
35b)	The more water added, the more bread mould is formed. OR The more water added, the more area of bread mould growth.																			
36a)	Animal U																			
36b)	The <u>young</u> of Animal S looks like the adult but the <u>young</u> of animal T does not look like the adult /T doesn't OR Adult T lays its eggs in water but Adult S does not.																			
36c)	U lays its eggs in water (therefore the egg stage is spent in water).																			
37a)	P Q R S P Q R S																			

37b)	R: Seed Q: Adult Plant						
38	a) Reflects ^{b)} emits / produces/ is a source of / gives off						
39a)	<table border="1"> <thead> <tr> <th>True</th><th>False</th></tr> </thead> <tbody> <tr> <td></td><td>✓</td></tr> <tr> <td>✓</td><td></td></tr> </tbody> </table>	True	False		✓	✓	
True	False						
	✓						
✓							
39b)	E						
40	a) Bad/poor b) good						
41a)	Rubber tyre / X						
41b)	 Q   P						
42a)							
42b)	Tilt the torch downwards (1m) so that light can fall on the toy car and can be reflected into Sam's eyes (1m)						
43a)	Between 67 and 76 °C (inclusive)						
43b)	X (1/2m) The bowl made with Material X had the <u>slowest decrease</u> in temperature. / water lose heat most slowly/ heat is conducted away most slowly						
44a , b)	a) A and D b) B and C						
44c)	No. The size of the eggs in both beakers is different so it is not a fair test.						
45a)	Water level at 400ml .						
45b)	Same. Changing the shape of the plasticine will not change its volume.						