

Pei Chun Public School
Semestral Assessment 2 – 2015
Science
Primary 4

Name : _____ ()

Date : 29 Oct 2015

Class : Pri. 4 ()

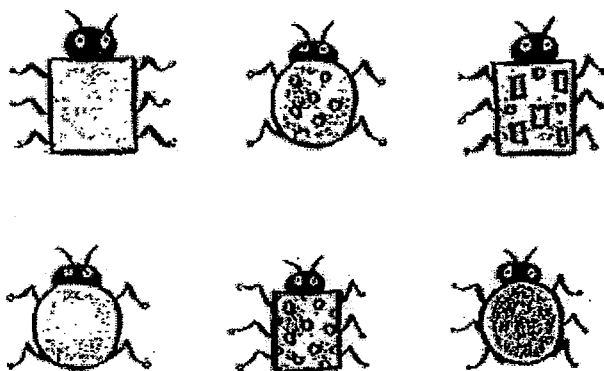
Science Teacher : _____

Time : 1 h 30 min

Section A (30 × 2 marks)

For questions 1 to 30, choose the most suitable answer and shade its number (1, 2, 3 or 4) on the Optical Answer Sheet (OAS) provided.

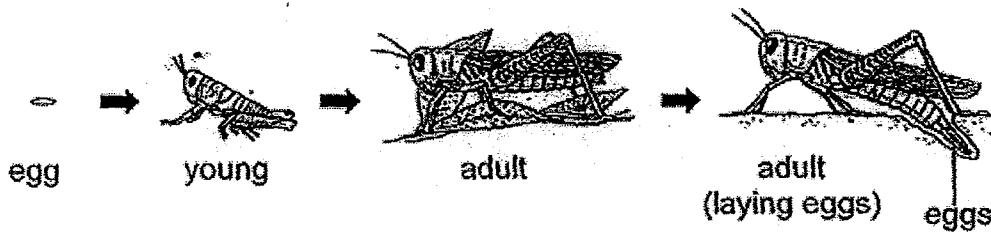
1. The diagrams below show six different creatures.



Which of the following characteristics could be used to divide these creatures into two equal groups?

- (1) body shape
 - (2) number of feelers
 - (3) patterns on the body
 - (4) number of pairs of legs
2. Which statement is true about most mammals?
- (1) They can swim.
 - (2) They have wings.
 - (3) They produce milk.
 - (4) They have four legs.

3. Daniel found the egg of an animal and observed how it develops over a few weeks. The diagram below shows his observations.

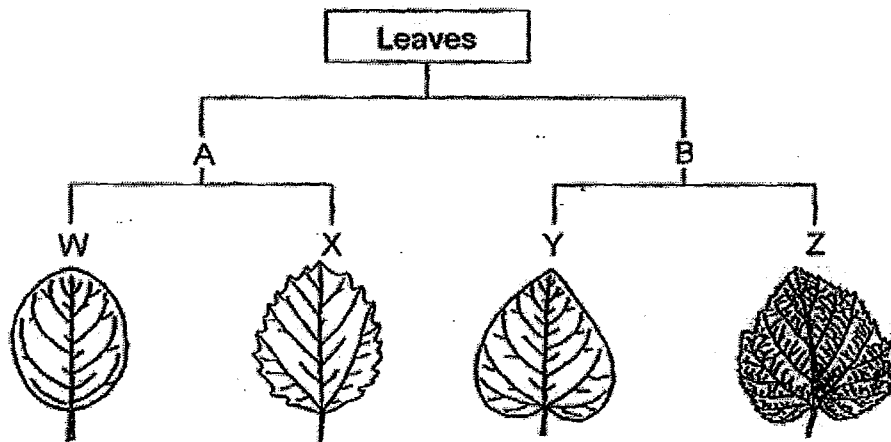


Based on his observations, he can conclude that the animal is a living thing because it can _____.

- A : grow
- B : respond
- C : reproduce

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

4. The diagram below shows how different leaves are classified according to certain characteristics, A, B, W, X, Y and Z.



Which of the following is correct?

| | A | Z |
|-----|-------------|--------------|
| (1) | Oval-shaped | Heart-shaped |
| (2) | Oval-shaped | Jagged edge |
| (3) | Jagged edge | Heart-shaped |
| (4) | Smooth edge | Jagged edge |

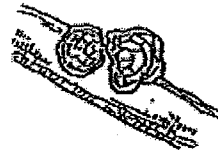
5. Which of the following characteristics can be used to differentiate between amphibians and reptiles?

- (1) number of legs
- (2) body temperature
- (3) how they reproduce
- (4) type of body covering

6. The diagram below shows two living things.



Bird's nest fern



Bracket fungus

What do the two living things have in common?

- (1) They reproduce by seeds.
- (2) They reproduce by spores.
- (3) They can make their own food.
- (4) They cannot make their own food.

7. The table below shows Nurul's answers to three questions about bacteria.

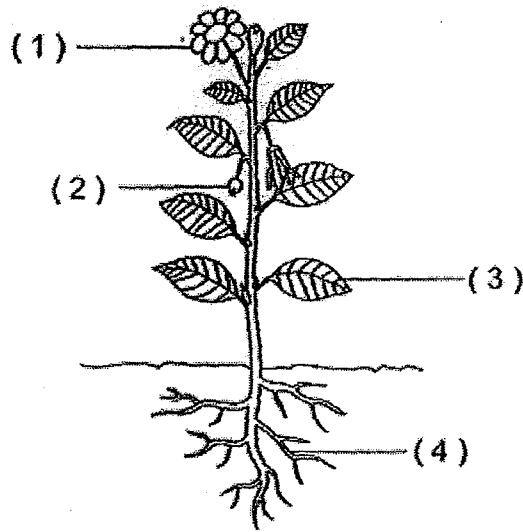
| Question | Answer |
|---|--------|
| A – Can bacteria be found everywhere? | No |
| B – Can all bacteria make their own food? | No |
| C – Can all bacteria be seen with a magnifying glass? | Yes |

Which question(s) was/were answered correctly?

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

8. The diagram below shows a plant.

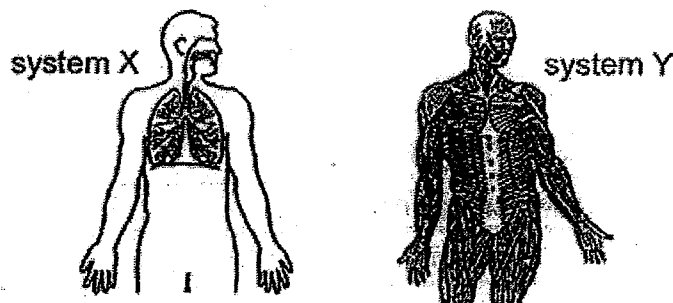
Which part, (1), (2), (3) or (4), makes food for the plant?



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

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

10. The diagram below shows two body systems.



Which of the following correctly identifies systems X and Y?

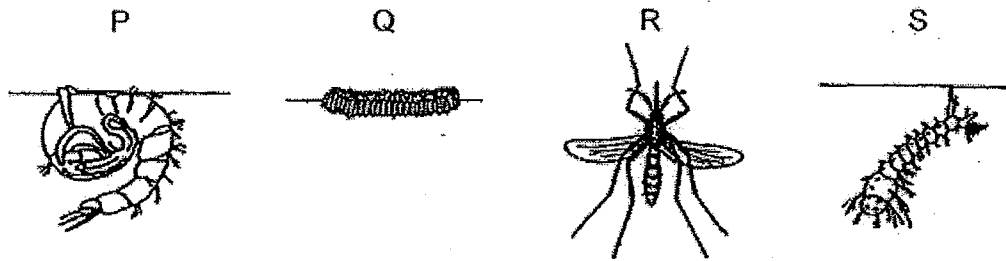
| | System X | System Y |
|-----|--------------------|-----------------|
| (1) | respiratory system | muscular system |
| (2) | respiratory system | skeletal system |
| (3) | circulatory system | muscular system |
| (4) | circulatory system | skeletal system |

11. Which of the following correctly state(s) the function of the circulatory system?

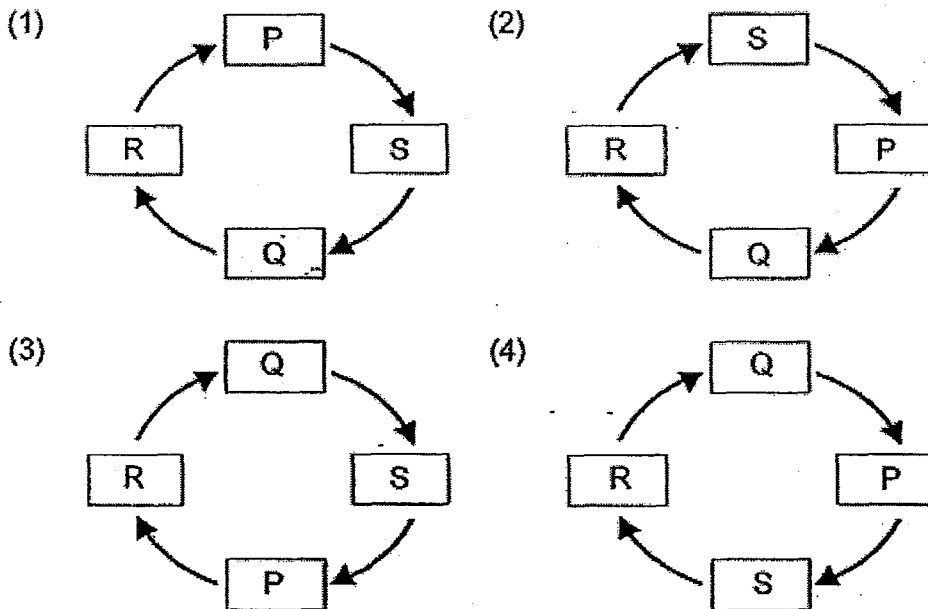
- A : Gives the body shape
- B : Takes in oxygen for the body
- C : Protects some of the organs in the body
- D : Carries waste materials away from the different parts of the body

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

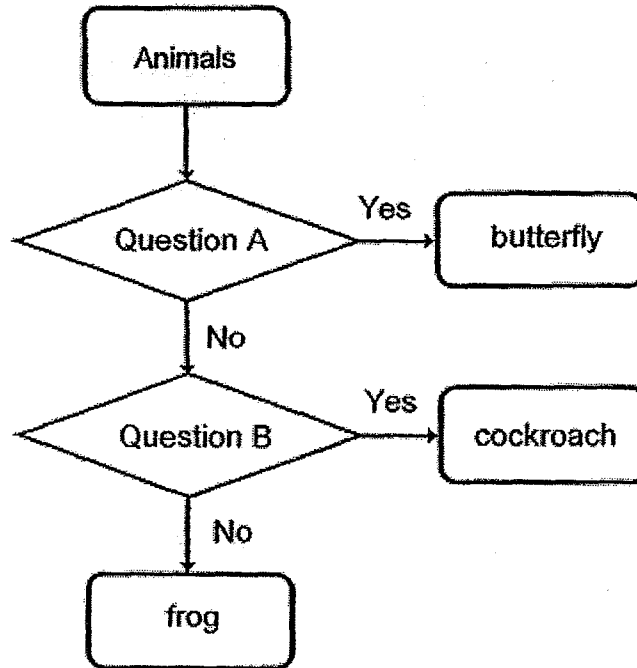
12. P, Q, R and S are various stages in the life cycle of a mosquito.



Which of the following correctly shows the life cycle of a mosquito?



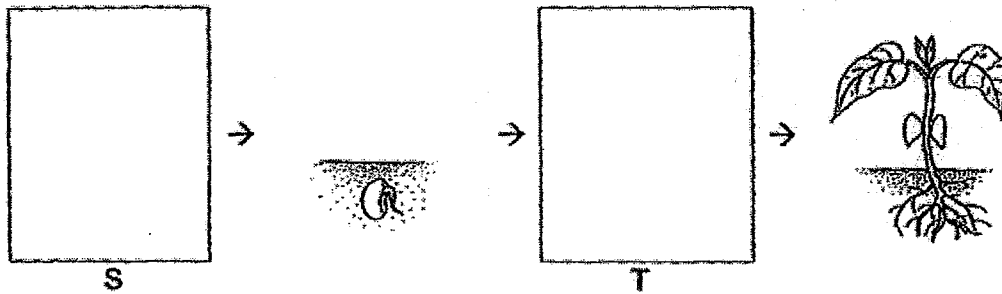
13. Three animals were classified as shown below.



What were questions A and B?

| | Question A | Question B |
|-----|-------------------------------------|-------------------------------------|
| (1) | Does it have a 4-stage life cycle? | Does it have a 3-stage life cycle? |
| (2) | Does the young look like the adult? | Does it have a 3-stage life cycle? |
| (3) | Does it have a 4-stage life cycle? | Does the young look like the adult? |
| (4) | Does it have a 3-stage life cycle? | Does the young look like the adult? |

14. The diagram below shows the growth of a young plant with two missing stages S and T.

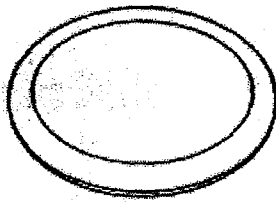


Which of the following shows the correct stages for S and T?

| | S | T |
|-----|---|---|
| (1) | | |
| (2) | | |
| (3) | | |
| (4) | | |

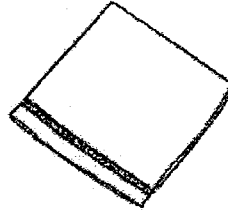
15. Which of the following objects can be bent easily without breaking?

(1)



a ceramic plate

(2)



a handkerchief

(3)



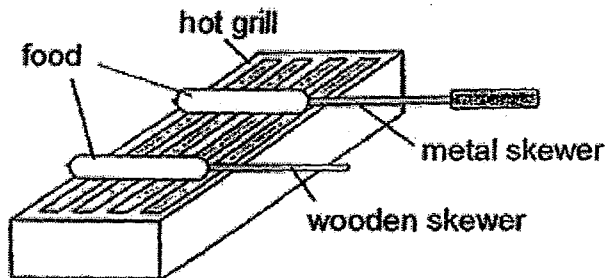
a plastic fork

(4)



wooden chopsticks

16. Mary cooked food using a wooden skewer and a metal skewer as shown below.

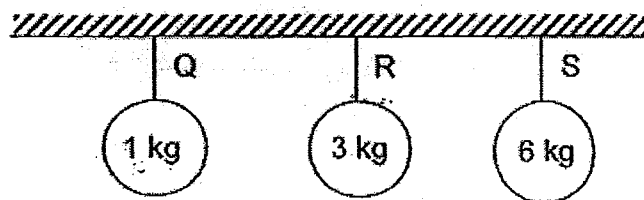


After some time, part of the wooden skewer was burnt, but not the metal skewer.

Which of the following best explains this difference?

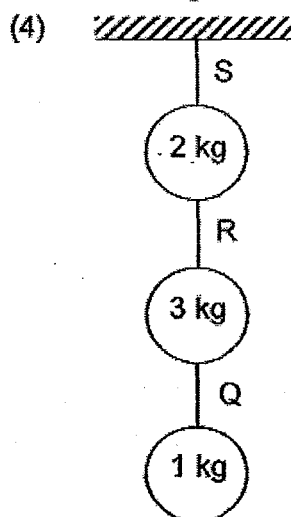
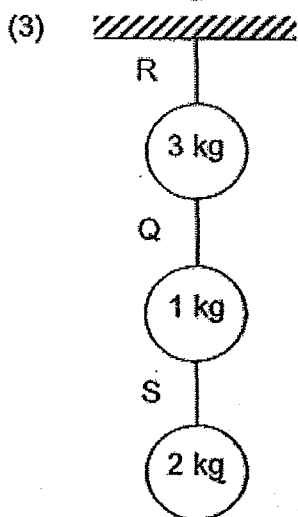
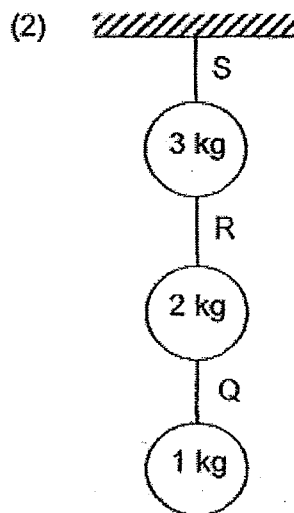
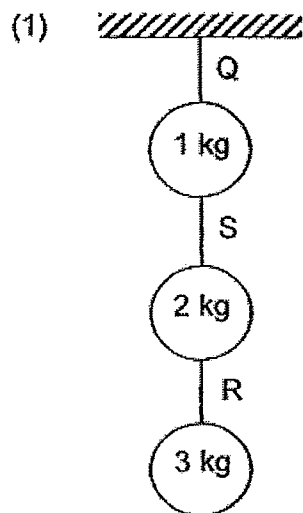
- (1) Metal is stronger than wood.
- (2) Metal is more flexible than wood.
- (3) Metal is a better conductor of heat than wood.
- (4) Metal is a poorer conductor of heat than wood.

17. Annie has three types of string; Q, R, and S. The diagram shows the maximum weight that each string can hold without breaking.

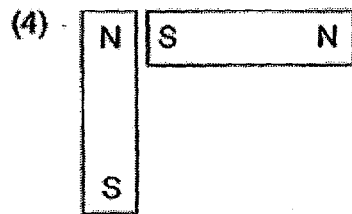
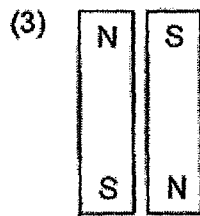
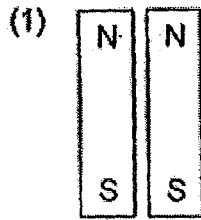


She is given three weights and she wants to hang the weights on the strings without breaking any of the strings.

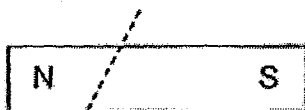
Which of the following arrangements would be possible?



18. In which of the following will the two magnets push each other away?



19. The diagram below shows a magnet that is broken into two pieces.



original magnet



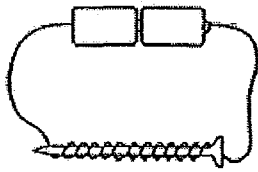
part A

part B

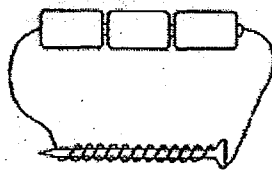
Which of the following statements about parts A and B is definitely true?

- (1) Part A will be a stronger magnet than part B.
- (2) Part B will be a stronger magnet than part A.
- (3) Parts A and B will each have a North pole and a South pole.
- (4) Part A will have two North poles and part B will have two South poles.

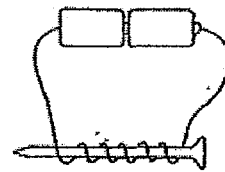
20. Guohui constructed three electromagnets, E, F and G, as shown below. He used identical iron nails and batteries for three electro-magnets.



E
(12 coils around the nail)



F
(12 coils around the nail)

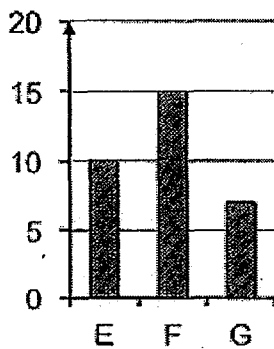


G
(5 coils around the nail)

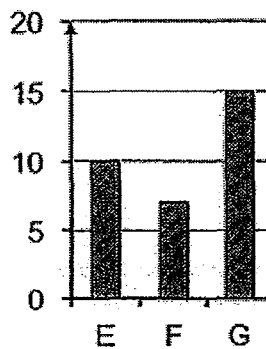
He tested the strength of the electromagnets by counting the number of steel pins each iron nail can pick up.

Which graph correctly represents the number of steel pins picked up by each of the electromagnets?

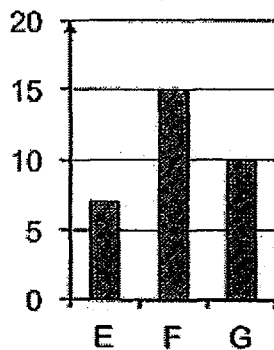
(1) Number of pins



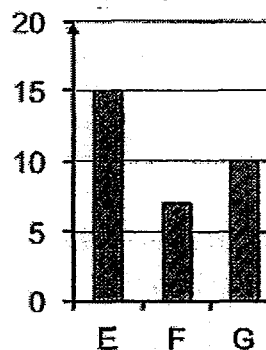
(2) Number of pins



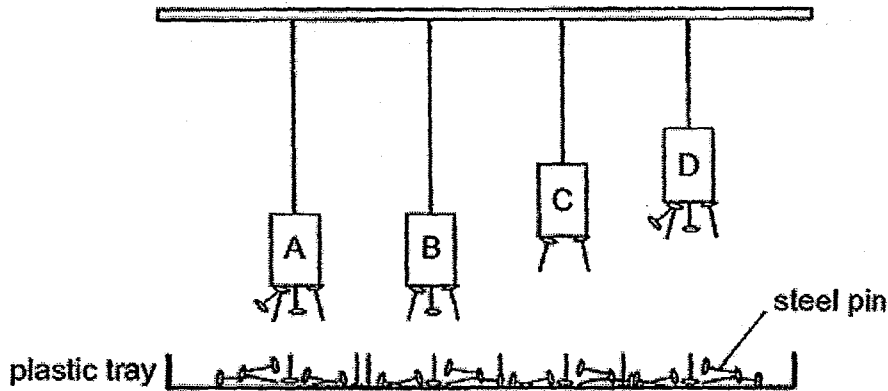
(3) Number of pins



(4) Number of pins



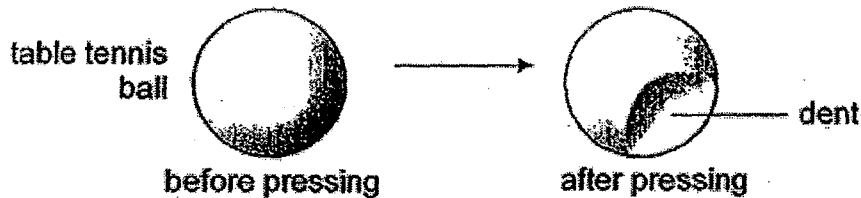
21. Jay wanted to compare the strength of four magnets, A, B, C and D. The magnets were of the same size. He set up the experiment below and observe the number of steel pins that were attracted by each magnet.



Which of the following is correct?

| | Strongest magnet | Weakest magnet |
|-----|------------------|----------------------|
| (1) | A | C |
| (2) | A | Not possible to tell |
| (3) | D | C |
| (4) | D | Not possible to tell |

22. A table tennis ball is made of plastic and filled with air. Ahmad pressed a table tennis ball and made a dent on it as shown below.



Which of the following statements about the table-tennis ball is/are true?

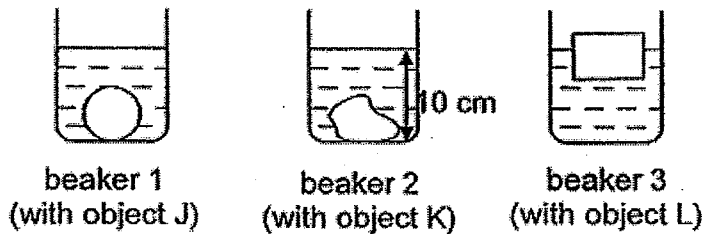
- A : The table-tennis ball did not have a definite shape.
- B : The mass of the ball decreased after it was dented.
- C : The volume of the ball decreased after it was dented.

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

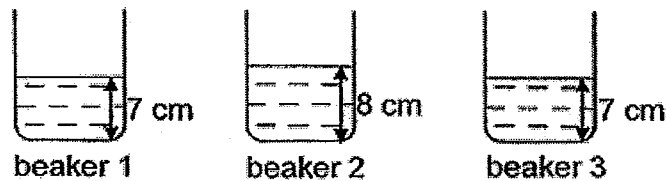
23. Which of the following properties is true for both air and a pen?

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

24. Ahmad placed three objects, J, K and L, into three identical beakers as shown below. He added water to each of the beakers and the water levels in the three beakers were the same.



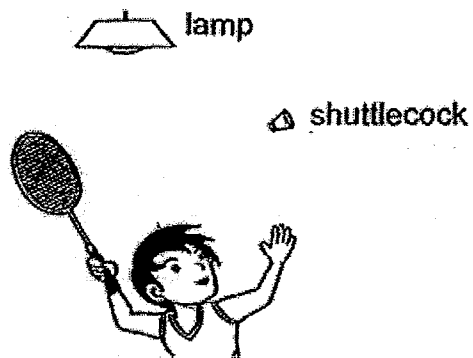
He removed the objects from the water. The diagram below shows the water level in the three beakers.



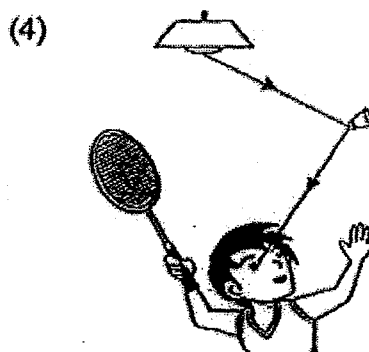
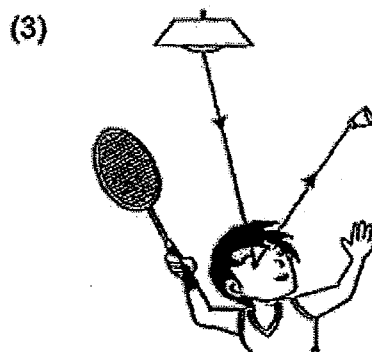
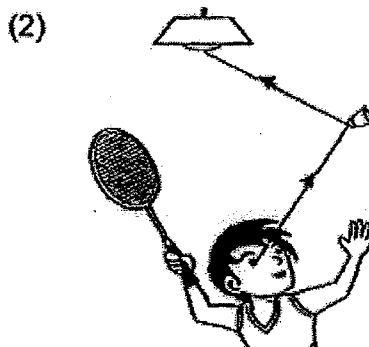
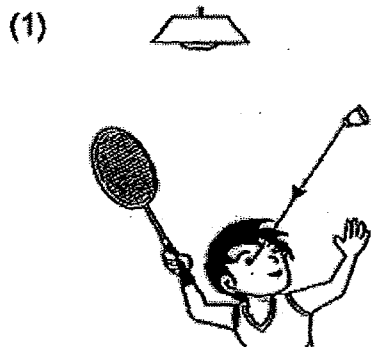
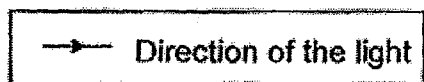
Which of the following shows the correct order of the objects starting from the smallest volume to the greatest volume?

- (1) K , J , L
- (2) K , L , J
- (3) J , L , K
- (4) L , J , K

25. Study the diagram below.

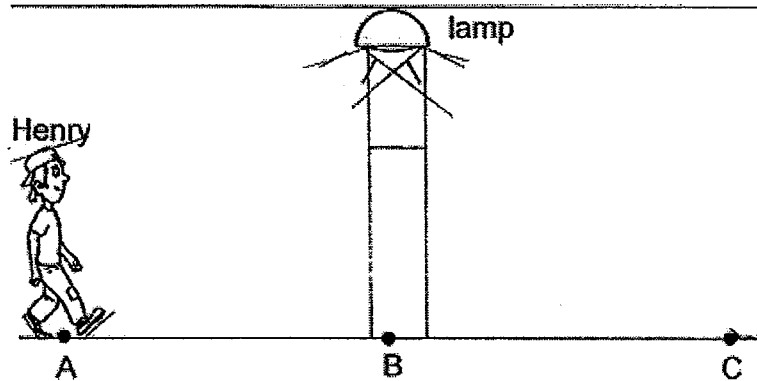


Which of the following diagrams correctly shows the path of light that makes it possible for the boy to see the shuttlecock?



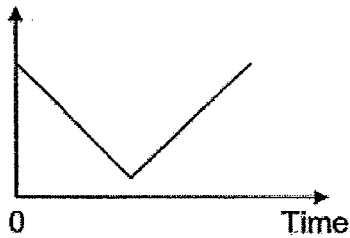
26. Henry walked in a straight line and at the same speed from A to C as shown below.

At B, he was directly under the lamp. The distance between A and B is the same as the distance between B and C.

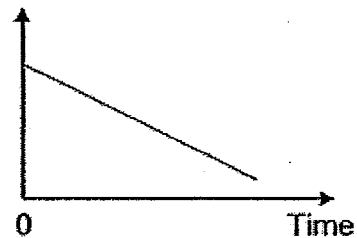


Which of the following graphs correctly shows how the length of Henry's shadow on the ground changed during his walk from A to B?

(1) Length of shadow



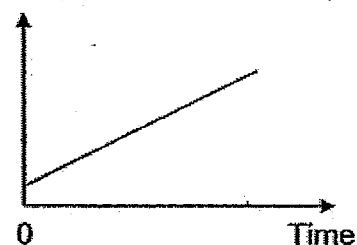
(2) Length of shadow



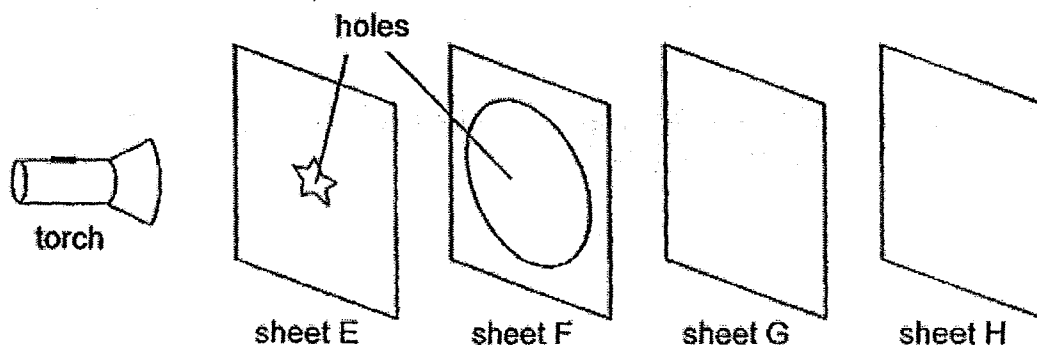
(3) Length of shadow



(4) Length of shadow



27. The experiment shown below is carried out in a dark room.



Sheets E, F, G and H are arranged in a straight line. When the torch is switched on, a bright star patch is seen on sheet H only.

Which of the following correctly describes the properties of the materials that the four sheets are made of?

| | Allows light to pass through | Does not allow light to pass through | Not possible to tell |
|-----|------------------------------|--------------------------------------|----------------------|
| (1) | G | E and H | F |
| (2) | F and G | E and H | - |
| (3) | F and H | E | G |
| (4) | E, F and G | H | - |

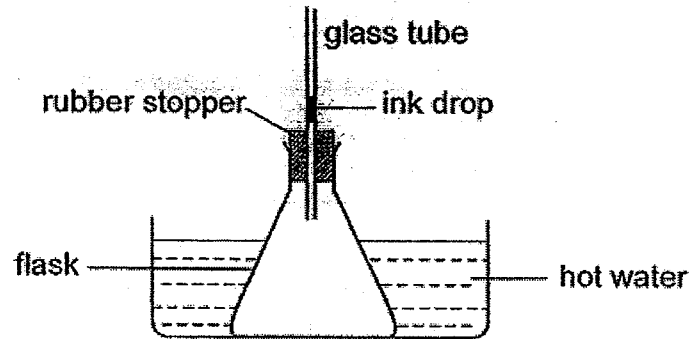
28. Siti places a metal spoon in a cup of hot tea.



The spoon becomes hot after a while.
Which of the following explains this?

- (1) The cup loses heat to the hot tea.
- (2) The spoon loses heat to the hot tea.
- (3) The hot tea gains heat from the spoon.
- (4) The spoon gains heat from the hot tea.

29. A glass tube containing an ink drop was inserted into a flask. The flask was placed into a basin of hot water as shown below.

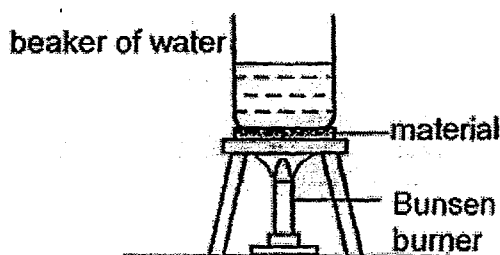


When the flask was placed in the basin of hot water, the ink drop in the glass tube moved down slightly first before moving up.

This was because _____.

- (1) the flask expanded first and then contracted
- (2) the air in the flask expanded first then contracted
- (3) the flask expanded before the air in the flask expanded
- (4) the air in the flask expanded before the flask expanded

30. Selvi conducted an experiment using the set-up shown below.



Selvi poured different volume of tap water into three identical beakers. She heated the beakers of water above different materials, P, Q and R, and recorded the time taken for the water to boil.

Her results are shown in the table below.

| Material | How well the material conducts heat | Time taken for the water to start boiling (min) |
|----------|-------------------------------------|---|
| P | poor | 15 |
| Q | very good | 15 |
| R | good | 15 |

Which of the following most likely shows the volume of water Selvi poured into the beakers?

| Volume of water (cm ³) in the beaker heated above | | | |
|---|------------|------------|------------|
| | Material P | Material Q | Material R |
| (1) | 100 | 200 | 300 |
| (2) | 300 | 100 | 200 |
| (3) | 100 | 300 | 200 |
| (4) | 300 | 200 | 100 |

End of Section A

Pei Chun Public School
Semestral Assessment 2 – 2015
Science
Primary 4

Name : _____ ()

Class : Pri. 4 ()

Date : 29 Oct 2015

Time : 1 h 30 min

Science Teacher : _____

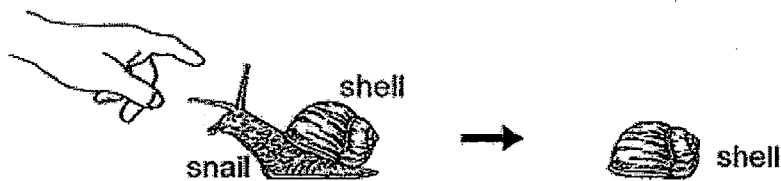
Parent's signature: _____

| | |
|-----------|-----|
| Section A | 60 |
| Section B | 40 |
| Total | 100 |

Section B (40 marks)

For questions 31 to 44, write your answers in the spaces provided.

31. Guohua found a snail in the garden and he touched it.



a) Fill in each blank with a suitable word.

i) The snail hid itself in its shell when touched.

This shows that the snail is a living thing as it can _____ . [1]

ii) The snail needs food, water and _____ to stay alive. [1]

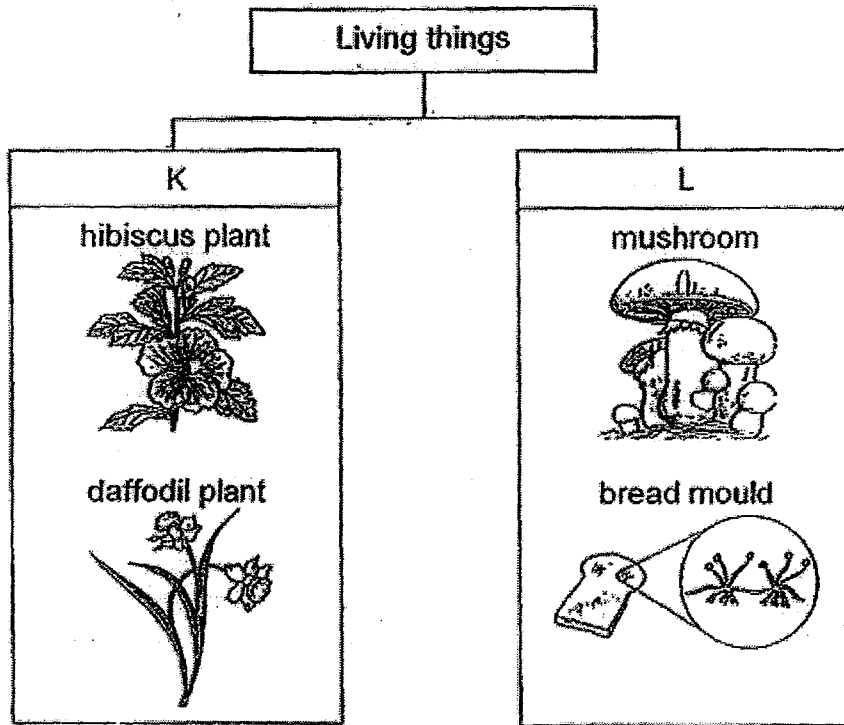
b) The table below shows how some animals can be grouped.

| | Has a shell | Does not have a shell |
|--------------------|-------------|-----------------------|
| Has legs | E | G |
| Does not have legs | F | H |

Which group, E, F, G or H, does the snail belong to?

[1]

32. Study the classification chart below.



a) Choose the correct words from the box to give suitable headings for K and L.

[2]

bacteria fungi flowering plants non-flowering plants

K: _____

L: _____

b) State how the living things in groups K and L reproduce.

[1]

K: _____

L: _____

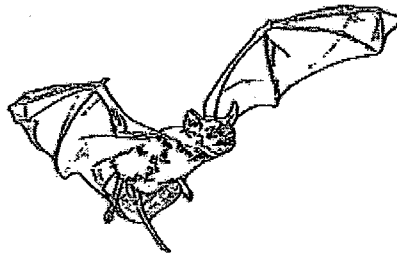
33. The following table gives information on five animals, P, Q, R, S and T, based on three characteristics. A tick (✓) shows that the animal has the characteristic.

| Characteristic | P | Q | R | S | T |
|----------------|---|---|---|---|---|
| Can fly | | ✓ | ✓ | ✓ | |
| Lays eggs | ✓ | ✓ | | ✓ | ✓ |
| Has feathers | ✓ | | | ✓ | |

- a) Based on the information given in the table, state two characteristics of animal T. [1]

- b) Which of the animals, P, Q, R, S or T, are birds? Give a reason for your answer. [1]

- c) The diagram below shows a bat.



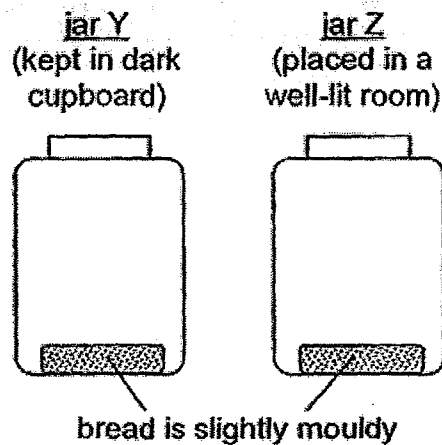
Match the bat to the correct letter (P, Q, R, S or T) in the table.

It is animal _____

[1]

34. Michael left two pieces of bread in two identical jars, Y and Z. He covered the jars to make sure air would not enter the jars and left the jars in different places.

The following diagrams show the results of the experiment after five days.



- a) Based on his experimental results, Michael concluded that bread mould do not need light to grow.

Is he correct? Circle your answer.

[1]

Yes / No / Cannot tell

- b) Give a reason for your answer in (a).

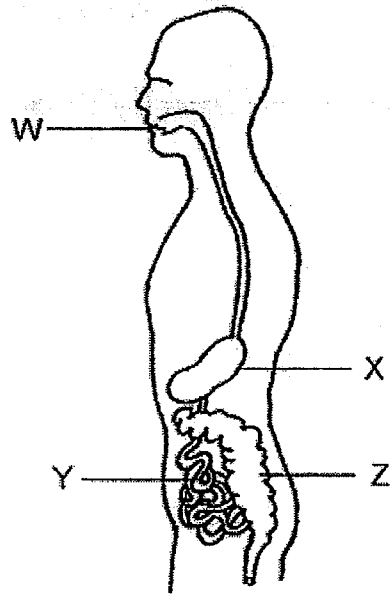
[1]

- c) A third piece of bread was heated in the oven and cooled. Michael placed the bread in another identical jar.

After 5 days, Michael did not observe any mould growing on the bread.
Give a reason for his observation.

[1]

35. The diagram below shows the human digestive system.



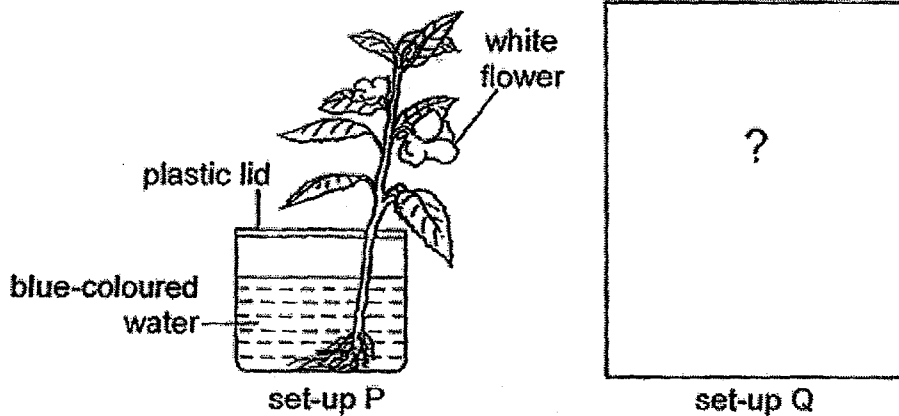
Where does digestion take place in the digestive system?
Put a tick (✓) in the correct boxes.

[2]

| Part | Does digestion take place in this part of the digestive system? | |
|------|---|----|
| | Yes | No |
| W | | |
| X | | |
| Y | | |
| Z | | |

36. Bala conducted an experiment to find out if the number of leaves on a plant would affect the amount of water taken in by the plant.

He put two plants in two identical containers of blue-coloured water. After a few hours, he compared the water level in the two containers.



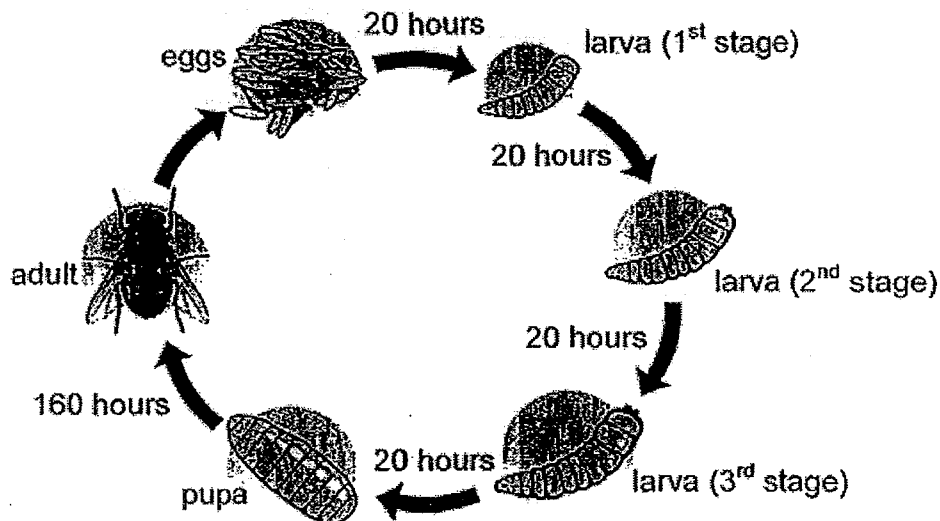
a) Which of the following variables should Bala keep the same for set-up Q to ensure a fair test? Put a tick (✓) in the correct boxes. [2]

| Variable | Kept the same |
|--|--------------------------|
| Type of plants used | <input type="checkbox"/> |
| Number of leaves on the plant | <input type="checkbox"/> |
| Water level in the containers at the start of the experiment | <input type="checkbox"/> |
| Water level in the containers at the end of the experiment | <input type="checkbox"/> |

b) At the end of the experiment, Bala observed that the flowers of the plant in set-up P turned blue.

State a function of the plant stem that explains Bala's observation. [1]

37. When an animal dies, insect X lays eggs on the dead animal. Scientists studied the young of insect X on the dead animal to estimate how long ago the animal had died. The diagram below shows the life cycle of insect X at 30°C.



A dead animal was found in a room. The temperature in the room was 30°C. The table below shows the number of larvae and pupae found on the dead animal.

| | larva (1 st stage) | larva (2 nd stage) | larva (3 rd stage) | pupa |
|--------------------------------|-------------------------------|-------------------------------|-------------------------------|------|
| Number of larvae / pupae found | 2 | 6 | 15 | 0 |

- a) Based on the information given, how long had the animal been dead before it was found? Choose your answer by ticking (✓) in the box. [1]

45 hours 65 hours 85 hours

- b) A scientist studied the effect of surrounding temperature on the life cycle of insect X. His findings are shown below.

| Temperature (°C) | Number of days for one complete life cycle |
|------------------|--|
| 20 | 22 |
| 25 | 17 |
| 30 | 10 |
| 35 | 8 |

Based on his findings, how does the temperature affect the length of the life cycle of insect X? [1]

38. ^{Kyan}Ravi prepared six set-ups to study the conditions needed for germination. He used seeds from a plant and placed ten seeds in each set-up.

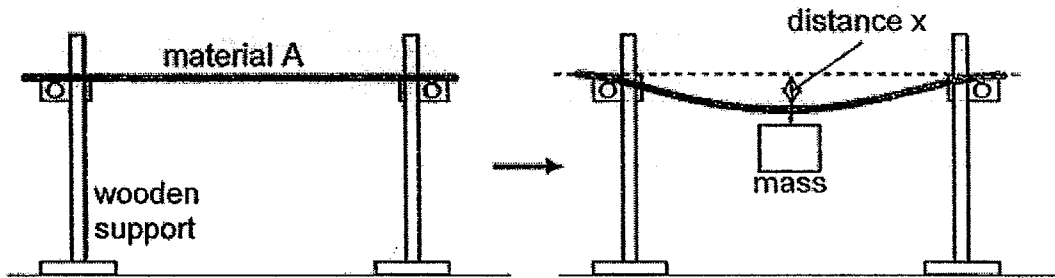
The set-ups were placed under the conditions as shown below.

Key ✓ : present x : absent

| Set-up | Conditions | | | |
|--------|------------|-----|-------|------------------|
| | water | air | light | temperature (°C) |
| A | ✓ | ✓ | x | 30 |
| B | ✓ | x | ✓ | 30 |
| C | ✓ | ✓ | ✓ | 30 |
| D | x | ✓ | x | 5 |
| E | x | ✓ | ✓ | 5 |
| F | ✓ | ✓ | ✓ | 5 |

- a) Fill in each blank with a suitable letter (A, B, C, D, E or F). You may use each letter more than once.
- i) Ryan should use set-ups _____ and _____ to study if seeds need warmth to germinate. [1]
- ii) Ryan should use set-ups _____ and _____ to study if seeds need light to germinate. [1]
- b) In which of the set-ups, A, B, C, D, E or F, would the seeds most likely to germinate? [1]
-

39. Junhao carried out an experiment on material A using the set-up shown below. He measure the distance, x , at the middle of the rod after adding each mass.



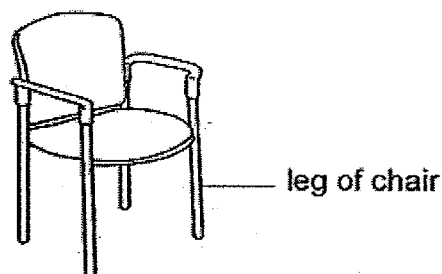
He repeated the experiment using materials B and C of different materials but of the same length and thickness. His results are shown below.

| Material | Mass hung on rod (kg) | Distance x (cm) |
|----------|-----------------------|-------------------|
| A | 20 | 9 |
| B | 20 | 1 |
| C | 20 | 5 |

- a) Name the property of material that Junhao tested in his experiment.

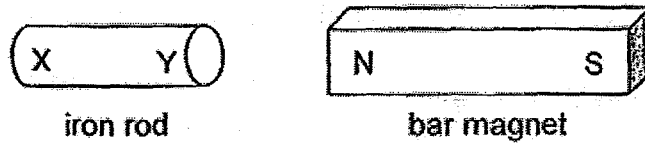
[1]

- b) The diagram below shows a chair.

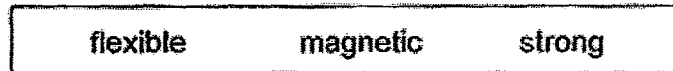


Based on his results, which material, A, B or C, is most suitable for making the legs of the chair? Give a reason for your answer. [1]

40. Suping places a bar magnet near an iron rod as shown below. She observed that the iron rod moved towards the magnet.



- a) Choose the correct word from the box to answer the question below.

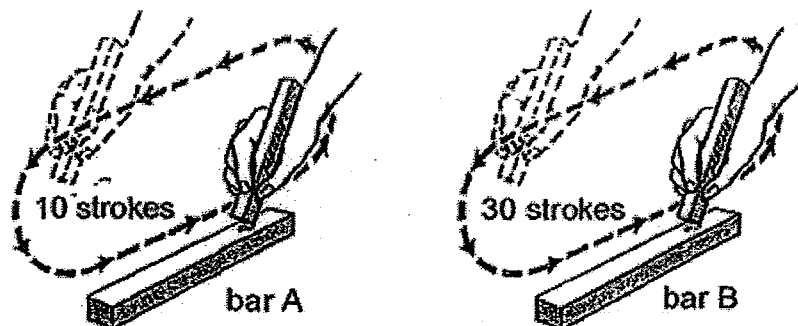


Suping's observation shows that iron is a _____ material. [1]

- b) Suping wanted to find out if the iron rod has been magnetised.

Using only the bar magnet and the iron rod, what should she do to conclude if the iron rod is a magnet? Explain your answer. [2]

- c) Suping stroked two similar iron bars, A and B, with the same magnet as shown in the diagram below.



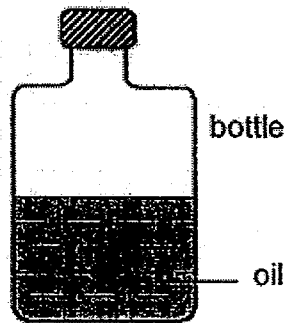
Both bars became magnets and were used to attract similar pins:

Circle the correct answer below.

[1]

Bar A attracted (less pins than / the same number of pins as / more pins than) bar B.

41. The diagram below shows a bottle of cooking oil.

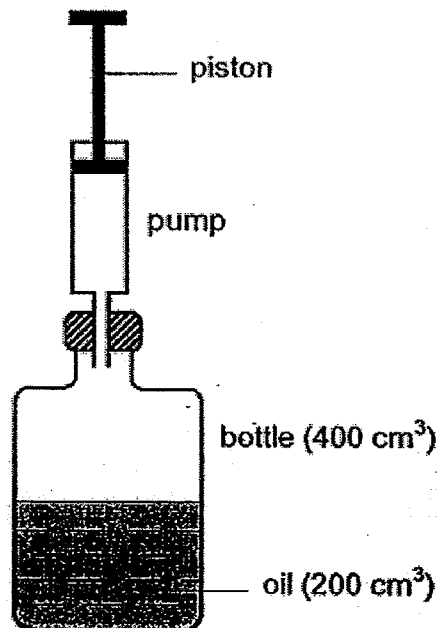


a) Complete the sentences to state if the parts are *solid*, *liquid* or *gas*.

i) The bottle is a _____ [1]

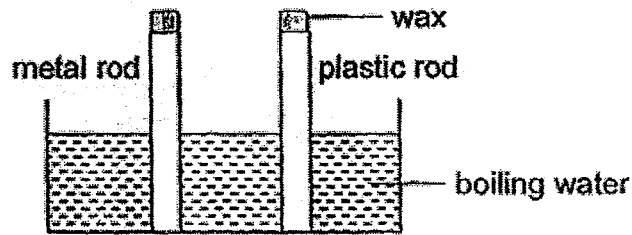
ii) Oil is a _____ [1]

b) The diagram below shows a pump connected to the bottle. The capacity of the bottle is 400 cm^3 . The bottle contains 200 cm^3 of oil.



When the piston is pushed in completely, 50 cm^3 of air is forced into the bottle.
What will be the final volume of air in the bottle? [1]

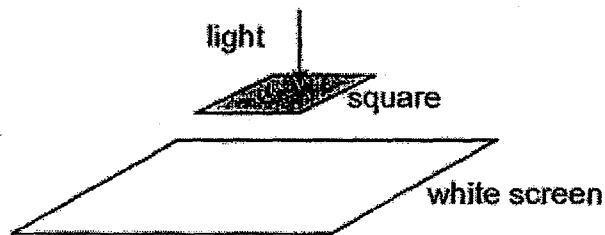
42. James placed a metal rod and a plastic rod in a tank of boiling water as shown below. Equal amount of wax were put on both rods.



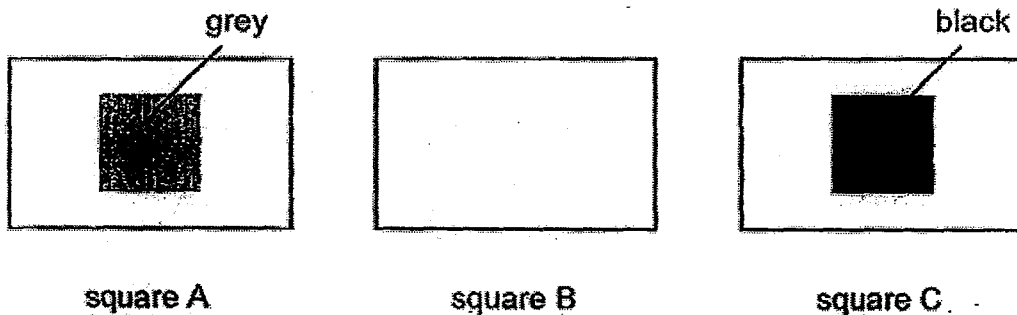
What would he observe and why?
Fill in each blank with a suitable word.

The wax on the metal rod melted _____ than the wax on the plastic rod, as metal is a _____ conductor of heat than plastic. [2]

43. Suresh had three squares made of different types of plastic.



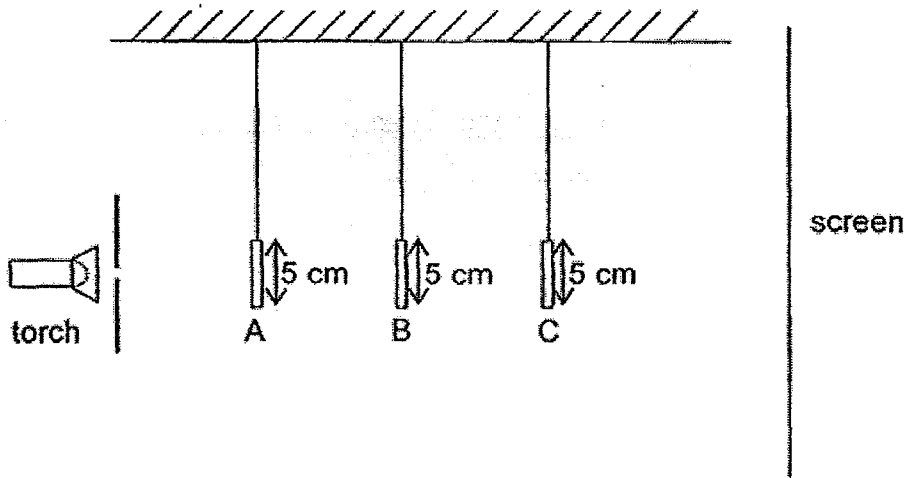
When he placed each square directly under a light source in a dark room, the following were formed on the white screen.



- a) Indicate the properties of the materials that squares A, B and C are made of in the table below. Write the letters (A, B and C) in the correct boxes. [1]

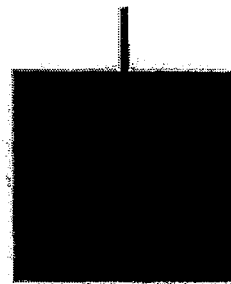
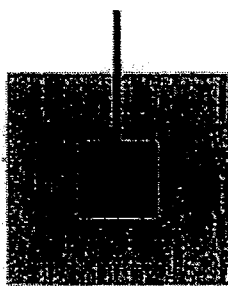
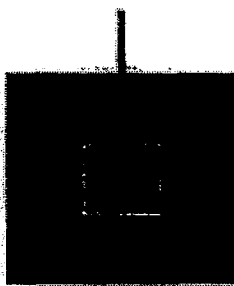
| | Does not allow light to pass through | Allows some of the light to pass through | Allows most of the light to pass through |
|--------|--------------------------------------|--|--|
| Square | | | |

b) Suresh hung the squares at different distances from the torch as shown below.



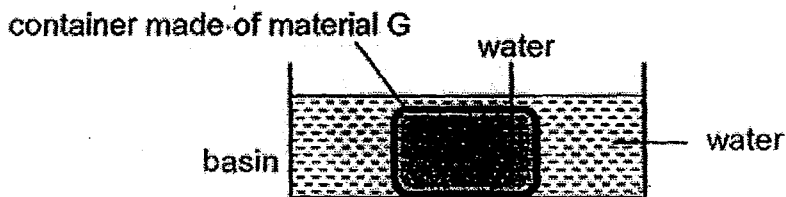
Which of the following shadows would be formed on the screen?
Choose your answer by ticking (✓) in the box.

[1]

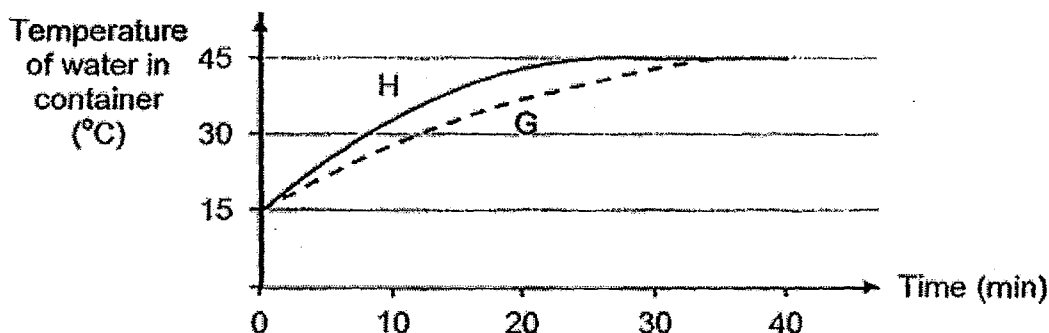


c) How would the size of the shadow formed on the screen change if Suresh moves the torch further away from square A? [1]

44. Ali conducted an experiment using the set-up shown below.



He measured the temperature of the water in the container over a period of time. He repeated the experiment using a container made of material H. His results are shown in the graph below.



a) Based on the graph, was the temperature of the water in the containers higher or lower than the temperature of the water in the basin?
Explain your answer. [1]

b) What was the temperature of the water in the containers at the start of the experiment? [1]

c) Based on the graph, which material, G or H, is a better conductor of heat?
Give a reason for your answer. [1]

d) Ali wanted to bring hot food and cold drinks for a school trip. He wanted to keep the food hot and the drinks cold.
Which material, G or H, would be more suitable for the containers? [1]

i) material for container carrying hot food : _____

ii) material for container carrying cold drinks : _____

End of Section B

EXAM PAPER 2015

SCHOOL : PEI CHUN

SUBJECT : P4 SCIENCE

TERM : SA2

| | | | | | | | | | |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 |
| 1 | 3 | 4 | 2 | 4 | 2 | 1 | 3 | 3 | 1 |
| Q11 | Q12 | Q13 | Q14 | Q15 | Q16 | Q17 | Q18 | Q19 | Q20 |
| 2 | 3 | 3 | 3 | 2 | 3 | 2 | 1 | 3 | 1 |
| Q21 | Q22 | Q23 | Q24 | Q25 | Q26 | Q27 | Q28 | Q29 | Q30 |
| 4 | 2 | 2 | 1 | 4 | 2 | 1 | 4 | 3 | 3 |

31) ai) repond aii) air

b) Group F

32) a) K: flowering plants

L: fungi

b) K: through seeds

L: reproduce by spores

33) a) Animal T cannot fly and reproduces by laying eggs.

b) Animals S and P. They have feathers

c) R

34) a) Yes

b) Mould grew on the bread in jar Y

c) Moisture in the bread has been removed.

35) W: yes

X: yes

Y: yes

Z: no

36) a) Tick only: Type of plants used & Water level in the containers at the end of the experiment

b) The steam transport water from the roots to the flower.

37) a) 65 hours

b) As the temperature increases, the length of the life cycle of insect X decreases.

38) ai) C and F

aii) A and C

b) In set-ups C and A.

39) a) Flexibility

b) Material B. It bent the least.

40) a) magnetic

b) Bring the north pole of the magnet to end X of the rod end. If it repelled by the magnet, the iron rod is a magnet.

c) less pins than

41) ai) solid

aii) liquid

b) It will be 200 cm^3

42) faster, better

43) a) C, A, B

b) *tick the 2nd box

c) The shadow formed will be smaller.

44) a) The water in the container was lower. It is because the water temperature in the container is gaining heat from the water in the basin and the temperature increased.

b) 15°C

c) Material H. The temperature of the water in the container made of H is increasing faster.

di) G

dii) G

