

METHODIST GIRLS' SCHOOL  
Founded in 1887



END-OF-YEAR EXAMINATION 2016  
PRIMARY 3  
SCIENCE  
BOOKLET A

Total Time for Booklets A and B: 1 hour 30 minutes

**INSTRUCTIONS TO CANDIDATES**

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

Shade your answers in the Optical Answer Sheet (OAS) provided.

Name: \_\_\_\_\_ ( )

Class: Primary 3. \_\_\_\_\_

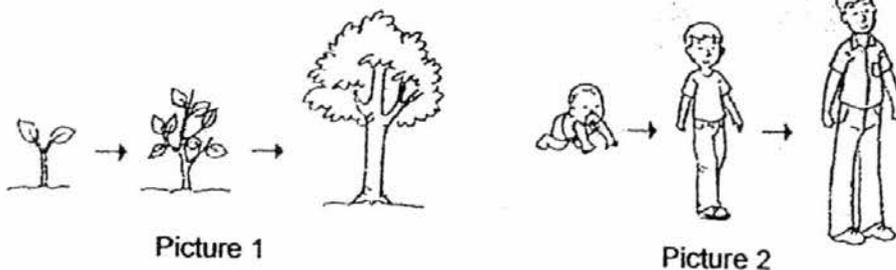
Date : 28 October 2016

This booklet consists of 21 printed pages including this page.

For each question from 1 to 28 four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval on the Optical Answer Sheet (OAS).

[56 marks]

1. Study the pictures below.



Which characteristic of living things do they show?

- (1) Living things grow.
  - (2) Living things reproduce their own kind.
  - (3) Living things respond to changes around them.
  - (4) Living things need air, water and food to stay alive.
2. Tim poured some oil into a fish tank as shown below.

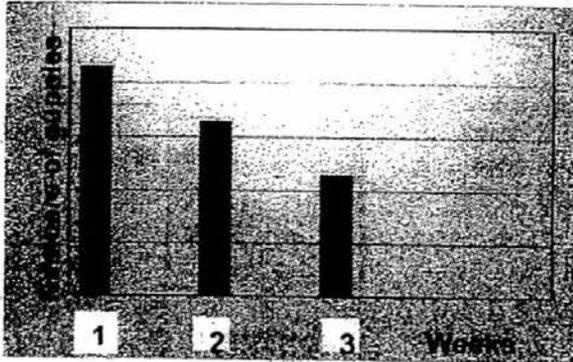


What will Tim observe about the fish after a day?

- (1) The fish will reproduce.
- (2) The fish will respond by swimming faster.
- (3) The fish will die as there will not be enough oxygen.
- (4) The fish will grow bigger as the oil becomes food for the fish.

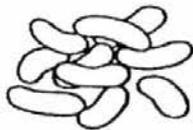
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3. Study the bar chart below carefully.

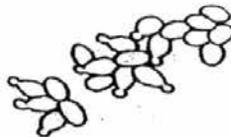


The changes in the number of guppies over time shows that living things

- 
- (1) die  
 (2) grow  
 (3) reproduce  
 (4) move by itself X
4. The picture below shows two organisms.



Bacteria



Yeast

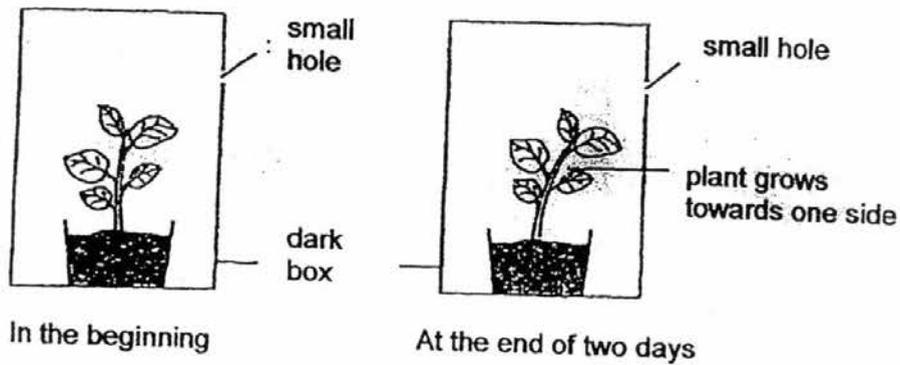
In what ways are both organisms similar?

- A They cause food to decay.  
 B They can make their own food.  
 C They are unable to move by themselves.  
 D They cannot be seen without the help of a microscope.

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

(Go on to the next page)

5. Naomi bought a pot of plant and placed it in an enclosed box which had a small hole. She then placed the enclosed box in a garden. At the end of two days, she realised that her plant was growing towards the hole.



Which one of the following statements explains why her plant was growing towards the hole?

- (1) It did not receive air.
  - (2) It was not watered daily.
  - (3) It was not given fertilizer.
  - (4) It did not receive enough sunlight.
6. Three pupils made a few statements about animals with a 4- stage life cycle.

Abigail: The young does not look like the adult.

Bernard: During its larval stage, the organism does not feed at all. ✗

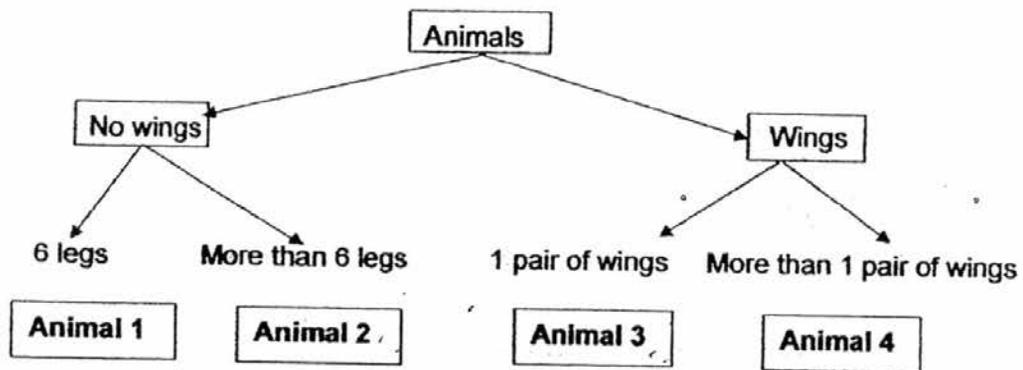
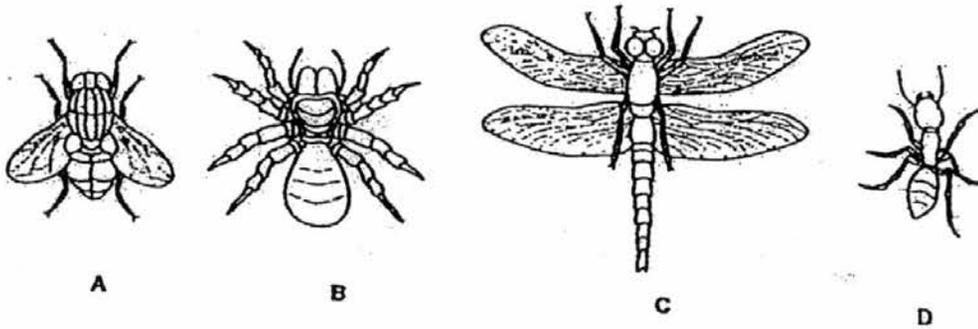
Cindy: All insects have a 4 - stage life cycle. ✗

Whose statement(s) is/are incorrect?

- (1) Abigail only
- (2) Bernard only
- (3) Abigail and Cindy only
- (4) Bernard and Cindy only

(Go on to the next page)

7. The picture below shows four different animals. The animals are classified using the chart below.



Which one of the following options is correct?

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

(Go on to the next page)

8. Four pupils in a class made the following comments about animals.

Melody: All mammals have fur or hair.

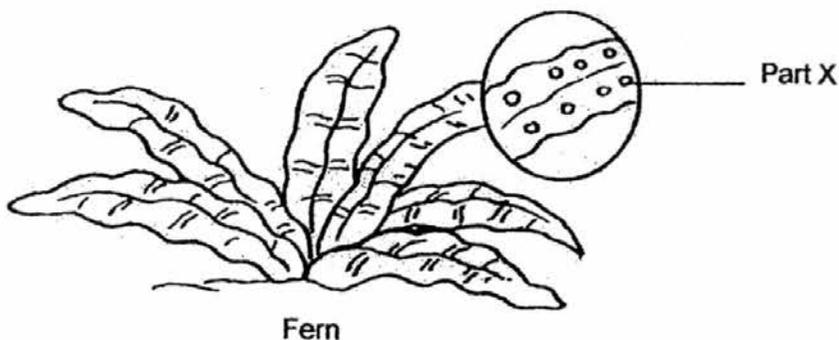
Keith: All birds have a beak, feathers and can fly.

Lyn: Some animals lay eggs while others give birth to young alive.

Joel: Outer coverings such as feathers and scales protect animals from injuries.

Whose statements are correct?

- (1) Keith and Joel only
  - (2) Lyn and Joel only
  - (3) Melody, Lyn and Joel only
  - (4) Melody, Keith, Lyn and Joel
9. Part X can be found on the underside of the leaf. It can be seen using a magnifying glass as shown in the diagram below.

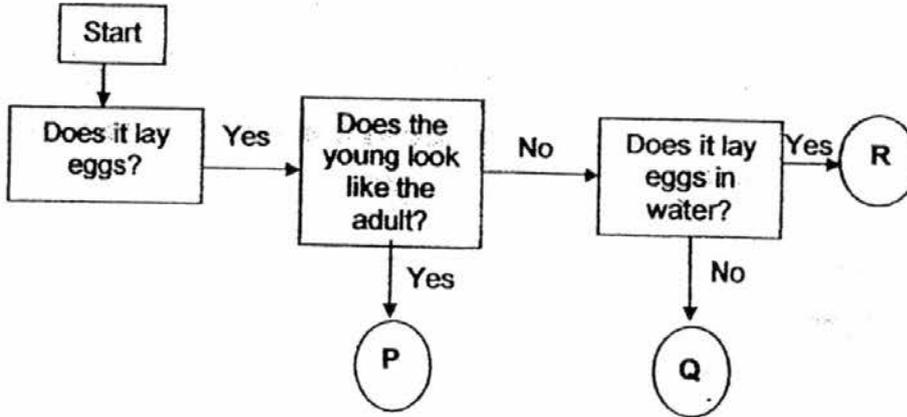


What is the function of Part X?

- (1) It is to reproduce a new fern.
- (2) It is for the fern to take in air.
- (3) It is to help the fern make food.
- (4) It is to protect the fern from animals.

(Go on to the next page)

10. Study the flowchart below carefully. The letters P, Q and R, represent three different animals.

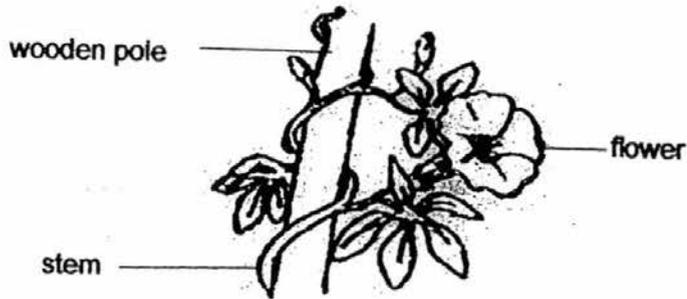


Based on the flowchart, what could animals P, Q and R be?

	Animal P	Animal Q	Animal R
(1)	Chicken	Butterfly	Mosquito
(2)	Butterfly	Chicken	Mosquito
(3)	Mosquito	Chicken	Butterfly
(4)	Chicken	Mosquito	Butterfly

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11. The diagram below shows a morning glory plant growing in the garden.



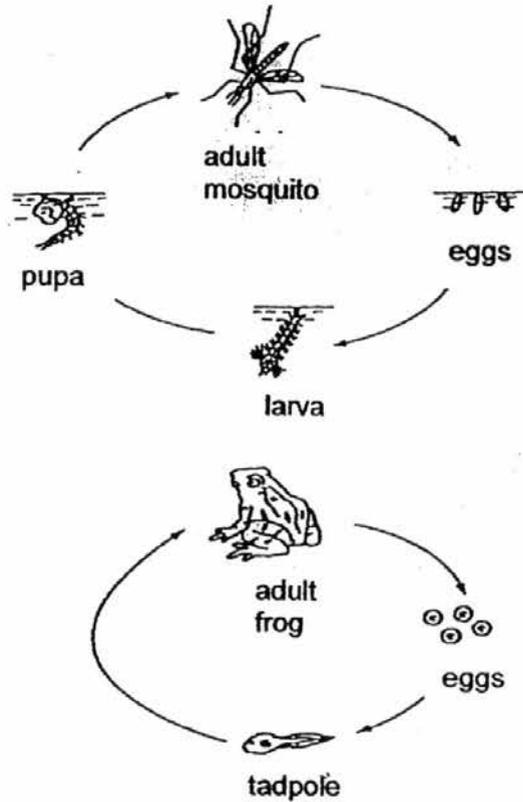
Which of the following statements are true about the morning glory plant?

- A Its flowers grow singly.
- B It reproduces from spores.
- C The stem is strong and holds the plant upright.
- D The stem climbs up the wooden pole to get more sunlight.

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

(Go on to the next page)

12. The diagram below shows the life cycles of a mosquito and a frog.



How are the two life cycles similar?

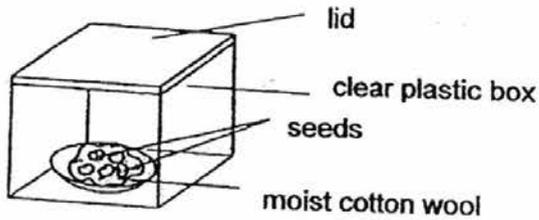
- A The young do not resemble the adult.
- B Both adult stages live on land and in water.
- C At least two stages of the life cycle are spent in water.
- D They have the same number of stages in their life cycles.

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

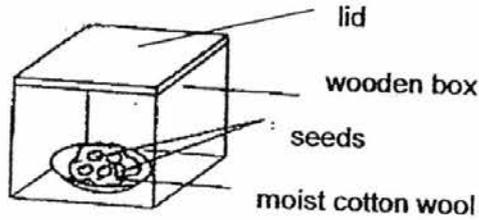
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13. Mrs Lee prepared four different set-ups to teach her class about the conditions needed for seeds to germinate. She placed an equal number of seeds in each set-up as shown below.

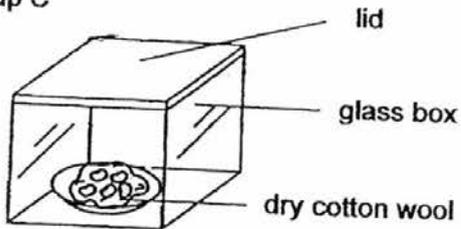
Set – up A



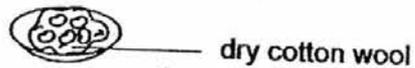
Set – up B



Set – up C



Set – up D



In which of the following set-ups will Mrs Lee observe roots growing from the seed after a few days?

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

(Go on to the next page)

14. Jennifer wanted to find out if the amount of water affects the germination of seeds. She conducted the experiment using 4 similar set-ups, A, B, C and D.

Variables	A	B	C	D
Duration of experiment	5 days	5 days	5 days	3 days
Location	In the room	In the room	In the field	In the room
Number of seeds	10	10	20	10
Amount of water given daily (ml)	10	20	10	20
Amount of soil	500	500	500	300

Which two set-ups should Jennifer choose to ensure that the experiment is a fair test?

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

(Go on to the next page)

15. Justin is trapped on an island shown in the diagram below. He needs to build a boat to help him leave the island.

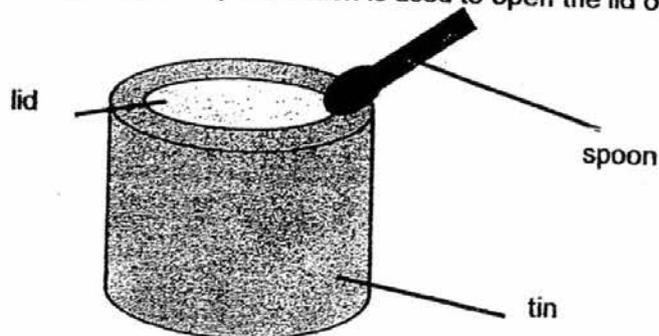


Which properties of the material should Justin consider when building his boat?

- A strength
- B flexibility
- C waterproof
- D ability to float or sink

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

16. The diagram below shows a spoon which is used to open the lid of a tin.

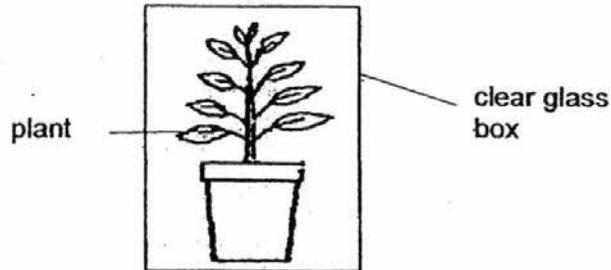


Which one of the following material is most suitable for the spoon to be made of?

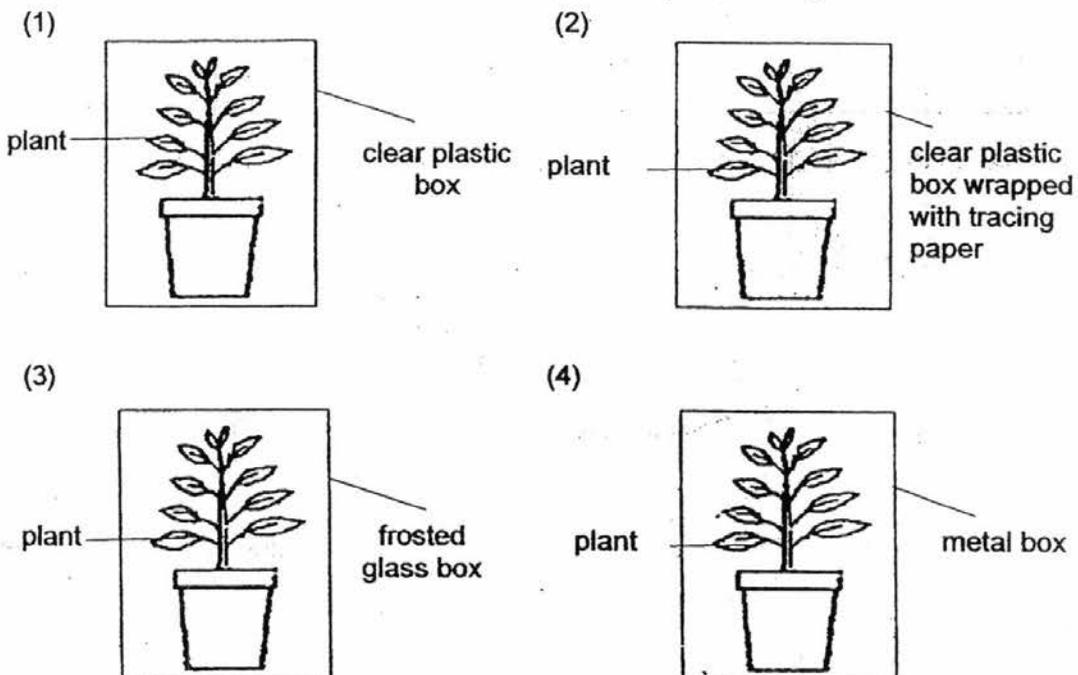
- (1) glass
- (2) metal
- (3) rubber
- (4) plastic

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17. Raj wanted to find out if the presence of light affects the growth of plants. He did a set-up as shown in the diagram below. He recorded the growth of the plants daily.

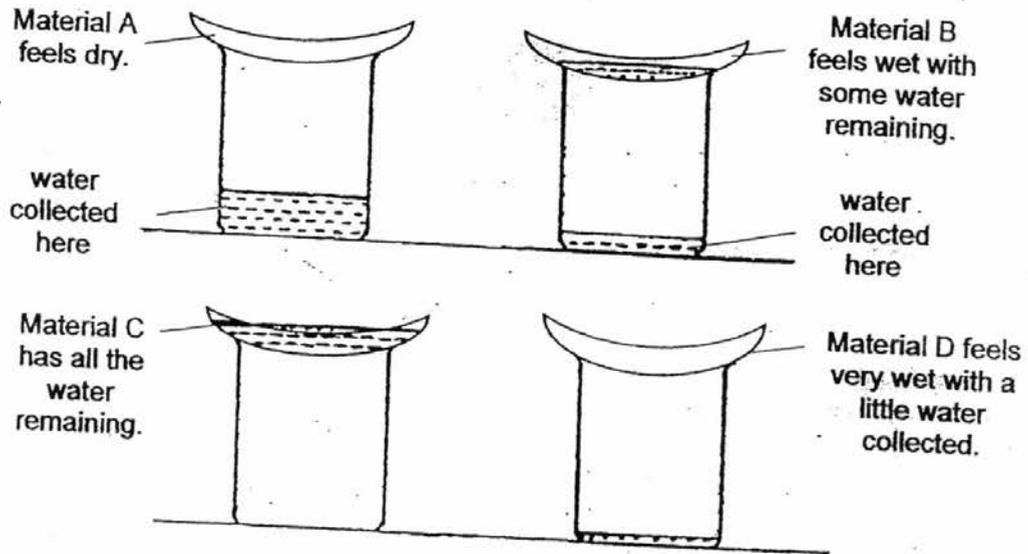


Which one of the following set-ups should he use as a comparison in order to conduct a fair test for his experiment?



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18. Sharon placed four sheets A, B, C and D, made of different materials over the mouth of four containers. She then poured an equal amount of water onto each material. The following diagram shows her observations.



Based on her observation, which one of the following materials is the best for making the canopy of an umbrella as shown in the diagram below?



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

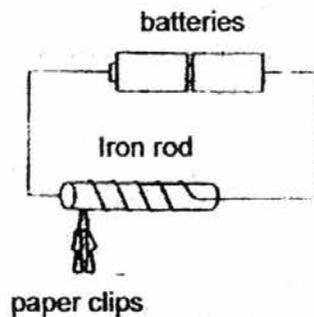
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19. Sam poured some water onto material X to test for one of its property as shown in the diagram below.



Which property is he trying to test on material X?

- (1) strength
  - (2) flexibility
  - (3) waterproof
  - (4) ability to float or sink in water
20. The diagram below shows an electromagnet setup.



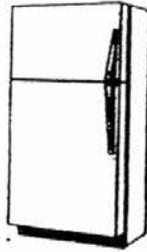
Which one of the following changes will enable the electromagnet to attract more paper clips?

- A Add another battery.
- B Change the iron rod to copper rod.
- C Increase the size of the paper clips used.
- D Increase the number of coils of wire around the iron rod.

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

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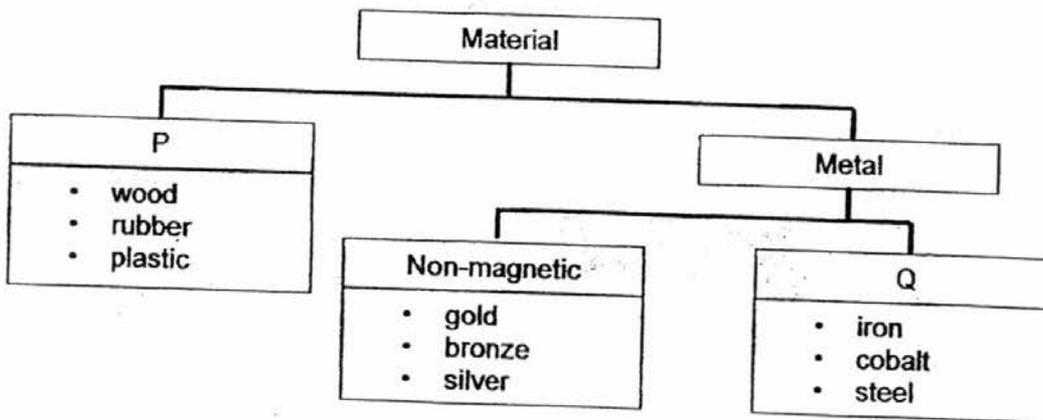
21. Ally placed a magnet on the door of the refrigerator as shown below and it dropped off immediately.



Which one of the following statements correctly explains why the magnet dropped?

- (1) The magnet has a crack on it.
- (2) The refrigerator door is made of aluminum.
- (3) The refrigerator door is too cold for the magnet.
- (4) The magnet lost its magnetism to the refrigerator door.

22. Study the classification table as shown below.



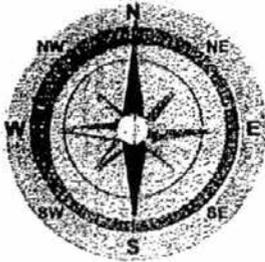
Which one of the following options best represents the headings, P and Q?

	P	Q
(1)	Non-magnetic	Metal
(2)	Non-metal	Strong
(3)	Non-magnetic	Magnetic
(4)	Non-metal	Magnetic

(Go on to the next page)

23. Which one of the following objects below does not make use of a magnet to work?

(1)



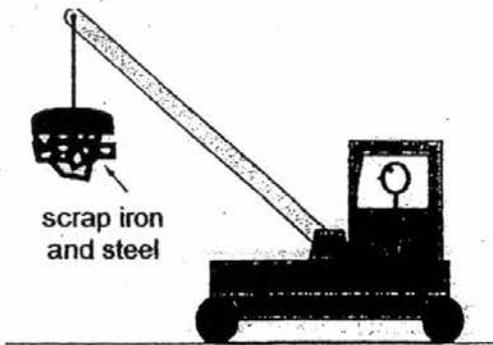
A compass

(2)



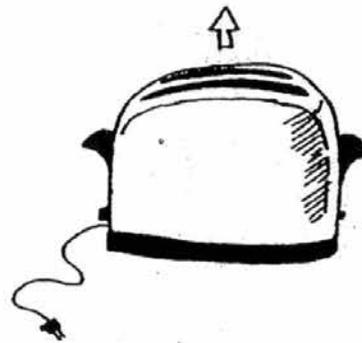
A 'floating' globe

(3)



A crane

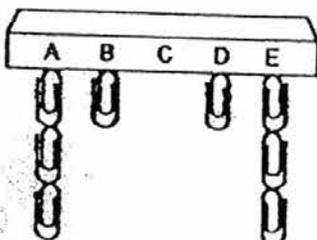
(4)



A toaster

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24. The diagram below shows the number of steel paper clips attracted to different positions of a bar magnet.



Position	A	B	C	D	E
Number of steel paper clips	3	1	0	1	3

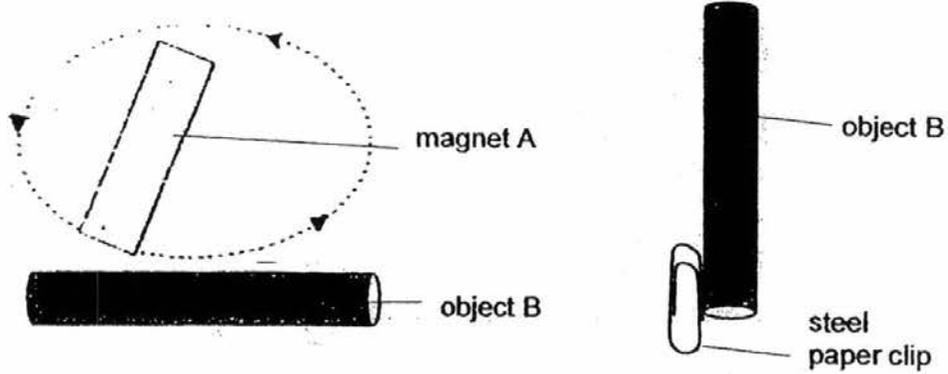
Based on the results, what can be concluded from the experiment?

- A The poles of the magnet have the strongest magnetic force.
- B The magnet made the steel paper clips into temporary magnets.
- C The magnet can attract the magnetic steel paper clips at any position.

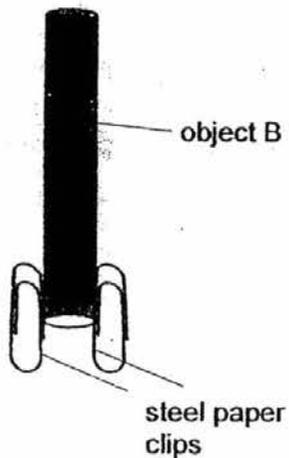
- (1) A only
- (2) A and B only
- (3) B and C only
- (4) A, B and C

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25. Alice used magnet A to stroke object B from one end to the other 20 times. After that, object B was able to attract a steel paper clip.



She then repeated the experiment by using magnet A to stroke object B for another 10 times. After that, object B was able to attract 1 more steel paper clip.



Which statement below best explains Alice's observation?

- (1) The magnetic force of magnet A was lost to object B.
- (2) Object B became a stronger magnet with greater number of strokes.
- (3) The magnetic force of object B increased with greater number of strokes.
- (4) The magnetic force from magnet A was transferred to the steel paper clips.

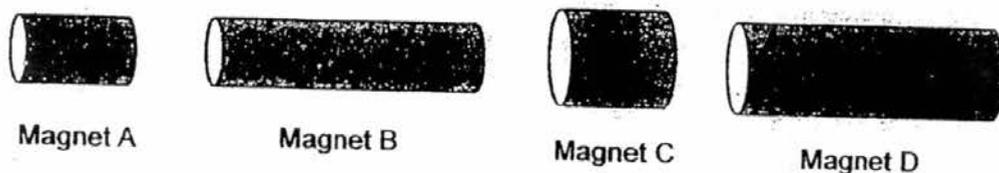
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26. Jane wanted to find out if object X is a magnet. She brought a magnet near object X.



Which must Jane observe to determine that Object X is a magnet?

- (1) The North pole of the magnet repels Object X.
  - (2) The North pole of the magnet attracts Object X.
  - (3) The magnet loses its magnetism when brought close to Object X.
  - (4) No reaction is observed when both the North pole and South pole of the magnet are brought close to Object X.
27. The diagram below shows four magnets, A, B, C and D. Siti placed each magnet into a box of paper clips.



The number of paper clips attracted by each magnet is recorded in the table as shown below.

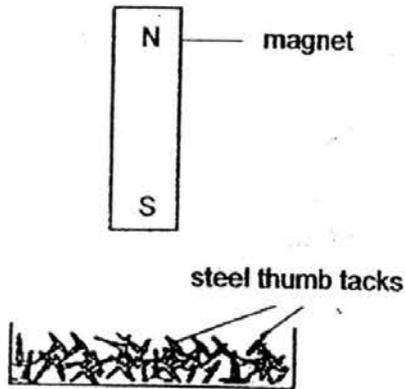
Magnet	A	B	C	D
Number of paper clips attached	14	10	12	8

Based on the results above, what could Betty conclude?

- (1) The largest magnet has the weakest magnetism.
- (2) The largest magnet has the strongest magnetism.
- (3) The magnetism of a magnet does not depend on its size.
- (4) The magnetism of a magnet depends largely on its thickness.

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28. Benny wanted to find out if the distance between the magnet and the steel thumb tacks affects the number of steel thumb tacks attracted. He then carried out an experiment as shown below, each time with the magnet at a different distance from the thumb tacks.



Which of the following variables should he keep the same to ensure that the experiment is fair?

- A The size of the steel thumb tacks.
- B The magnet used for the experiment.
- C The number of the steel thumb tacks left in the tray
- D The distance between the magnet and steel thumb tacks.

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

METHODIST GIRLS' SCHOOL

Founded in 1887



END-OF-YEAR EXAMINATION 2016

PRIMARY 3

SCIENCE

BOOKLET B

Total Time for Booklets A and B: 1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

Shade your answers in the Optical Answer Sheet (OAS) provided.

Name: \_\_\_\_\_ ( )

Class: Primary 3. \_\_\_\_\_

Date : 28 October 2016

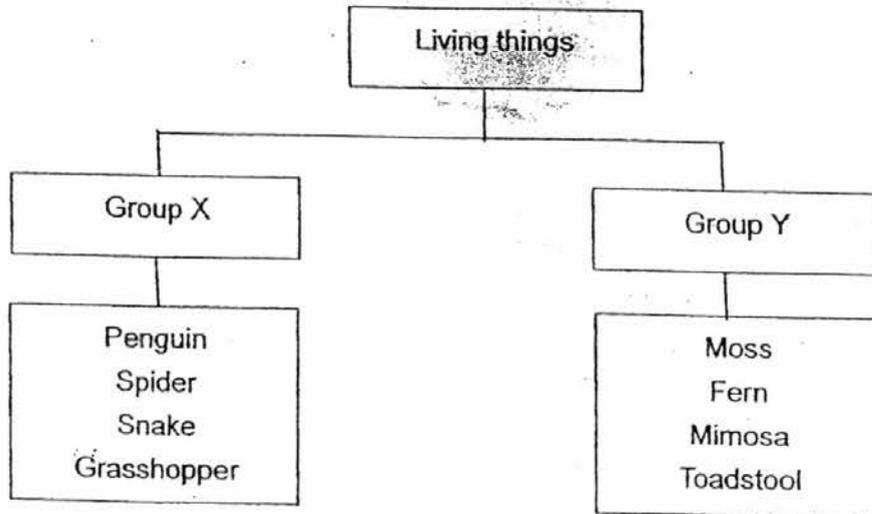
Booklet A	56
Booklet B	34
Total	90
Parent's Signature	

This booklet consists of 13 printed pages including this page.

For questions 29 to 38, write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part question.

[34 marks]

29. The classification chart below shows how some living things are classified into two groups, X and Y.



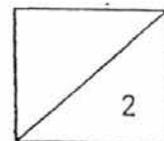
- (a) Based on the chart above, which one of the living things is **wrongly** grouped? Give a reason for your answer. [1]

\_\_\_\_\_

- (b) Name an organism which is in the same group as your answer in (a). Explain how it gets its food. [1]

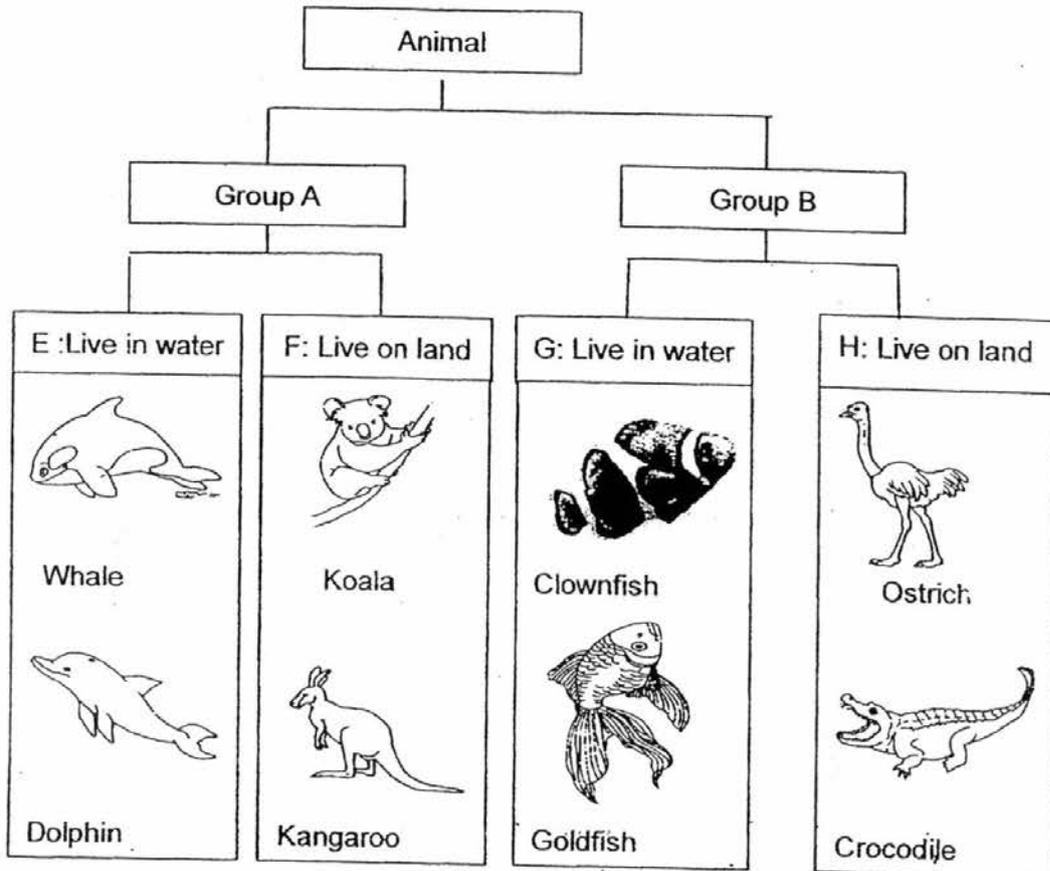
\_\_\_\_\_

\_\_\_\_\_



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30. The chart below shows how some animals are classified into Group A and B according to their methods of reproduction. The animals are further classified into Groups E, F, G and H according to where they live.



(a) Suggest suitable headings for Group A and B. [1]

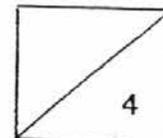
Group A: \_\_\_\_\_ Group B: \_\_\_\_\_

(b) Which animal group do the four animals in Group A belong to? [1]

\_\_\_\_\_

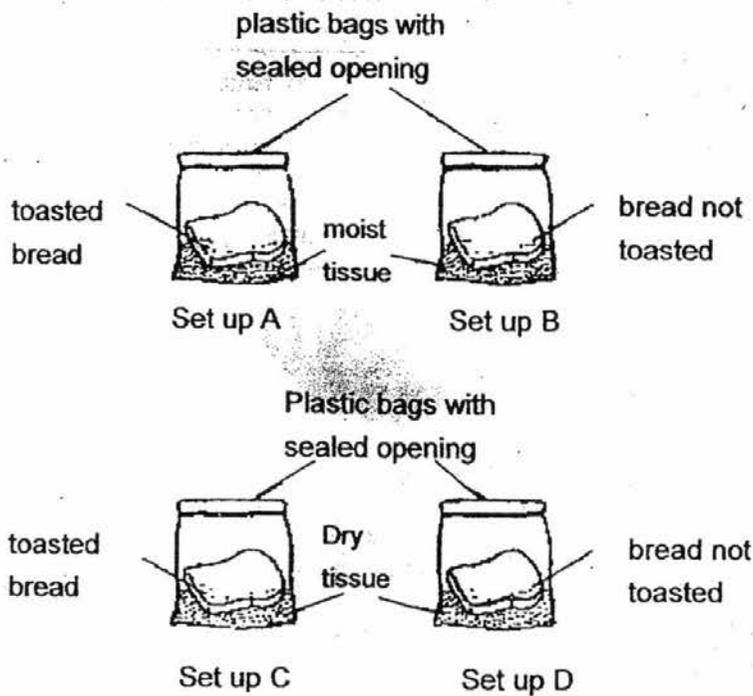
(c) What is the difference in breathing methods for animals in Group E and G? [2]

\_\_\_\_\_



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31. Gopal set up the following experiment in the classroom to grow some bread mould. He asked his pupils to observe the four pieces of bread every day. After a week, the pupils observed some mould growing on some of the pieces of breads.



- (a) Which set-ups would likely have mould growing after a few days?  
Explain your answer.

[1]

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- (b) Where did the mould obtain its food?

[1]

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- (c) What could Gopal do to see mould growing faster on the bread?

[1]

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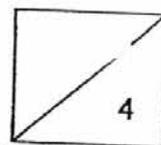
After a hot shower, Gopal dropped his towel into the laundry basket. After a few days, he noticed patches of mould on it. His mother told him that he should have hung his wet towel on the towel rack instead of putting it into the laundry basket.

(d) How does hanging the towel prevent the growth of mould?

[1]

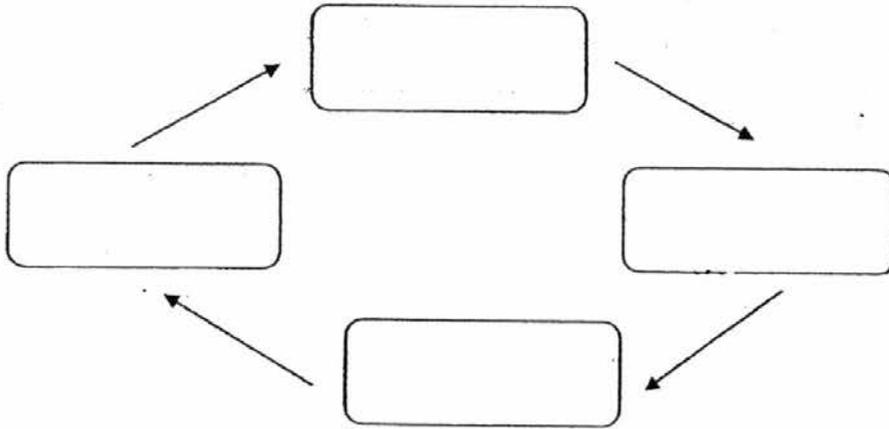
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32. Ahmad wants to depict the life cycle of a Diamondback moth.



- (a) Help him by writing the **stages** of the life cycle of the moth in the boxes provided in the diagram.

[2]

- (b) At which stage is the moth considered a pest to the gardener?

Explain your answer.

[1]

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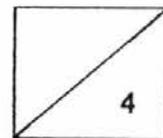


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- (c) How does laying many eggs at a time help the moth in its life cycle?

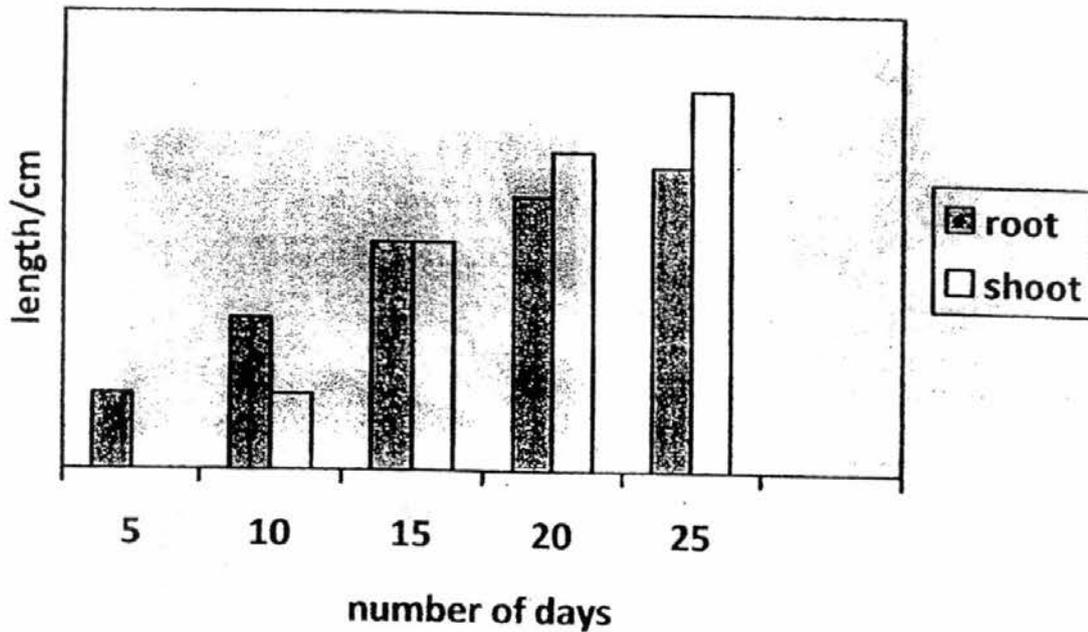
[1]

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33. The graph below shows the length of the root and shoot of a germinating seed over time.



- (a) Based on the graph, which part of the seed grows out first?  
Explain how the part is important for the germinating seed.

[1]

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Susan found these two plants in her garden.



Tomato plant



Moss

(b)  
(c) State two differences between these two plants.

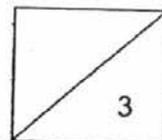
[2]

Difference 1: \_\_\_\_\_

\_\_\_\_\_

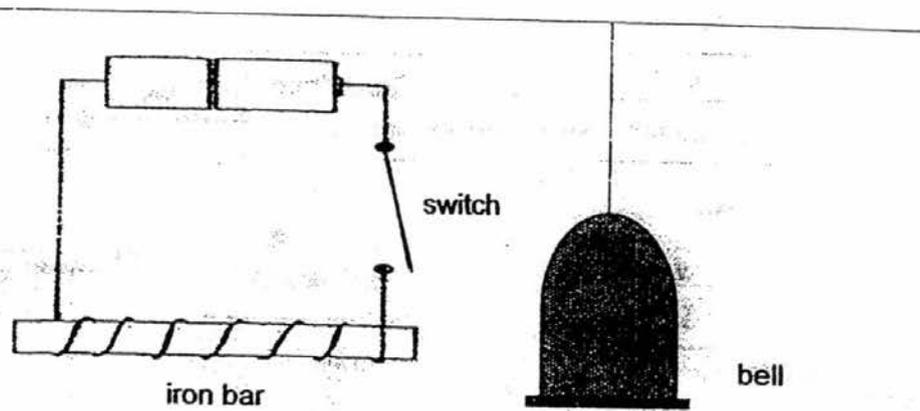
Difference 2: \_\_\_\_\_

\_\_\_\_\_



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34. Sally hung a bell near an iron bar as shown in the diagram below.



- (a) Explain why the bell rang when the switch was turned on. [2]

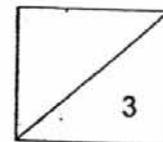
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- (b) Would the bell ring if it was made of copper? Explain why. [1]

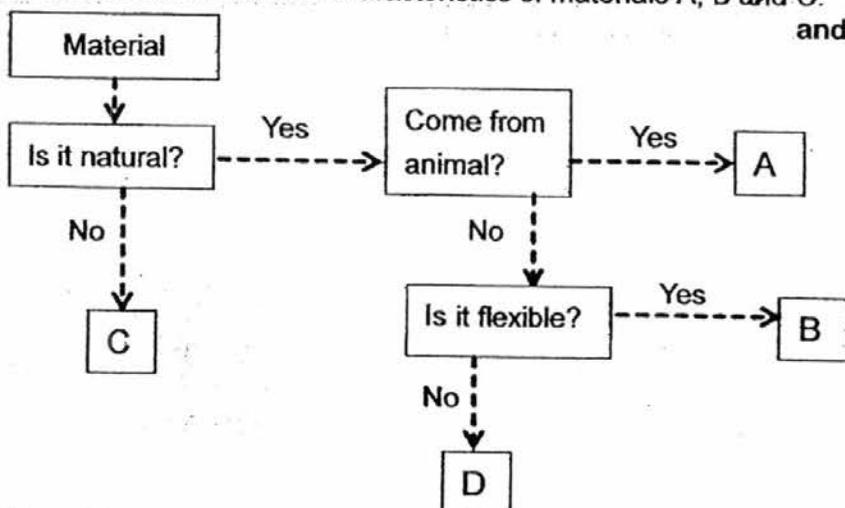
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35. The flow chart below shows the characteristics of materials A, B and C. and D



(a) Which of the materials below are represented by letters A, B, C or D? Write the letters in the box provided. [1]

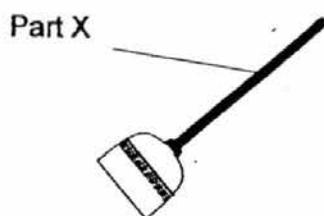
Leather

Plastic

(b) What is the similarity for both materials A and B? [1]

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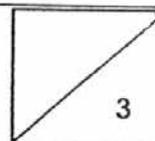
(c) The picture below shows a broom. Can part X be made using material D? Explain your answer. [1]




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36. Rayce set up the following experiment as shown in Diagram 1. Four rings of the same size, A, B, C and D, are stacked through a wooden rod. Three of them are magnets.

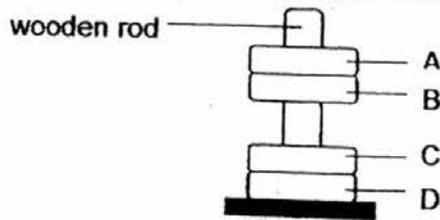


Diagram 1

The rings are then removed and stacked in another way through the wooden rod in Diagram 2.

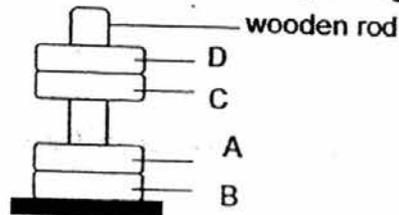


Diagram 2

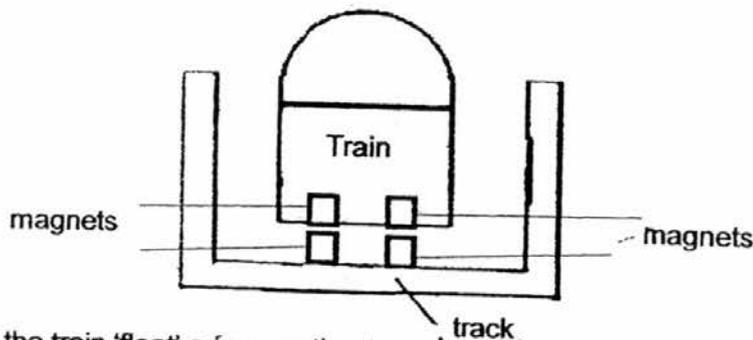
- (a) Which of the rings are definitely magnets? Explain your answer. [2]

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- (b) The picture below shows a maglev train which makes use of magnets to work as shown in the diagram below. It is observed that the train is 'floating' a few centimeters above the track when travelling.

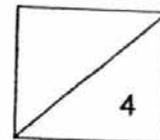


- Why did the train 'float' a few centimeters above the track when travelling? [2]

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37. Anna wanted to find out how dropping a magnet too often can affect its magnetism. She carried out the experiment and recorded the result in the table shown below.

Number of times the magnet was dropped	3	4	5	6	7	8	9
Number of paper clips attracted	10	9	8	7	5	3	1

- (a) What is the variable that Anna changed in this experiment?

[1]

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- (b) How does dropping the magnet affect its magnetism? Explain your answer based on the results above.

[2]

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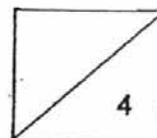


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- (c) How can Anna ensure that the result of her experiment is accurate?

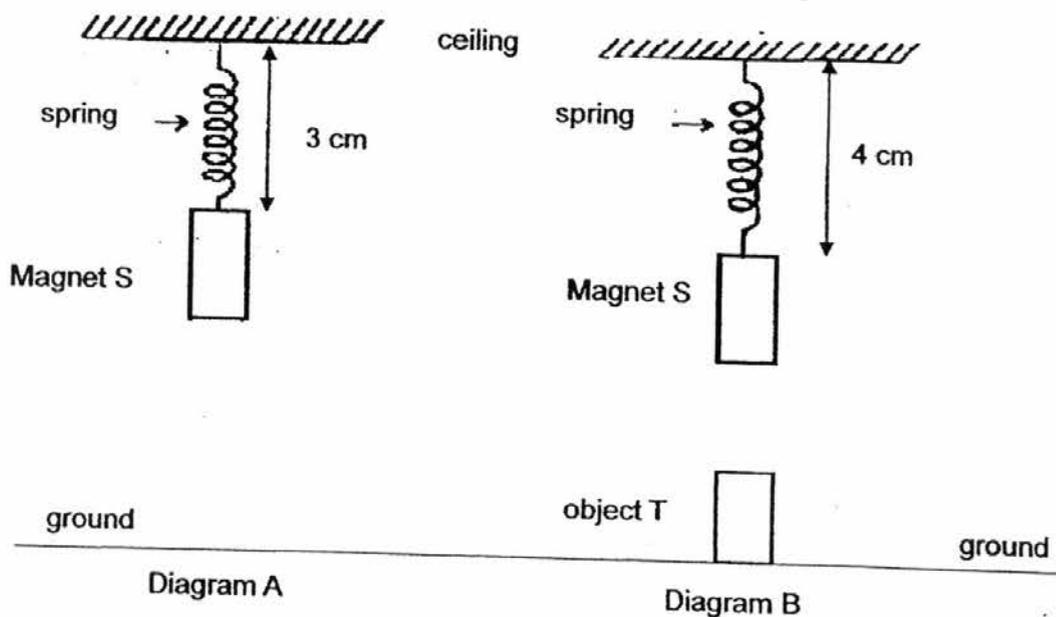
[1]

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- 38.- Magnet S was hung from a spring as shown in diagram A below. Object T was then placed on the ground, directly below magnet S as shown in diagram B.



- (a) Explain why the spring gets longer in the arrangement as shown in diagram B. [2]

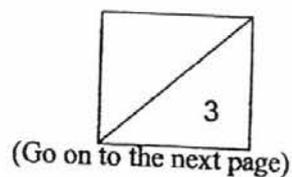
The experiment is then repeated by replacing object T by magnets U, V and W. The result is recorded in the table shown below.

Magnet	U	V	W
Length of spring between the ceiling and magnet S	6 cm	5 cm	4 cm

- (b) Based on the table above, which magnet has the strongest magnetic force? Explain your answer.

[1]

End of paper





YEAR : 2016  
LEVEL : PRIMARY 3  
SCHOOL : METHODIST GIRLS'  
SUBJECT : SCIENCE  
TERM : SA2

Booklet A

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

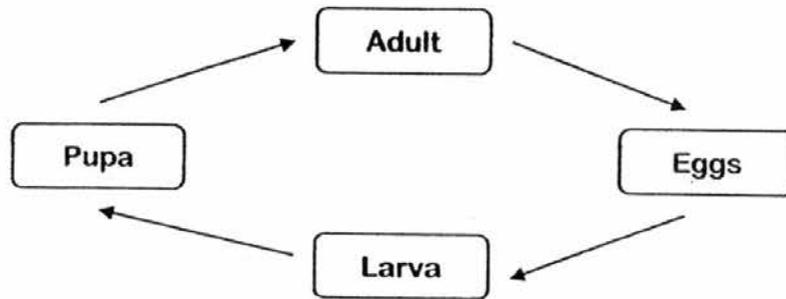
Booklet B

- Q29
- (a) **Mimosa.** Mimosa is a flowering plant and all the other plants in the same group as mimosa are non-flowering plants.
  - (b) **A sunflower.** The sunflower makes its own food by using the photosynthesis method.
- Q30
- (a) **Group A :** Give birth to young alive  
**Group B :** Lay eggs
  - (b) **Mammals**
  - (c) **In group E** the animals take in air through their lungs but in **group G** the animals breathe through their gills.

- Q31
- (a) Set up A and B. It has a necessary conditions air, water and warmth for grow.
  - (b) The mould obtains food in the bread.
  - (c) Sprinkle more water.
  - (d) Hanging the towel will make the wet towel dry and mould needs moist to grow.

Q32

(a)



- (b) At the larva stage. The moth will eat up the gardener's crops.
- (c) If a predator damages the eggs some might still be alive.

Q33

- (a) The roots. The roots help absorb water transporting the water to the stem and the stem to the leaves.
- (b) Difference 1 : The tomato plant is a flowering plant but the moss is a non-flowering plant.  
Difference 2 : Moss reproduce by spores but a tomato plant reproduce by seeds.

Q34

- (a) The switch made the iron bar an electromagnet and the bell is made out of a magnetic material so the bell got attracted by the electromagnet.
- (b) No as copper is not a magnetic material and will not be attracted.

Q35

(a) Leather 

A
---

Plastic 

C
---

- (b) Materials A and B are both natural.
- (c) Yes. Part X needs to be made using a material that is not flexible.

Q36

- (a) A, B and C. They repel.
- (b) Like poles of the magnet are facing each other so they repel.

Q37

- (a) The number of times the magnet was dropped.
- (b) Dropping the magnet weakens the magnetism and the more times the magnet was dropped, the fewer paper clips it attracted.
- (c) She can do the experiment again.

Q38

- (a) Object T could be a magnetic material and object T got attracted by magnet S.
- (b) Magnet U. It pulled magnet down the most and caused the spring to extend the most.

End

