SINGAPORE CHINESE GIRLS' SCHOOL

SECOND SEMESTRAL ASSESSMENT 2015

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.

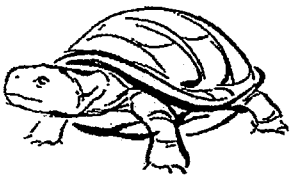
FOLLOW ALL INSTRUCTIONS CAREFULLY.

Part I (30 x 2 marks)

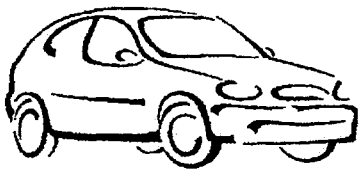
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

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

(1)

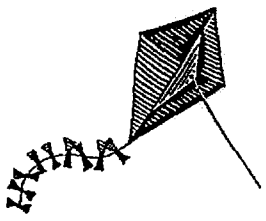


(3)

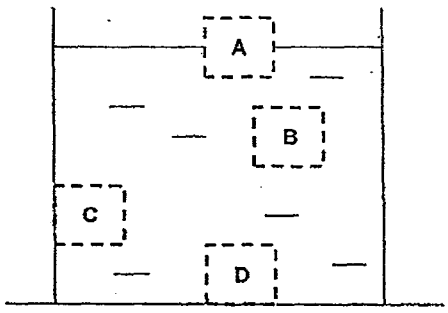


(2)

(4)

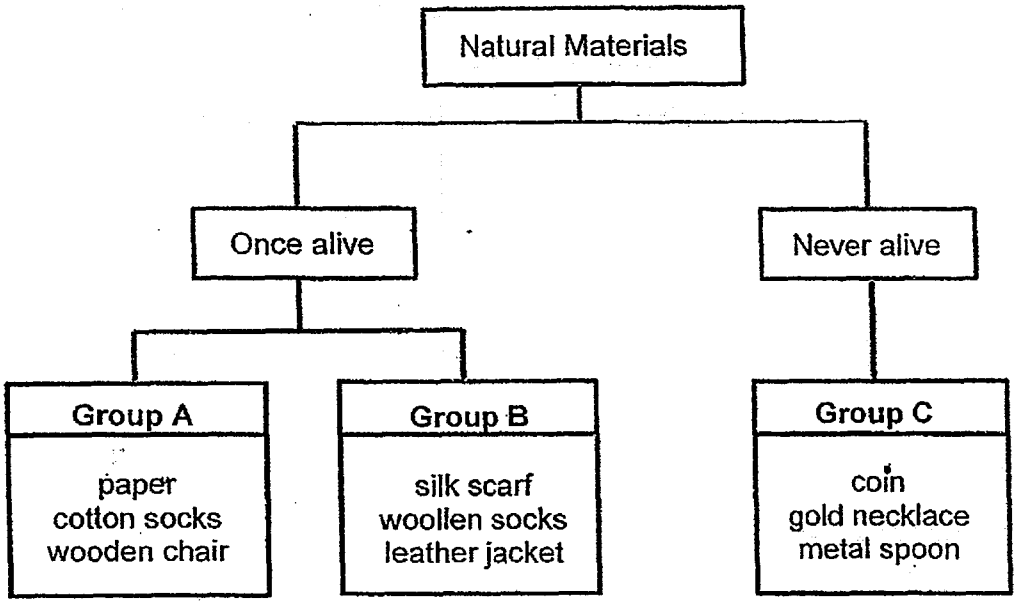


2. Bruce put a metal solid block into a container of water.
At which position, A, B, C or D, would the block most likely to be found?



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

3. Study the classification table below.



In which group would you put a silver key and a pair of rubber gloves?

	Silver key	Rubber gloves
1)	Group A	Group B
2)	Group B	Group A
3)	Group C	Group A
4)	Group B	Group C

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

	Non-flowering plants	Fungi
(1)	Mushroom	Mould
(2)	Bird's nest fern	Toadstool
(3)	Banana plant	Bird's nest fern
(4)	Duckweed	Moss

5. In which part of the digestive system is digested food absorbed into the blood?

(1) gullet
(2) stomach
(3) small intestine
(4) large intestine

6. Which of the following parts belong to the digestive system and respiratory system respectively?

	Digestive System	Respiratory System
(1)	nose	lung
(2)	stomach	nose
(3)	small intestine	gullet
(4)	windpipe	blood vessels

7. Which one of the following is the function of a leaf on a plant?

(1) holds plant upright
(2) takes in mineral salts
(3) makes food
(4) takes in water

8. Which of the following statement(s) about the function of roots is/are correct?

A: Roots anchor the plant firmly to the ground.
B: Roots absorb water and mineral salts.
C: Roots transport water and nutrients to other plant parts.

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

9. Study the flow chart representing the flow of air through the human respiratory system.

Air enters ➡ A ➡ B ➡ C

Which one of the following correctly shows what A, B and C represent?

	A	B	C
(1)	Nose	Mouth	Lungs
(2)	Mouth	Lungs	Windpipe
(3)	Nose	Windpipe	Lungs
(4)	Mouth	Windpipe	Nose

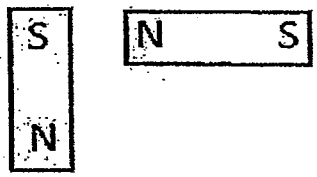
10. Object A was attracted to a magnet as shown in the figure below.

Object A is made of _____.

(1) rubber
(2) steel
(3) wood
(4) plastic

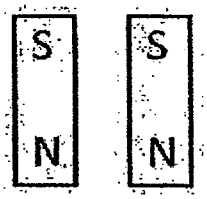
11. In which one of the following will the 2 magnets push each other away?

(1)



(3)

(2)



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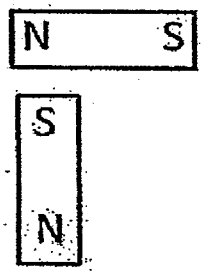
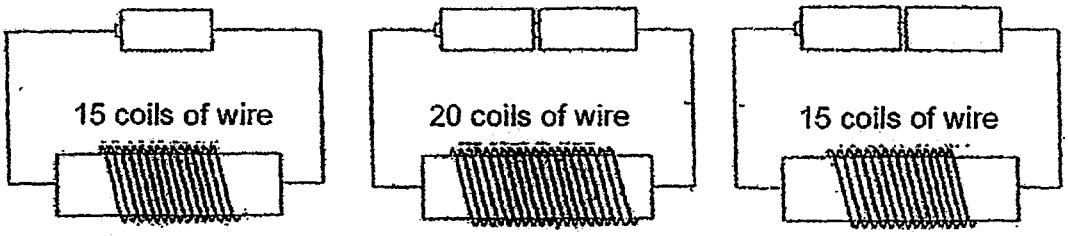


12. Ramesh made some electromagnets with different number of coils of wire and batteries.

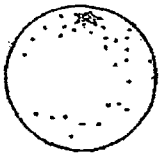


Arrange the electromagnets, **starting from the weakest electromagnet to the strongest electromagnet.**

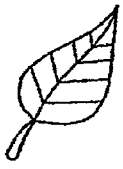
(1) A, B, C
(2) B, C, A
(3) C, B, A
(4) A,C, B

13. Which one of the following is a source of light?

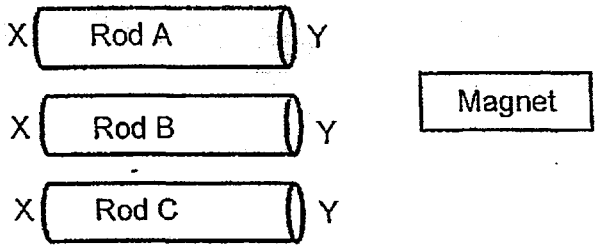
(1) 
a candle flame

(2) 
an orange

(3) 
the moon

(4) 
a leaf

14. Andrea has 3 different rods A, B and C. She carries out an experiment by placing a magnet near each of these 3 rods.



The table below records Andrea's observations.

Rod	Observations
A	X is attracted to both poles of the magnet. Y is attracted to both poles of the magnet.
B	X is attracted to one pole of the magnet. Y is repelled by one of the poles of the magnet.
C	Both X and Y are not attracted to any poles of the magnet.

Which of the following statements about rods A, B and C is most likely to be correct?

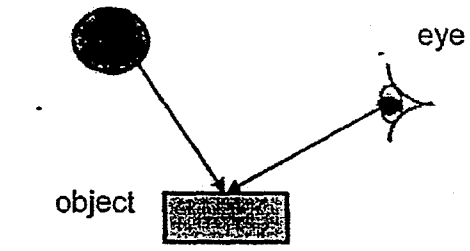
(1) Both A and B are magnets.
(2) Both A and B are made of magnetic materials.
(3) C can be made into a magnet.
(4) A cannot be made into a magnet.

15. Which one of the following is the best conductor of heat?

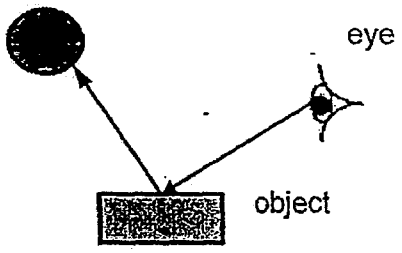
(1) A paper plate
(2) A metal plate
(3) A plastic plate
(4) A wooden plate

16. Which of the following shows how a person can see the object under the sun?

(1)



(3)



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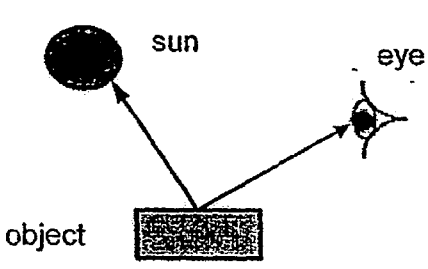

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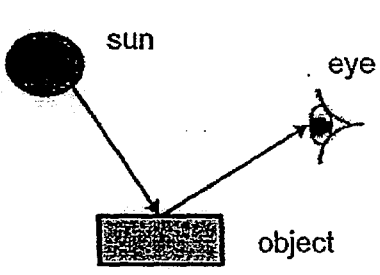
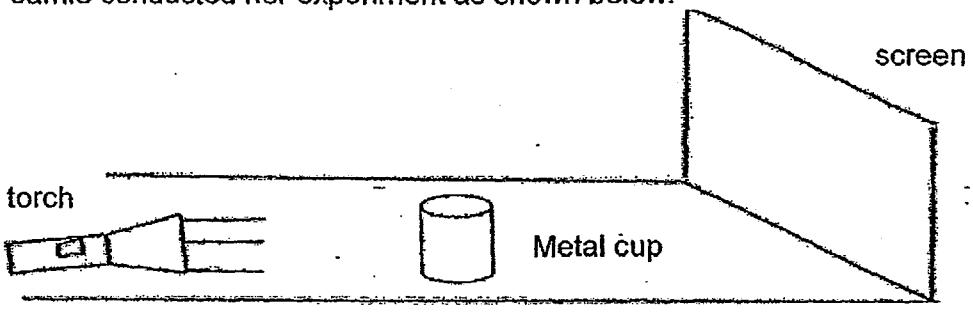


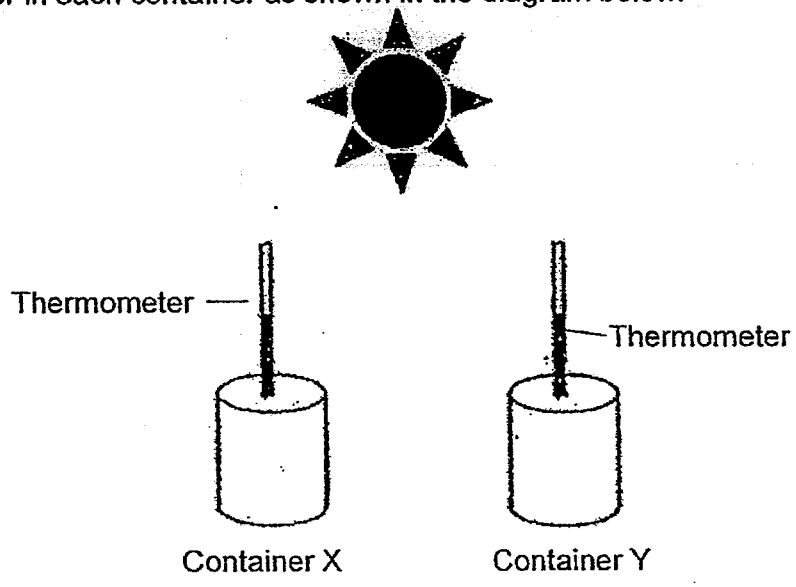
17. Jamie conducted her experiment as shown below.



Which of the following actions will decrease the size of the shadow?

(1) Moving the torch closer to the metal cup
(2) Moving the metal cup closer to the torch
(3) Moving the screen closer to the metal cup
(4) Moving the screen away from the metal cup

18. Two empty containers, of identical size, were placed under the sun together with a thermometer in each container as shown in the diagram below.



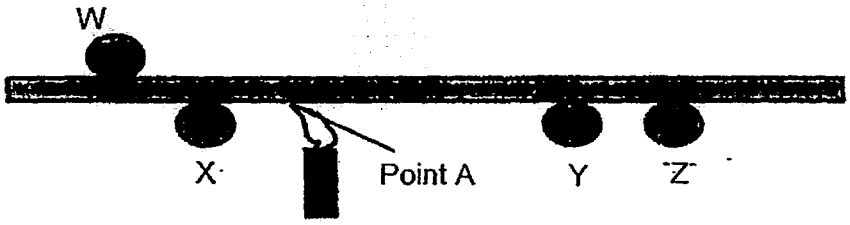
The readings on the thermometers were recorded every 2 minutes as shown in the table below.

Time (min)	2	4	6	8
Thermometer readings in Container X (°C)	28	29	30	32
Thermometer readings in Container Y (°C)	28	31	33	35

Based on the information above, which one of the following statements is a possible explanation for the changes in temperature observed?

(1) Container X gained heat faster than Container Y
(2) Container Y has lost more heat than Container X
(3) Container X has gained more heat than Container Y
(4) Container Y is a better conductor of heat than Container X

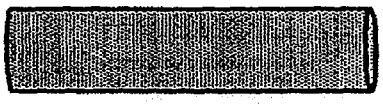
19. Ashley attached 4 wax balls, W, X, Y and Z, to an iron rod as shown in the diagram below. She then heated the rod at Point A.



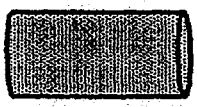
Which one of the following will show the order, from the first to the last, in which the wax balls will melt?

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

20. The four metal rods shown below were heated to 100°C.
Which one of the rods contains the most amount of heat?

(1) 

(2) 

(3) 

(4) 

21. Water can exist in 3 states.
Which of the following processes show water gaining heat?

A: A cup of hot water becoming cooler
B Ice melts and becomes water
C Wet clothes become dry
D: Water freezes to become ice

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

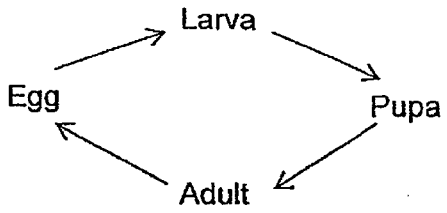
22. A woollen jacket can keep the body warm during winter. It is because the _____.

(1) woollen jacket is a source of heat
(2) woollen jacket is a poor conductor of heat
(3) body can absorb the heat from the woollen jacket
(4) heat from the body is quickly transferred to the jacket

23. Sam made the following observations on the life cycle of an animal.
- There are 3 stages in the life cycle.
- The young looks like the adult.

Which animal was Sam observing?
(1) frog
(2) beetle
(3) butterfly
(4) cockroach

24. The diagram shows the life cycle of an animal.



Which of the following animals go through the life cycle shown above?

A. Butterfly
B. Mealworm Beetle
C. Cockroach
D. Frog

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

25. Four identical dishes, P, Q, R and S, each contained the same amount of cotton wool. 10 beans were placed on the cotton wool in each of the dishes for a week. The beans were placed under different conditions as shown below.

Dish	Air	Water	Sunlight	Temperature (°C)
P	Yes	Yes	Yes	30
Q	Yes	Yes	No	30
R	Yes	No	Yes	33
S	No	No	No	33

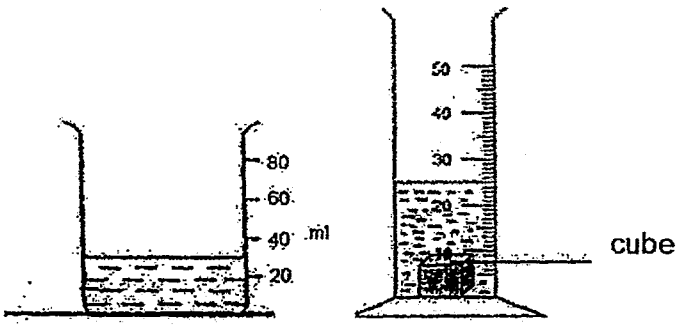
Based on the information in the table above, which dish(es) will have seedlings in a week's time?

(1) P only
(2) P and Q only
(3) R only
(4) Q and S only

26. Matter is anything that has mass and occupies space.
Which one of the following is NOT matter?

(1) air
(2) shadow
(3) soil
(4) water

27. Wilson set up an experiment as shown below.

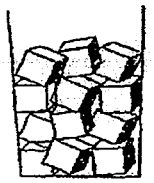


Beaker Measuring cylinder

Which of the following would he observe if he removes the cube from the measuring cylinder and places it into the beaker?

	Water level in the beaker	Water level in the measuring cylinder
(1)	Remain the same	Remain the same
(2)	Decreases	Increases
(3)	Increases	Decreases
(4)	Remain the same	Increases

28. The diagram shows ice cubes melting in a cup.

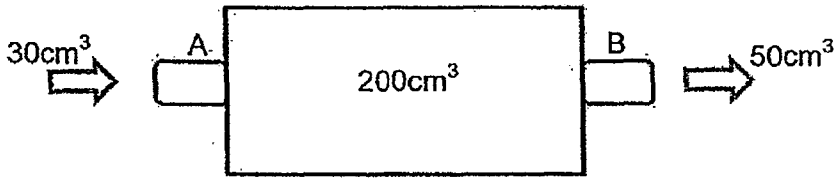


As the ice cubes melt, there is a change of _____.

X: mass
Y shape
Z. state

(1) Z only
(2) X and Y only
(3) Y and Z only
(4) X, Y and Z

29. Study the diagram as shown below.



$30cm^3$ of air was pumped into a $200cm^3$ metal container through an inlet at Point A. $50cm^3$ of air was pumped out from an outlet at Point B. What was the final volume of air in the metal container?

(1) 200 cm^3
(2) 230 cm^3
(3) 280 cm^3
(4) 180 cm^3

30. At which temperature will the water in the cup evaporate?

P: 100°C
Q: 29°C
R: 5°C

(1) P only
(2) R only
(3) Q and R only
(4) P, Q, R

SINGAPORE CHINESE GIRLS' SCHOOL
SECOND SEMESTRAL ASSESSMENT 2015
PRIMARY 4
SCIENCE

Name: _____ ( ) Date: _____

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

Components	Marks Obtained	Total Possible Marks
Part I		60
Part II		40
Total		100

Parent's Signature:

_____

BOOKLET B

14 questions

40 marks

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

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FOLLOW ALL INSTRUCTIONS CAREFULLY.

Part II (40 marks)

Answer all the following questions.

31. Jasmine observed and grouped some things as shown in the table.

F	G
Tiger	Stone
Ant	Cloth
Mushroom	Pen

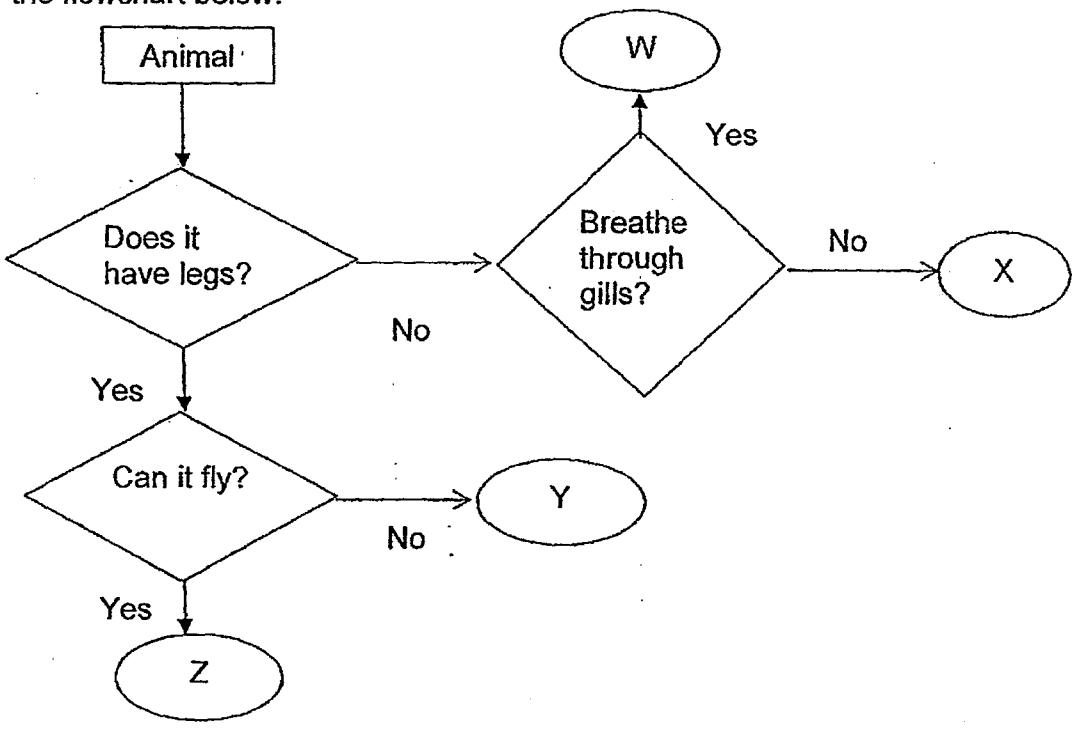
What are suitable headings for F and G?

Group F:_____ (1m)

Group G:_____ (1m)

2

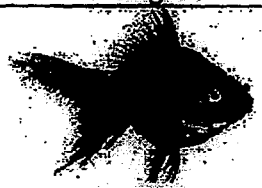
32. Study the flowchart below.



(a) Animal Y and Z are animals. Based on the flowchart above, state another similarity between Animal Y and Animal Z. (1m)

_____

(b) Based on the flowchart above, match the letters (W, X, Y or Z) to the animals shown below. (3m)

	Animal	Letter
(i)	 Whale	
(ii)	 Penguin	
(iii)	 Fish	

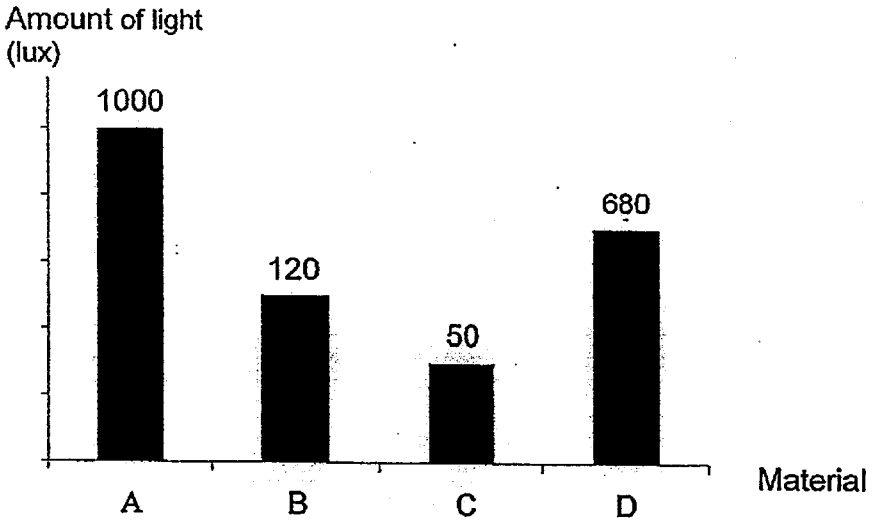
4

33. Minah wants to find out which of the materials, A, B, C or D, is the most suitable for making a changing room curtain.

(a) Help Minah plan her experiment to by putting a tick (√) in the appropriate column to indicate which variables must be kept the same, changed and be measured for the results. (2m)

	Variables	Kept the same	Changed	Measured for the results
(i)	Type of materials			
(ii)	Distance between light source and each material			
(iii)	Amount of light that pass through the material			
(iv)	Thickness of material			

(b) The graph below shows the amount of light that can pass through 4 different materials, A, B, C and D.

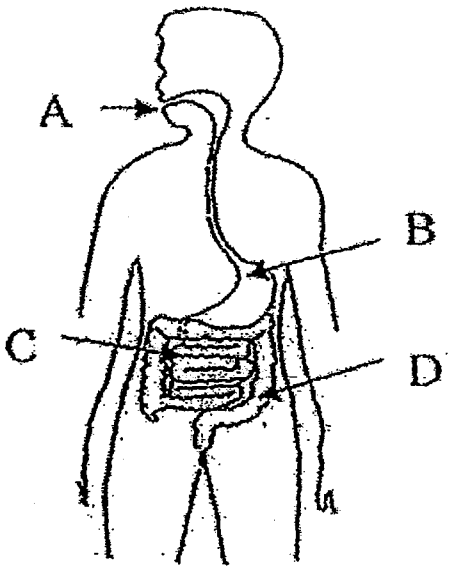


Based on the information from the graph, which material, A, B, C or D, is most suitable for making a changing room curtain? Explain your answer using the information in the graph. (2m)

34. Fill in the correct parts of a plant in the table. (2m)

Functions of plant parts	Plant parts
It holds the plant upright.	
It obtains water for the plant.	

35. The diagram below shows the human digestive system.



Identify the part where

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

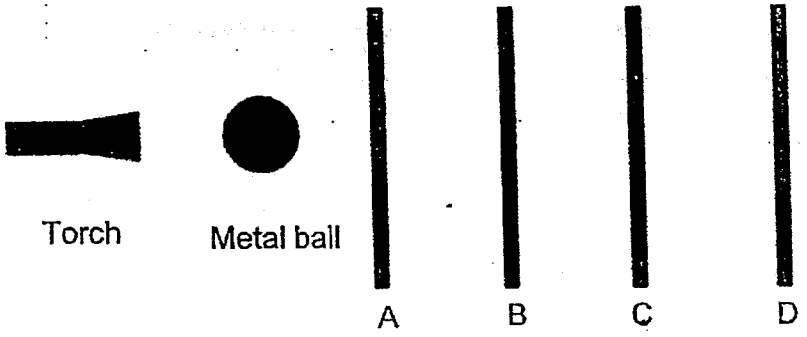
(b) there is no digestion : _____ (1m)

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

	Statement	True	False
(a)	A piece of copper can be magnetized by passing electricity through it.		
(b)	The magnetic force of a magnet is the strongest at its poles.		
(c)	A magnet can attract things that are made of iron and steel.		
(d)	A smaller magnet always has a weaker magnetic force than a larger magnet.		

6

37. Angeline carried out an experiment as shown below in a dark room. Four materials, A, B, C and D, were placed at various distances from the source of light. A metal ball was placed between the torch and Material A.

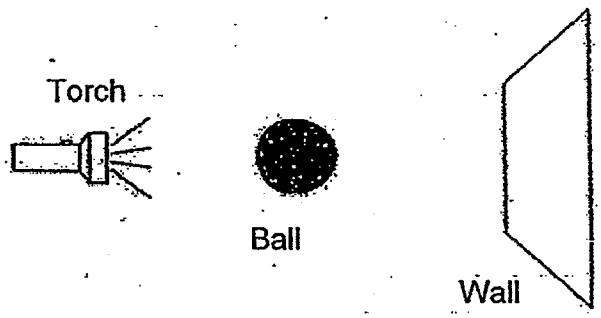


When the torch was switched on, **a clear and dark shadow** was seen on Material C only.

Put a tick (√) in the appropriate column to indicate the statements made based on Angeline's experiment above. (2m)

	Conclusion	True	False	Not possible to tell
(a)	Material A is opaque			
(b)	Material B is transparent			
(c)	Material C is opaque			
(d)	Material D is translucent.			

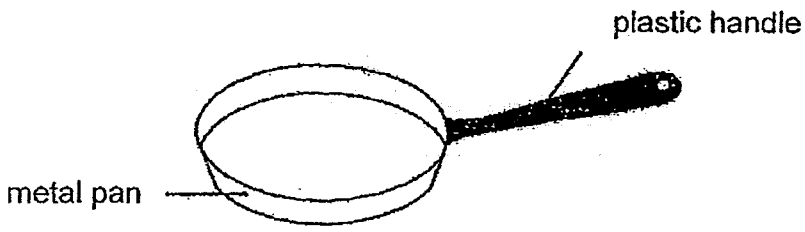
38. Leena shines a torch on a ball and a shadow is formed on a smooth wall.



(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)

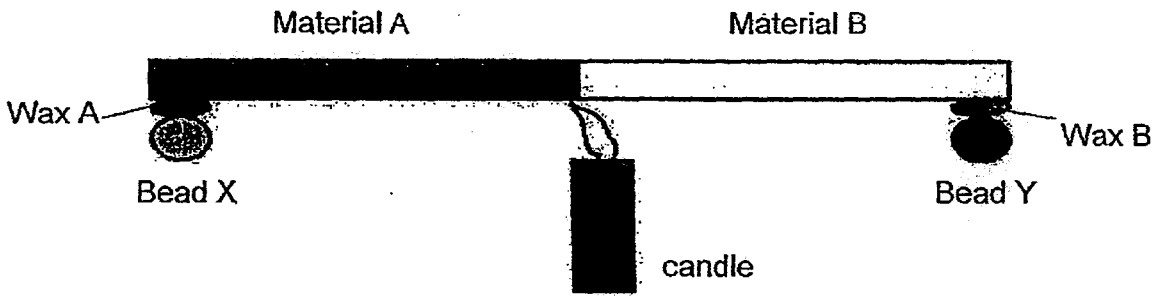
39. The diagram below shows a frying pan. (2m)



(a) The handle is made of plastic because it is a _____conductor of heat.

(b) The pan is made of metal because it is a _____ conductor of heat.

40. Richard set up an experiment as shown below.



(a) Explain why Wax A and Wax B melted after some time. (1m)

_____

(b) Richard observed that Bead X dropped first. Explain why by completing the following sentence. (The blanks can be filled with more than one word)

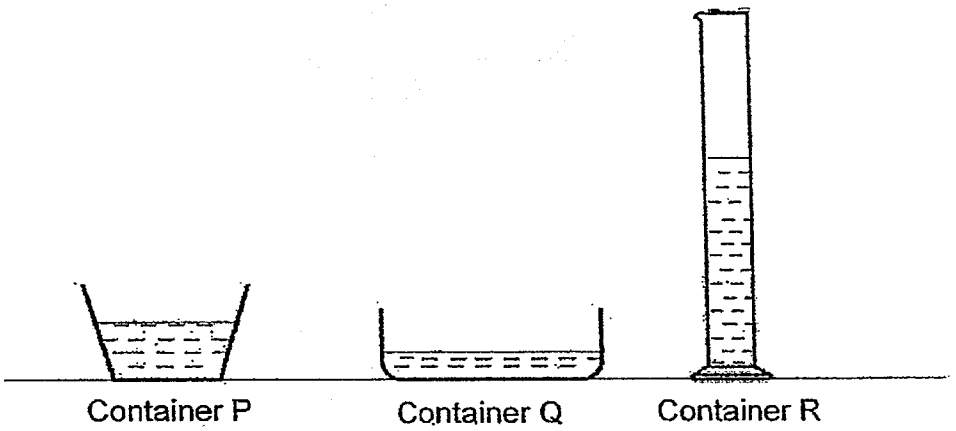
Bead X dropped first because Material A is a _____ (1m) conductor of heat than Material B and the heat is transferred _____ (½m) from _____ to _____ (½m) than Material B.

(c) Richard's mother wanted to make a box to keep his food warm for a longer period of time. Which material, A or B, should she use? (1m)

_____

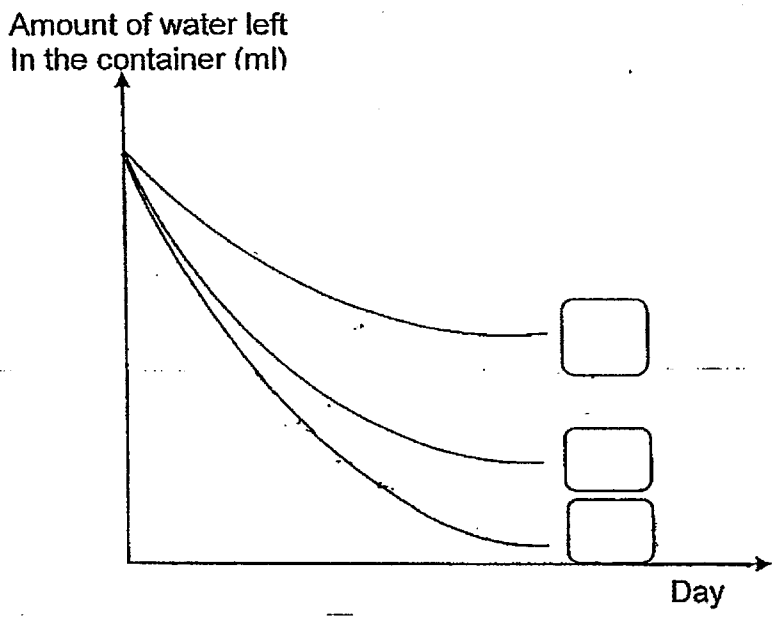
6

41. Sarimah poured 200ml of water each into 3 different containers, P, Q and R as shown below. She left the containers in a room for a few days.



(a) Arrange the containers, P, Q and R, starting from the one that had the highest rate of evaporation to the one that had the lowest rate of evaporation. (1m)

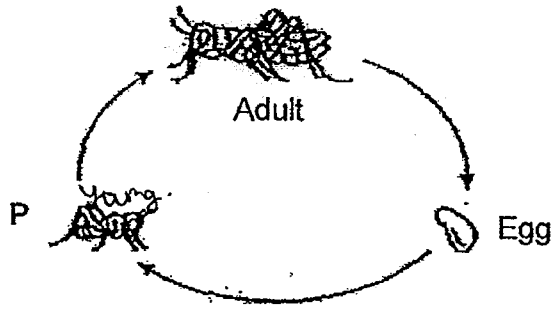
(b)



Write P,Q and R in the boxes to indicate which curves above represent the amount of water left in the containers P, Q and R after a few days. (1m)

2

42. The diagram below shows the stages in the life cycle of a grasshopper.



(a) Name stage P. (1m)

_____

(b) State one other animal that has a similar life cycle as a grasshopper.(1m)

_____

(c) State 2 differences between the **life cycle** of a grasshopper and the **life cycle** of a mosquito. (2m)

(i) _____

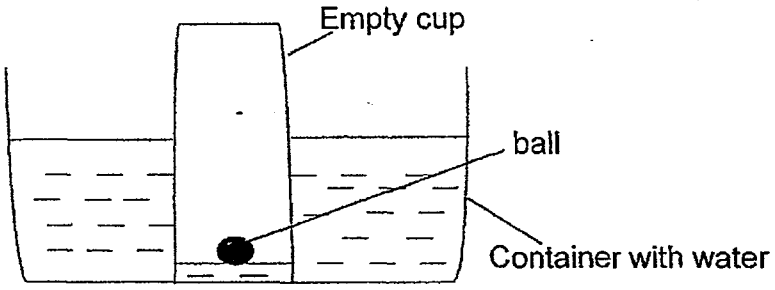
_____

(ii) _____

_____

4

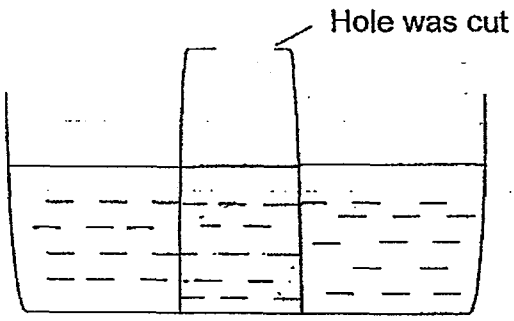
43. Jamie inverted an empty cup with a small ball inside into a container of water until it touched the bottom of the container. She observed that the water level inside the glass was lower than the water level outside. The ball was still floating on the water as shown below.



(a) Explain why the water level inside the cup is lower than the water level in the container. (1m)

(b) Explain why some water went into the cup. (1m)

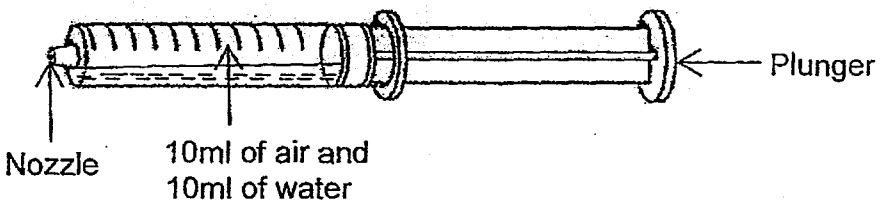
(c) Jamie cut a hole at the base of the cup as shown below. **Draw the water level inside the cup** and the **position of the ball.** (2m)



4

44.

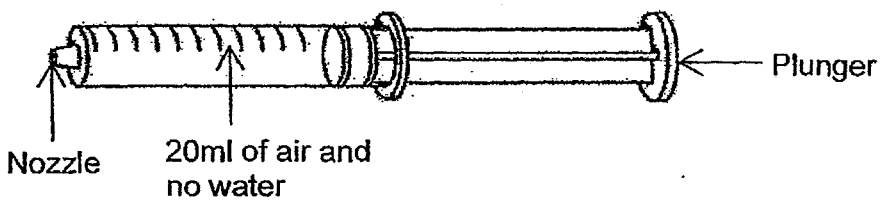
(a) May filled a syringe with 10ml of air and 10ml of water. She placed her thumb over the nozzle and pressed in the plunger till it could not be pressed further.



What is the most likely total volume of air and water in the syringe after May has pressed in the plunger? (1m)

_____

(b) May then removed the water and filled the syringe with 20 ml of air. Again she pressed in the plunger till it could not be pressed further.



How will May be able to push in the plunger this time? (1m)

May will be able to push in the plunger	**Tick (√) only one**
Further in than in (a)	
Less than in (a)	
The same distance as in (a)	

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

_____

_____

4

SINGAPORE CHINESE GIRLS' SCHOOL (PRIMARY)
SECOND SEMESTRAL EXAMINATION 2015
PRIMARY 4 SCIENCE

Part I

1) 1	6) 2	11) 2	16) 4	21) 2	26) 2
2) 4	7) 3	12) 4	17) 3	22) 2	27) 3
3) 3	8) 2	13) 1	18) 4	23) 4	28) 3
4) 2	9) 3	14) 2	19) 2	24) 2	29) 1
5) 3	10) 2	15) 2	20) 1	25) 2	30) 4

Part II

<table>
<tr><th>Question No.</th><th>Suggested Answer</th></tr>
<tr><td>31.</td><td>Group F: <u>living things</u>
Group G: <u>non-living things</u>
Accept other characteristics that differentiate living and non-living things</td></tr>
<tr><td>32a)
32b)</td><td>Both have legs.
X, Y, W</td></tr>
<tr><td>33a)</td><td>
<table>
<tr><th></th><th>Variables</th><th>Kept the same</th><th>Changed</th><th>Measured for the results</th></tr>
<tr><td>(i)</td><td>Types of materials</td><td></td><td>√</td><td></td></tr>
<tr><td>(ii)</td><td>Distance between light source and each material</td><td>√</td><td></td><td></td></tr>
<tr><td>(iii)</td><td>Amount of light that pass through the material</td><td></td><td></td><td>√</td></tr>
<tr><td>(iv)</td><td>Thickness of material</td><td>√</td><td></td><td></td></tr>
</table>
</td></tr>
<tr><td>33b)</td><td>Material C. It allows the least amount of light to pass through.</td></tr>
<tr><td>34.</td><td>Stem, roots</td></tr>
<tr><td>35a)
35b)</td><td>A
D</td></tr>
<tr><td>36.</td><td>
<table>
<tr><th></th><th>Statement</th><th>True</th><th>False</th></tr>
<tr><td>(a)</td><td>A piece of copper can be magnetized by passing electricity through it.</td><td></td><td>√</td></tr>
<tr><td>(b)</td><td>The magnetic force of a magnet is the strongest at its poles.</td><td>√</td><td></td></tr>
<tr><td>(c)</td><td>A magnet can attract things that are made of iron and steel.</td><td>√</td><td></td></tr>
<tr><td>(d)</td><td>A smaller magnet always has a weaker magnetic force than a larger magnet.</td><td></td><td>√</td></tr>
</table>
</td></tr>
</table>

37.

	Conclusion	True	False	Not possible to tell
(a)	Material A is opaque		√	
(b)	Material B is transparent	√		
(c)	Material C is opaque	√		
(d)	Material D is translucent.			√

38a) blocked

38b)

39a) poor/ bad

39b) good

40a) Heat was conducted from the candle (heat source) by the both the materials to the wax to melt the wax.

40b) Material A is a <u>better conductor of heat</u> than Material B and thus heat is conducted <u>faster/more quickly (1/2m)</u> from <u>candle</u> to the <u>Wax A</u> (1/2m) than A.

40c) Material B.

41a) Q, P, R

41b) Top – R, Middle – P, Bottom - Q

42a) nymph

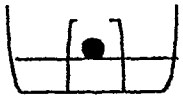
42b) cockroach / dragonfly / damselfly

42c) A grasshopper has a 3-stage life cycle but a mosquito has 4-stage life cycle.
OR: A grasshopper spends its entire life cycle on land but a mosquito spends part of its life cycle in water/land.
OR: Young of grasshopper look like its parent/adult but young of mosquito does not.

43a) Air <u>inside the cup</u> occupies space

43b) Air in the cup can be compressed.

43c)



44a) 10.5 to 19.5 ml

44b)

May will be able to push in the plunger	Tick (√) only one
Further in than in (a)	√
Less than in (a)	
The same distance as in (a)	

44c) In part(b), the syringe has only air (and no water) and air can be compressed but in part(a), the syringe has also 10ml of water which has fixed volume/ cannot be compressed.