



**NANYANG PRIMARY SCHOOL**

**PRIMARY 3 SCIENCE**

**SEMESTRAL ASSESSMENT 2  
2015**

**BOOKLET A**

**Date : 27 October 2015**

**Duration : 1 h 20 min**

**Name :** \_\_\_\_\_ ( - )

**Class: Primary 3** (       )

**DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.  
FOLLOW ALL INSTRUCTIONS CAREFULLY.**

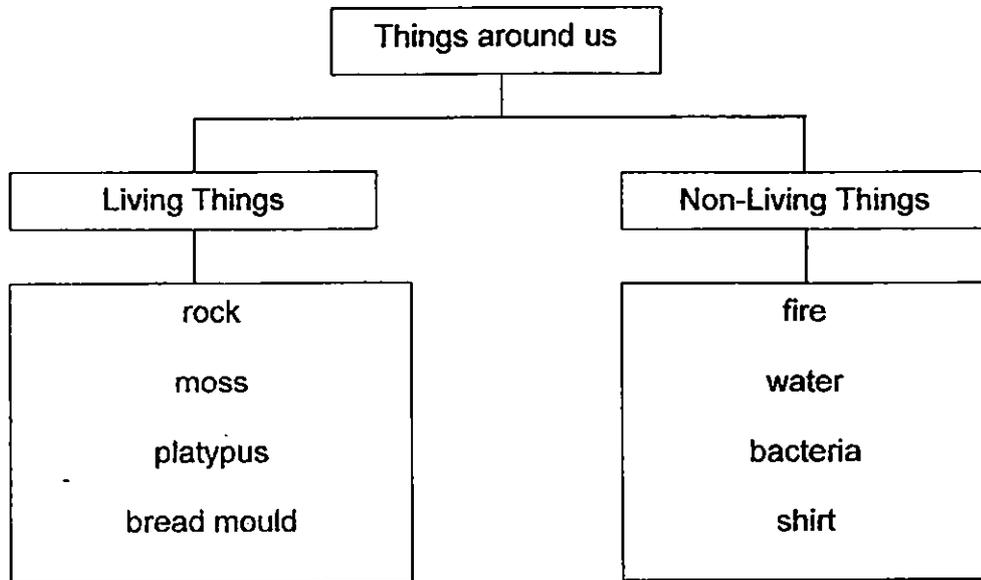
**Booklet A consists of 14 printed pages including this cover page.**

**Section A (24 x 2 marks = 48 marks)**

For each question from 1 to 24, 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 provided.

1. The table below shows a classification diagram of things that are placed into two different groups.



Based on the classification diagram above, which of the following things are wrongly classified?

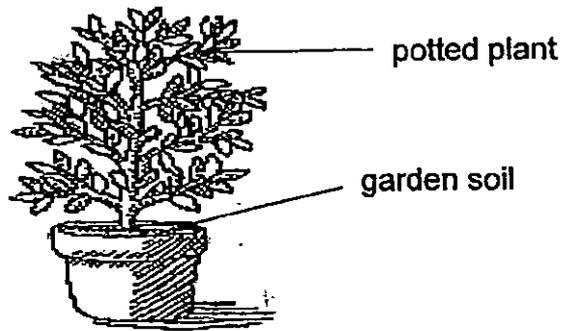
- (1) rock and bacteria  
(2) water and platypus  
(3) moss and shirt  
(4) bread mould and fire
2. Three pupils gave examples of how living things respond to changes in the environment.

Siti : The bird lays eggs in the nest.  
Devi : The owl hunts for food in the night.  
Jimmy : An indoor plant grows towards the window.

Which of the following pupil(s) had given the correct example?

- (1) Siti only  
(2) Devi only  
(3) Siti and Jimmy only  
(4) Devi and Jimmy only

3. Fabian bought four similar pots of plants as shown below and placed them along the corridor where there was sunlight.



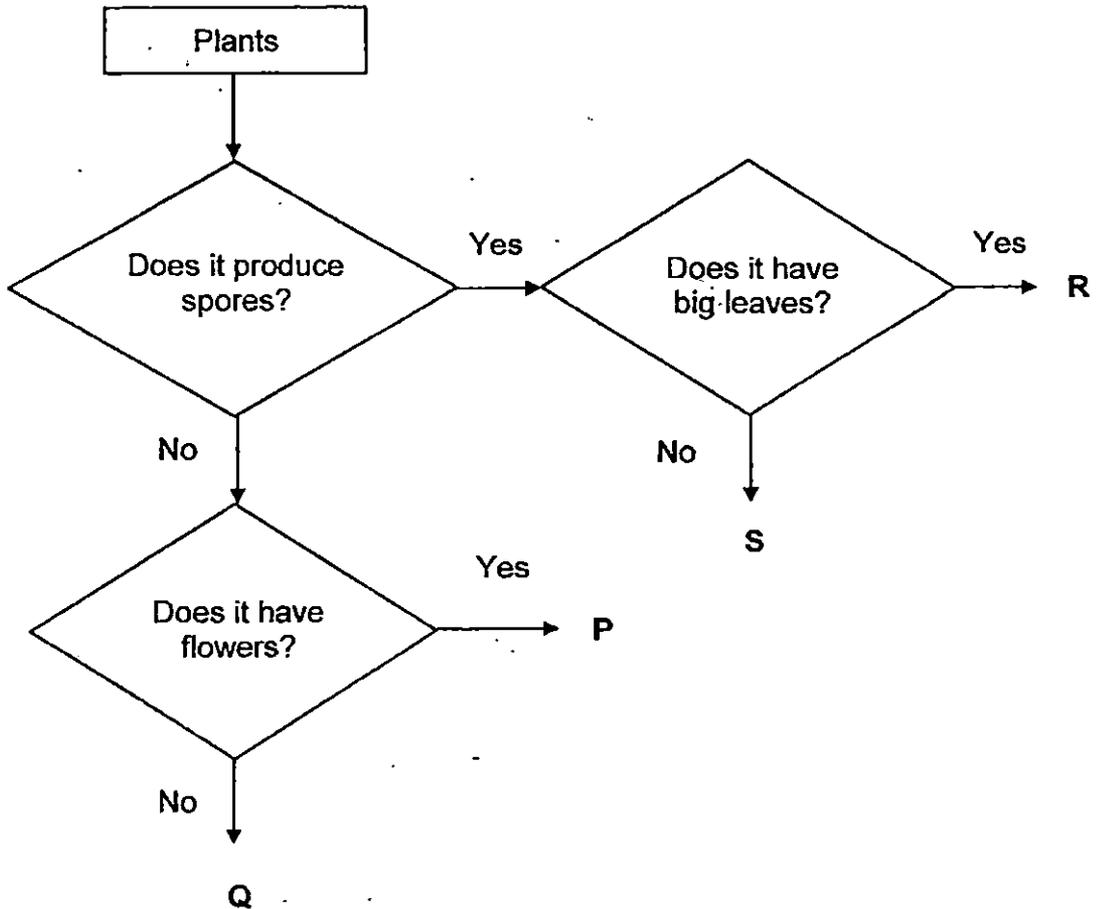
He watered the plants daily with different amount of water. The table below records his observations after five days.

Plant	Cup(s) of water	Observation after five days
A	0	dying
B	10	grows poorly
C	20	grows well
D	30	dying

Both plant A and plant D were dying.  
What could have caused plant D to die?

- (1) There was too much wind.
- (2) He had given plant D too much water.
- (3) He did not give plant D enough water.
- (4) There was too much light where plant D was placed.

4. Study the flowchart below.



Based on the flowchart, which one of the following letters represents 'moss' ?

- |       |       |
|-------|-------|
| (1) P | (2) Q |
| (3) R | (4) S |

5. Joe saw animal X on his trip to an island. He described the animal as the following:

- It could swim in water.
- It fed its young with milk.
- It reproduced by laying eggs.

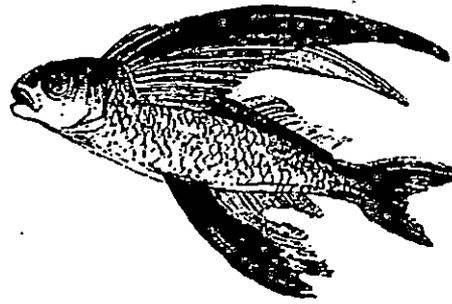
Which group does animal X belong to?

- |                |              |
|----------------|--------------|
| (1) fish       | (2) mammals  |
| (3) amphibians | (4) reptiles |

6. The picture below shows an insect and a fish.



**insect**



**fish**

Jenna made the following statements about the insect and the fish.

- A Both have wings.
- B Both reproduce by laying eggs.
- C The body covering of the insect and the fish is hard.

Which of the following is/are common characteristic(s) of an insect and a fish?

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

7. Joanne said that she had difficulties grouping reptiles and amphibians. Her friends gave her several suggestions on how she could group these animals.

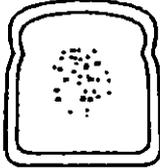
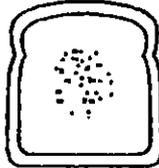
	<b>Suggestion</b>
Kayla	Check if they lay eggs.
Hui Min	Check if they have backbones.
Elliot	Check if they have moist or dry skin.
Gordon	Check if they have a constant body temperature.

Which one of her friends had given the best suggestion?

- (1) Elliot
- (2) Kayla
- (3) Hui Min
- (4) Gordon

8. Kristen wanted to find out how different amount of water affects the growth of bread mould. She used four slices of bread and kept them in separate sealed plastic bags. They were left at two different places to test for the growth of bread mould after two weeks.

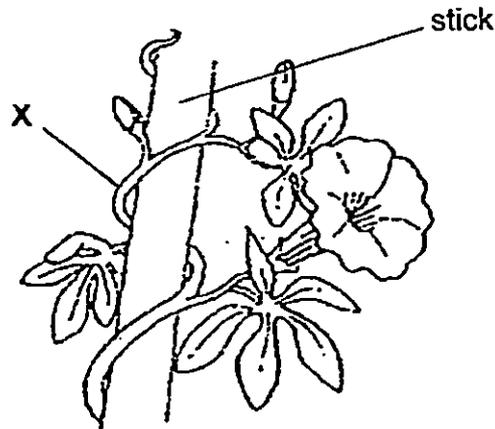
The results were shown below.

<p>On the kitchen table top</p>  <p>Bread A 10 drops of water added</p>	<p>In a dark cupboard</p>  <p>Bread B 10 drops of water added</p>
<p>On the kitchen table top</p>  <p>Bread C 20 drops of water added</p>	<p>In a dark cupboard</p>  <p>Bread D 20 drops of water added</p>

Based only on the results above, which one of the following statements about the bread mould is true?

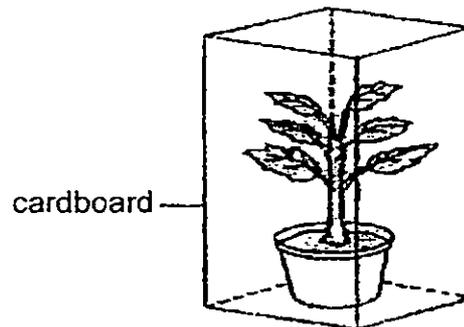
- (1) The amount of light will affect the growth of the bread mould.
- (2) The place the bread is kept affects the growth of the bread mould.
- (3) The amount of water added does not affect the growth of the bread mould.
- (4) The amount of water added to the bread will affect the growth of the mould.

9. Amir found the following plant in the garden.



What is the function of part X of the plant?

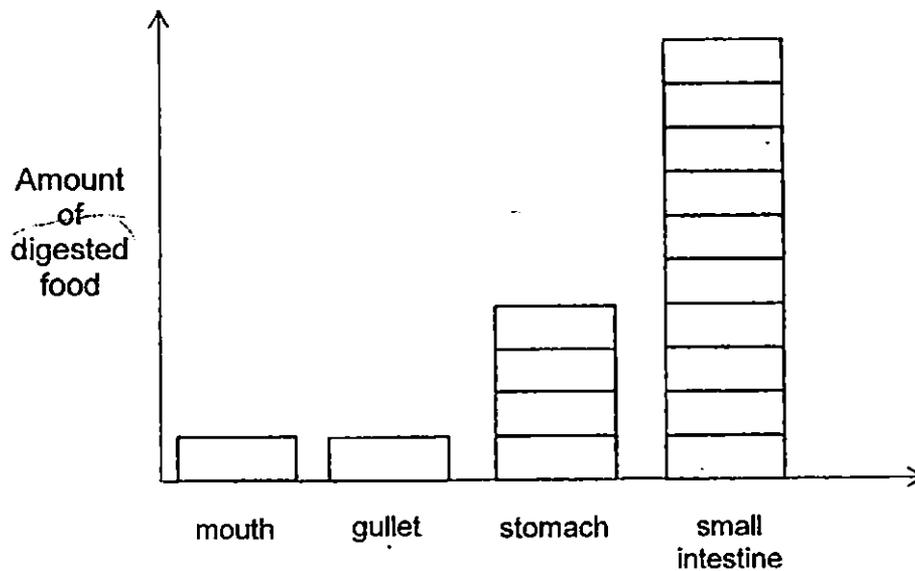
- (1) To help the plant to absorb nutrients.
  - (2) To help the plant absorb water and make food.
  - (3) To help the plant to grow towards sunlight to make food.
  - (4) To help the plant to move around freely from one place to another.
10. Angel placed a plant in a cardboard box. There were no holes on the cardboard box. The plant was watered every day.



What would most likely happen to the plant after 2 weeks?

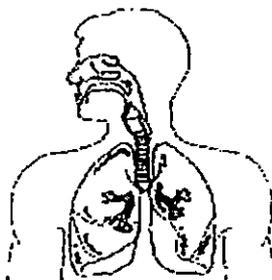
- (1) The plant would grow taller.
- (2) The plant would remain healthy.
- (3) The plant would die due to lack of air.
- (4) The plants would die due to lack of food.

11. Nakim had some food for dinner. The graph below shows the amount of food that had been digested when the meal passed through the organs in his digestive system.



Based on the graph, which one of the following descriptions about the digestive system is **true**?

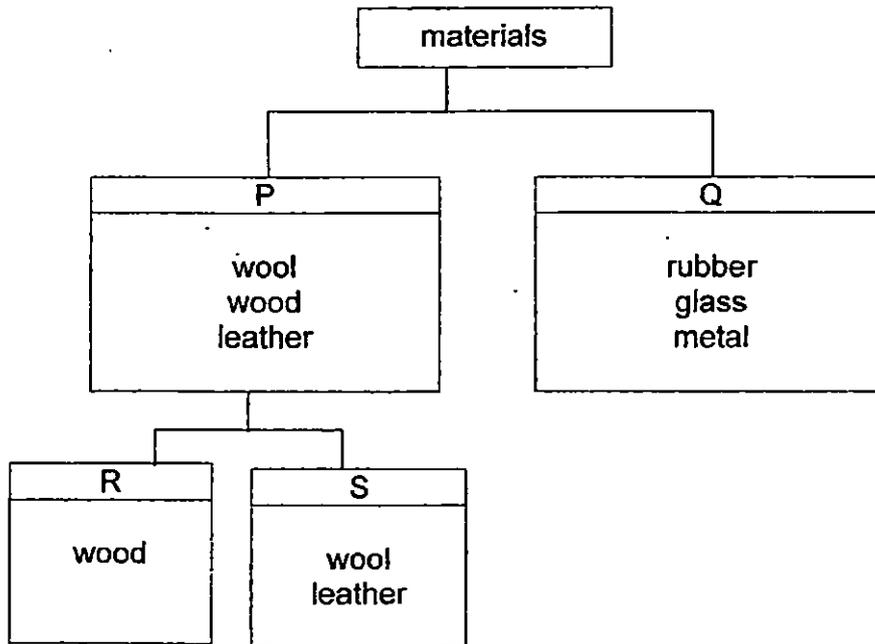
- (1) Digestion starts and ends in the mouth.
  - (2) All food are digested in the small intestine only.
  - (3) Gullet does not produce any digestive juice to digest the food.
  - (4) Stomach produces the most digestive juice so that it can digest most of the food.
12. Study the diagram of a human system below.



Which one of the statements about the system shown is correct?

- (1) It makes food for the body.
- (2) It takes in and removes air from the body.
- (3) It helps to support the body and gives it shape.
- (4) It transports food through the blood to all parts of the body.

13. Study the chart below.



Which one of the following sets of headings could represent P, Q, R and S?

	P	Q	R	S
(1)	strong	breaks easily	from plants	from animals
(2)	from plants	from animals	strong	breaks easily
(3)	flexible	stiff	waterproof	not waterproof
(4)	not waterproof	waterproof	from plants	from animals

14. Jevita wanted to make a beach ball. The table below shows the properties of the materials given to her.

material	flexible	waterproof	breaks easily
A	No	No	Yes
B	Yes	Yes	No
C	No	Yes	Yes
D	Yes	No	No

Based on the information above, which one of the above materials is the most suitable for making the beach ball?

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

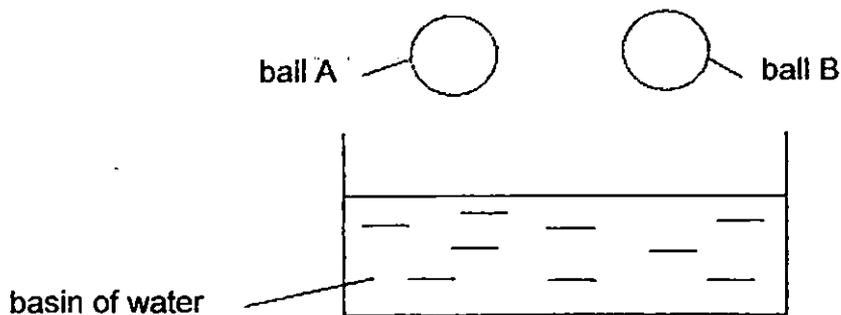
15. Zhi Wei needs to choose a material to build part X of a camping tent. Which of the following properties should he consider when choosing a material?



- A flexibility
- B waterproof
- C transparency
- D ability to float on water

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

16. Jeena had two balls made of different materials. She dropped both balls into a basin of water.

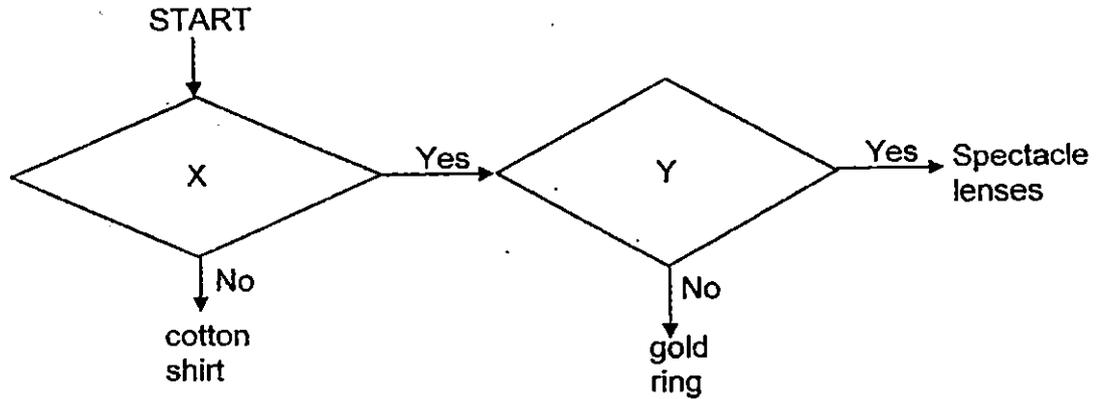


Which of the following properties of the ball could Jeena be testing for?

- A strength
- B waterproof
- C transparency
- D ability to float on water

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

17. Study the flow chart below.



Which one of the following represents the missing questions, X and Y, in the flow chart?

	X	Y
(1)	Does it absorb water?	Is it flexible?
(2)	Is it transparent?	Is it strong?
(3)	Does it absorb water?	Is it transparent?
(4)	Is it waterproof?	Is it transparent?

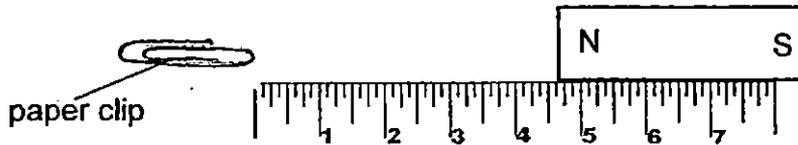
18. Lauren placed the two poles of a magnet near three different materials, A, B and C, to find out how they interacted. The results are shown below.

Observation	A	B	C
moved away from magnet	√		
moved towards the magnet	√	√	
remained in the same position			√

Based on the results above, which one of the following statements is correct?

- (1) B is made of glass.
- (2) C is made of copper.
- (3) A is made of aluminium.
- (4) A and C are not magnets.

19. Jessy placed four different magnets, A, B, C and D, near a paper clip placed beside a ruler.



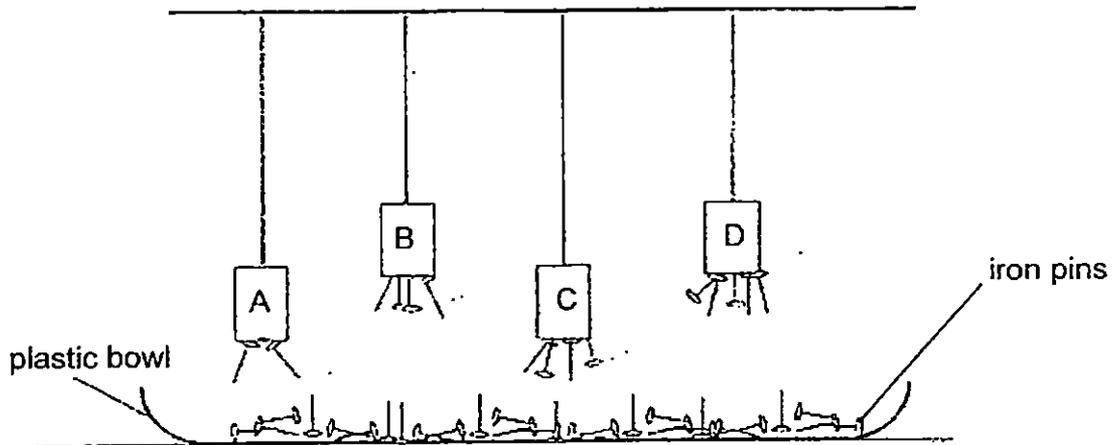
She then measured the distance taken for the different magnets to attract the paper clip.

Magnet	Distance
A	7cm
B	3cm
C	5cm
D	2cm

Based on the data above, which one of the magnets is the strongest?

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

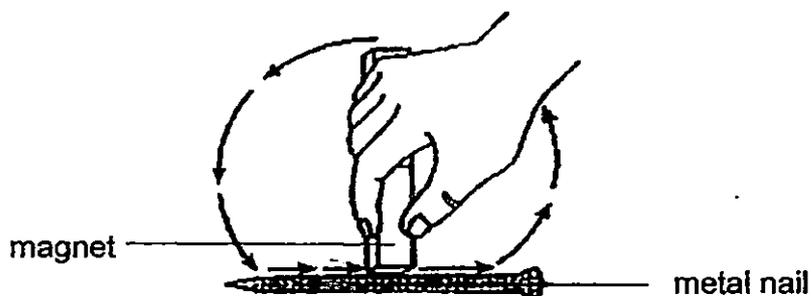
20. Ranveer arranged four magnets, A, B, C and D as shown below.



Based on the diagram above, arrange the strength of the magnets from the strongest to weakest.

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

21. Qian Hua stroked a metal nail with a magnet for a few minutes.



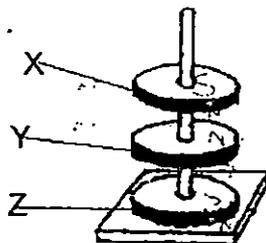
However, after the stroking, the metal nail was not able to attract any steel paper clip.

What is/are the possible reason(s) to explain the results?

- A The nail had a few scratches.
- B The nail was made of copper.
- C Qian Hua was stroking the nail too hard.
- D The number of strokes was not enough.

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

22. Three ring magnets, X, Y and Z, were suspended on top of each other as shown below.

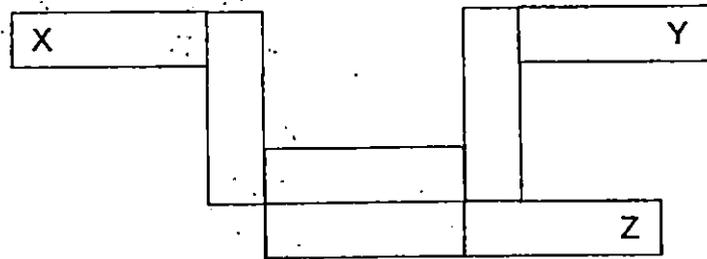


Which ~~two~~ the following actions would allow all the magnets to be attracted to each other?

- A Flip X only
- B Flip Y only
- C Flip X and Y only
- D Flip Y and Z only
- E Flip X and Z only

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

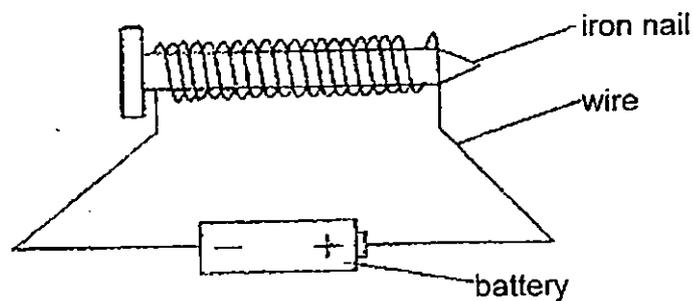
23. Seven magnets have been arranged according to the diagram below.



Based on the diagram above, which one of the following represents the correct poles for magnets X, Y and Z?

	X	Y	Z
(1)	south	north	north
(2)	north	south	south
(3)	south	north	south
(4)	north	north	south

24. Ali set up an experiment as shown below.



He wanted to make the electromagnet stronger. Which of the following actions should he take in order to make the electromagnet stronger?

- A Use a longer wire  
 B Use more batteries  
 C Use an aluminium nail instead of iron  
 D Use more turns of wire around the nail
- (1) A and B only  
 (2) B and C only  
 (3) B and D only  
 (4) B, C and D only



**NANYANG PRIMARY SCHOOL**

**PRIMARY 3 SCIENCE**

**SEMESTRAL ASSESSMENT 2  
2015**

**BOOKLET B**

**Date : 27 October 2015**

**Duration : 1 h 20 min**

**Name : \_\_\_\_\_ (     )**

**Class: Primary 3 (     )**

**Marks Scored:**

<b>Booklet A:</b>		<b>48</b>
<b>Booklet B :</b>		<b>32</b>
<b>Total :</b>		<b>80</b>

**Any query on marks awarded should be raised by 6 November 2015. We seek your understanding in this matter as any delay in the confirmation of marks will lead to delays in the generation of results.**

**Parent's signature: .....**

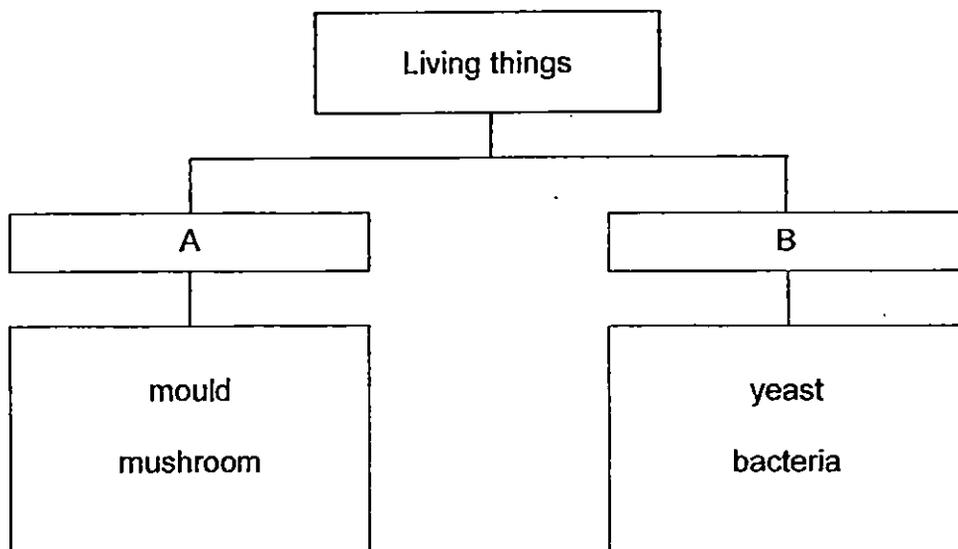
**DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.  
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**Booklet B consists of 12 printed pages including this cover page.**

**Section B (32 marks)**

Write your answers to questions 25 to 34 in the spaces provided.

25. Study the classification chart below.



(a) What are the possible headings for group A and group B. [1]

A: \_\_\_\_\_

B: \_\_\_\_\_

(b) George claimed that bacteria could be harmful or useful. Explain how they could be harmful or useful. [2]

bacteria	Explanation
useful	
harmful	

26. Limei saw a plant in the school garden and observed that it did not bear flowers and fruits. She concluded that it was a non-flowering plant.

(a) Apart from the observation stated above, what could Limei observe to make the same conclusion. [1]

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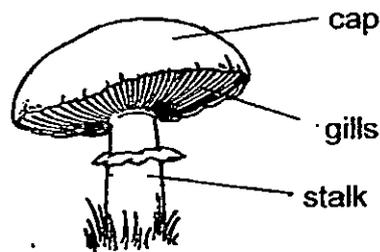
Limei's teacher identified the plant as a flowering plant.

(b) Give a reason why there are no flowers on this flowering plant. [1]

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(c) Limei spotted another organism in the garden as shown below.



She concluded that it <sup>is</sup> not a plant. Using the characteristic of the organism, explain why it is not a plant. [1]

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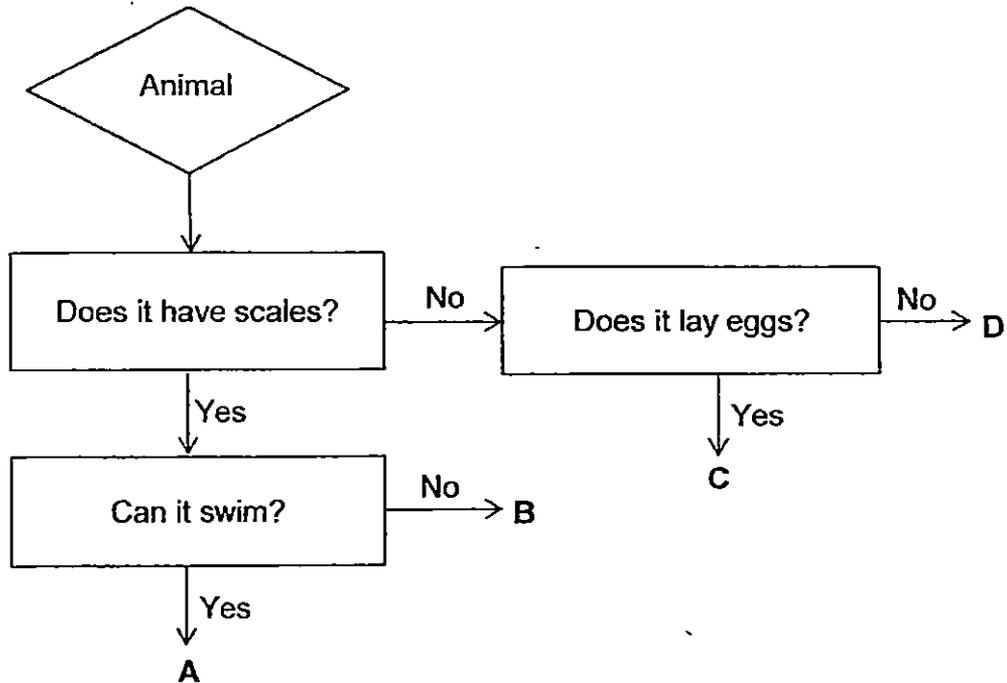
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(d) State a similar characteristic between a fungus and a plant. [1]

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27. Study the flowchart below. Answer the questions based only on the information in the flowchart.



- (a) State the characteristics of animal A. [1]

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- (b) State one **difference** between animal B and animal C. [1]

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- (c) Which **group** of animals does animal D belong to? [1]

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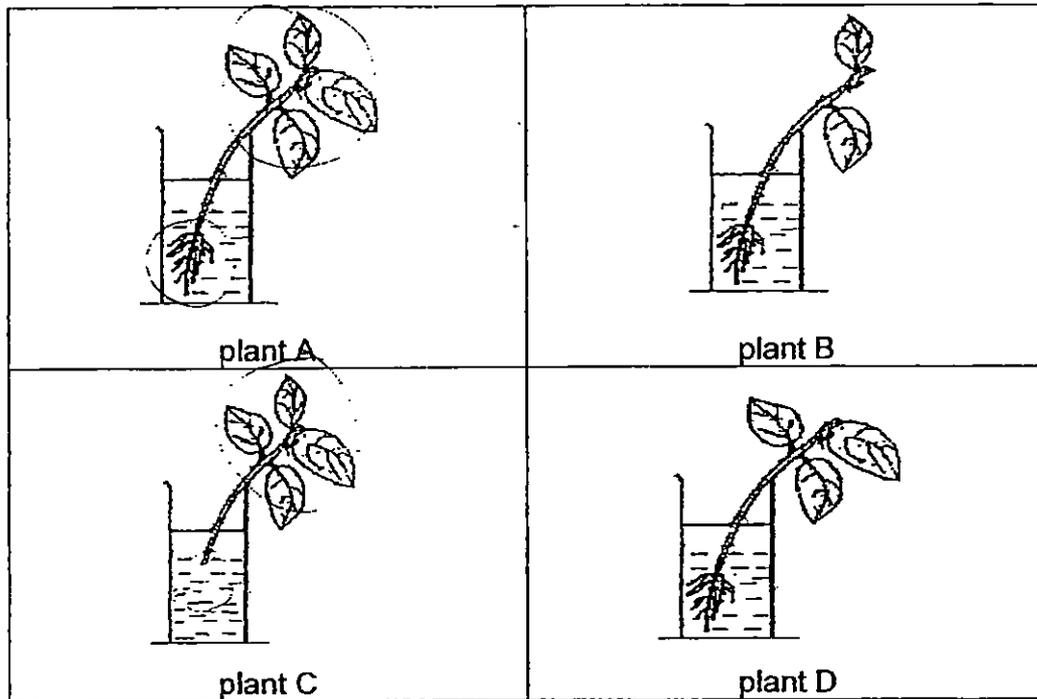
- (d) Caleb cannot conclude if animal C is an insect or an amphibian. What other observation must he make in order to decide which group of animal it belongs to? [1]

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28. Avi placed four plants of the same height, 6 cm, in water as shown below. All the plants were given enough sunlight and water.



- (a) Avi observed that plant A stayed alive longer than plant C. Explain his observation.

[1]

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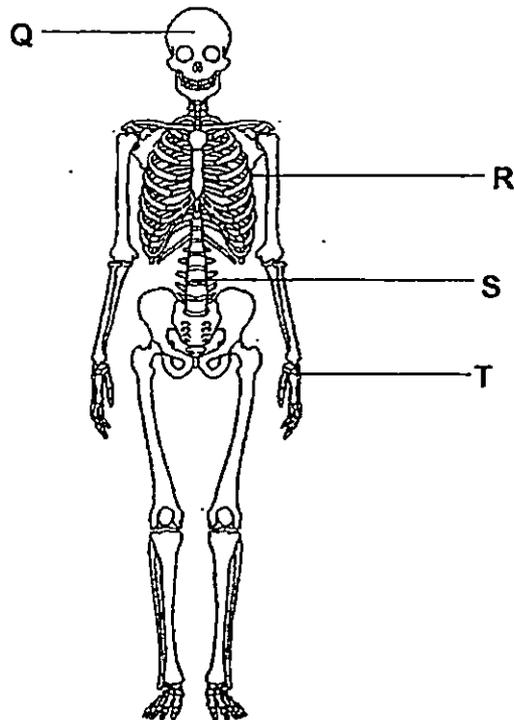
- (b) Avi measured the heights of the plants again at the end of 7 days.

Given that the plants grew under the same conditions, arrange the plants according to their heights. Write down A, B, C and D in the table below.

[2]

Height of the plants			
11cm	9cm	7cm	6cm

29. Study the diagram below.



(a) Read the statements carefully. Put a tick ( ✓ ) in the correct boxes. [2]

Function of the parts in the skeletal systems	True	False
i) Q is not part of the skeletal system.		
ii) R protects the lungs only.		
iii) S allows us to stand upright		
iv) T works with muscle to allow us to move.		

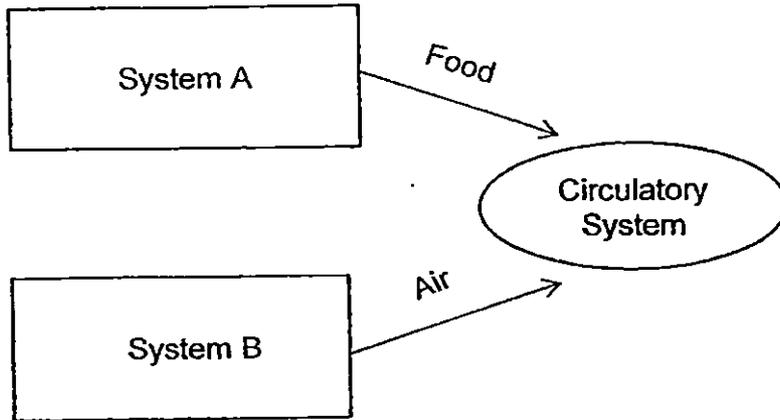
(b) Joe took a deep breath and swam underwater for 10 metres from one end of the pool to the other end. Which **two** main body systems must work together to enable movement in the water? [1]

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(c) Study the diagram about the organ systems of our body below. It shows how three body systems work together to transport food and air to all parts of the body.



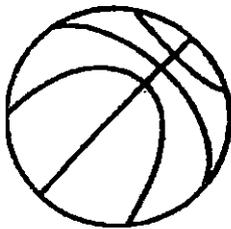
Identify systems A and B.

[1]

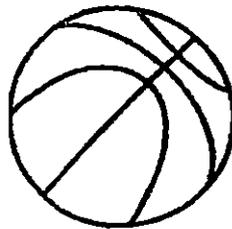
A : \_\_\_\_\_ system

B : - \_\_\_\_\_ system

0. Class 3J was given two balls during PE lesson.



rubber ball



paper ball

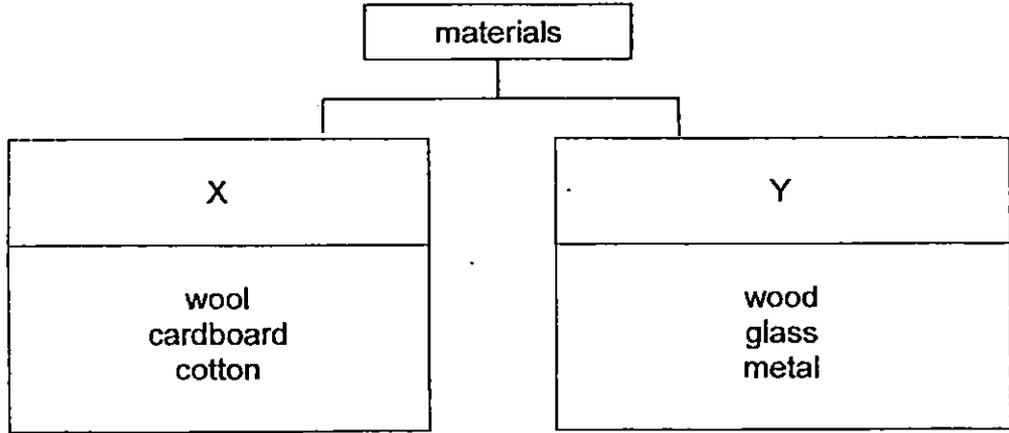
Based on the properties of the two materials, which one of the two balls should the class choose to play basketball with? Explain your choice. [2]

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31. Study the chart below.



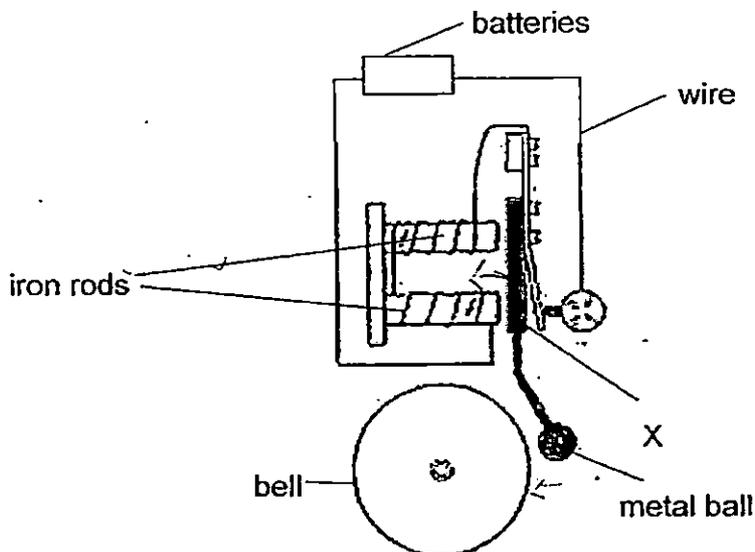
(a) Based on the properties of materials above, write down suitable heading for boxes X and Y. [1]

X: \_\_\_\_\_

Y: \_\_\_\_\_

(b) Re-group the materials in **group X only**, in the table below, and give **proper headings**. [2]


32. The diagram below shows the circuit of a bell, where 2 iron rods act as electromagnets.



In order for the bell to ring, part X must move towards the iron rods until the metal ball hits the bell.

- (a) After setting up the electromagnet above, the bell did not ring. Explain the possible reason why the bell did not ring.

[1]

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After making the necessary changes, the bell works perfectly well.

- (b) What will happen to the bell if part X is replaced with a gold plate. Explain your answer.

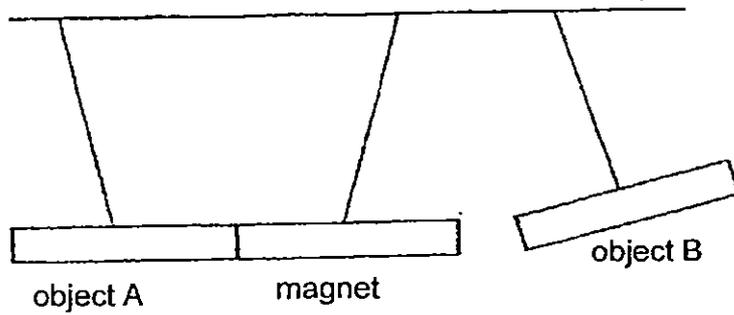
[1]

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33. Zhi Xuan conducted an experiment and he drew the results as shown in the diagram below.



He observed that object A was attracted to the magnet while object B moved away from the magnet.

- (a) Zhi Xuan concluded that object A was definitely a magnet. Explain why he was wrong. [1]

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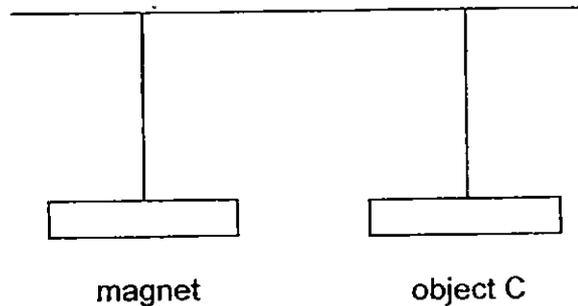
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- (b) Explain why object B moved away from the magnet. [1]

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He then hung object C and observed that both objects did not move.

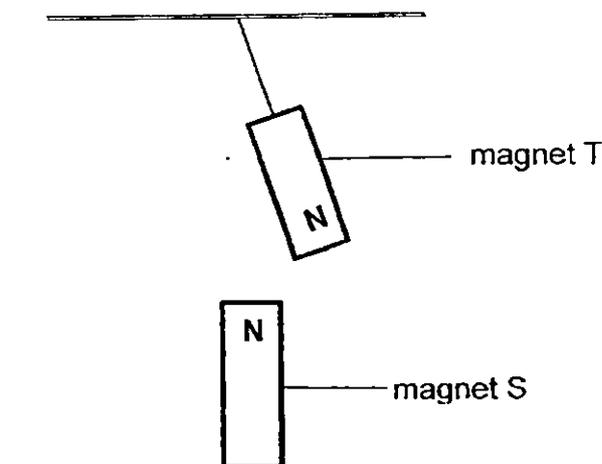


- (c) Based on the reaction of object C, what can you conclude about the property of object C? [1]

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34. Santhi hung one magnet, T, directly on top of another magnet, S, which was secured on the table. She observed that magnet T was always pushed away from magnet S as shown below.



- (a) Explain why magnet T was not able to rest above magnet S. [1]

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Santhi then flipped magnet S around such that its north pole is on the table.

- (b) What would Santhi observe about the position of magnet T after the change was made? Explain your answer. [1]

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Santhi removed magnet T and heated it for 15 minutes until it was glowing red. She then tried to use magnet T to attract some steel pins but was not able to attract any.

- (c) With the help of another magnet, write down the steps she should take in order for magnet T to be able to attract magnetic materials again. [2]

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## 2015 P3 SA2 Answer Key Analysis

### Booklet A

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

### Booklet B – Analysis for Selected Questions

25a.

Concept : Classification of Living Things

Misconception : Yeast is not a fungus.

Answer :

A : can be seen with naked eyes

B : can only be seen with microscope

Focus : Headings are marked as a pair. Same characteristics must be compared for the pair of headings.

25b.

Answer :

Useful : It can be used to make food such as yogurt and cheese.

Harmful : It can cause diseases.

Note : Avoid giving vague answers such as, "Bacteria kills us." Explain further, "Bacteria cause diseases that can be deadly."

26a.

Answer : She has to check if there are any spores on the underside of the leaves.

Note : Pupils has to give **another** observation that Limei has to take apart from what is already mentioned in the question stem, so any answer about flowers and fruits is unacceptable.

**To check if plants is reproduced by spores** – partial mark is given as we have to help pupils relate that Limei has to check for presence of spores if it is reproduce by spores.

26c.

Concept : Differences between fungi and plants.

Answer : The organism has cap, gills and stalk but plants have leaves, stems and roots so it is not a plant.

OR : The organism gets their food from the organism that they are growing on but plants can make their own food.

Note : Must show comparision.

26d.

Concept : Similarities between all living things (NGRR) or similarities between plants and fungi in the way they respond to changes in the surroundings.

Answer : Both the plants and the fungi can only move part of itself.

27a.

Answer : Animal B has scales and can swim.

Note : The 2 characteristics have to be present before A can be identified, no partial answer.

27b.

Answer : Animal B has scales but animal C does not have scales.

Note : "Animal B has scales but C does not.", answer is not specific for animal C.

27d.

Concept : Differences between insect and amphibians.

Answer : He should observe the outer covering of the animal C. If it has a moist skin, it is an amphibian. If it has a hard outer covering, it is an insect.

28a.

Answer : Plant A has roots which plant C does not have so plant A can absorb water for the plant.

Focus : 1. Plant A has roots but plant C roots has been cut off.  
2. Function of the roots.

28b.

Note : No partial answer.

30.

Concept : Properties of material. There are 5 properties that pupils have learnt : Strength (will not break easily), Flexibility (can bend easily), Transparency (transparent, translucent, opaque), Buoyancy (float or sink in water), Waterproof (or absorbent to water).

Focus : Correct explanation given for correct property stated.

Answer : Rubber ball because rubber is stronger so it will not tear easily.

OR : Rubber ball because rubber is flexible so the ball will be able to bounce.

32a.

Concept : Factors affecting strength of electromagnet.

Answer : Battery has not enough energy.

OR : There are not enough coils of wire around the iron rods.

Note : As mentioned in the question stem, it is a working bell so pupils cannot mention that part X is not magnetic.

32b.

Concept : Gold is not a magnetic material.

Answer : The bell will not ring as gold is a non-magnetic material so part X will not be attracted to the electromagnet and ring the bell.

Note : Explanation must be correct before any marks can be awarded.

33a.

Answer : Object A can also be a magnetic material because both magnetic material and magnets can be attracted by a magnet.

OR Object A did not repel the magnet, only magnets with like poles facing each other will repel each other.

Note : Generic answer such as "Magnetic material are attracted by magnets." will not be accepted. Facts stated must relate to the question.

33b.

Answer : Object B is a magnet so object B and the magnet will repel each other when their like poles are facing each other.

Focus : Object B must first be identified as a magnet before there can be any mention of repulsion of like poles.

Note : Unacceptable generic answer "Unlike poles facing each other will repel."

33c.

Answer : Object C is non-magnetic.

Incomplete answer : Object B is not a magnet.

34a.

Answer : The like poles of the 2 magnets are facing each other so magnet T repel magnet S.

Note : Generic answer such as "Like poles repel each other" without relating answer to question is unacceptable.

34b.

Answer : Magnet T rest directly above magnet S because the unlike poles of magnets are facing each other so they attracted.

Focus : There are 2 parts to the answer :

1. Position of Magnet T ( marks will be awarded only if explanation is correct)
2. Explanation

34c.

Answer : **Stroke** magnet T with another magnet, using the **same pole/end** of the magnet, **in the same direction, a few times.**

Note : There are 4 marking points.