SINGAPORE CHINESE GIRLS' SCHOOL (PRIMARY)

FIRST SEMESTRAL ASSESSMENT 2022

NAME: _____ (  )  DATE: 6 MAY 2022

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

Parent's Signature:

**SCIENCE**

**BOOKLET A**

25 questions

50 marks

Total time for Booklets A & B: 1 h 25 min

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**FOLLOW ALL INSTRUCTIONS CAREFULLY.**



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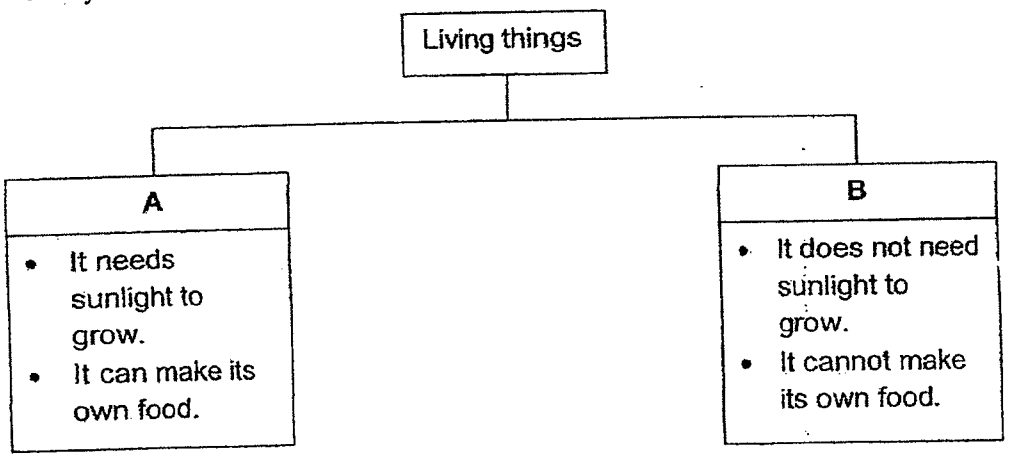
**Part I (50 marks)**

For each question from 1 to 25, 4 options are given.
One of them is the correct answer. Make your choice, (1, 2, 3 or 4).
**Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.**

1. Michelle saw a rabbit in a garden. When she moved closer to the rabbit, it ran away. What characteristic of living things did the rabbit show?

   1) Living things can grow.
   2) Living things can die.
   3) Living things can reproduce.
   4) Living things can respond to changes.

2. Study the classification chart below carefully.




What are living things, A and B, likely to be?

| | A | B |
|---|---|---|
| 1) | Water lily plant | Mosquito fern |
| 2) | Mould | Papaya plant |
| 3) | Sunflower plant | Mushroom |
| 4) | Yeast | Moss |



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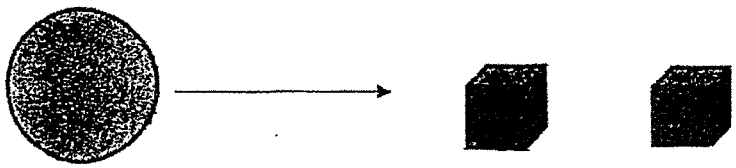
3. The table below describes the stages of life cycles of 4 animals.

| Description | A | B | C | D |
|---|---|---|---|---|
| The young looks like the adult. | No | Yes | No | Yes |
| It has four stages in its life cycle. | Yes | No | Yes | No |
| The young goes through moulting. | Yes | No | No | Yes |

Which one of the following is likely to be a mealworm beetle?

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

4. Linda took a ball of plasticine which weighed 200 g and moulded the plasticine into two cubes as shown below:

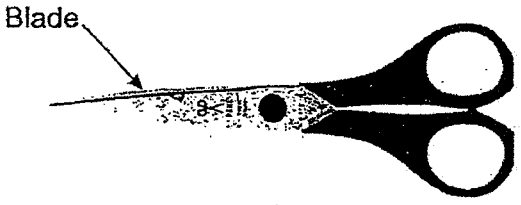


What is the total mass of the 2 cubes?

1) 50 g
2) 100 g
3) 150 g
4) 200 g

5. The following table shows the properties of 4 materials P, Q, R and S. A tick (✓) shows that the material has that particular characteristic.

| Property | Material P | Material Q | Material R | Material S |
|---|---|---|---|---|
| Strong | ✓ | | ✓ | |
| Flexible | | ✓ | ✓ | ✓ |
| Waterproof | ✓ | | | ✓ |




Which one of the materials, P, Q, R or S is a suitable material for making the blade?

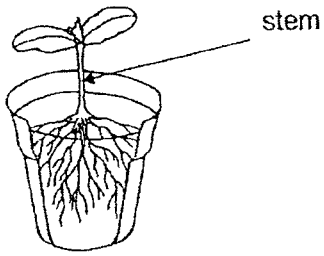
1) P
2) Q
3) R
4) S



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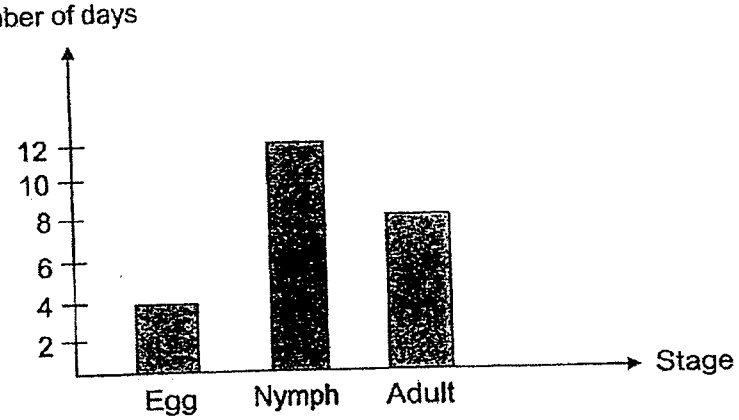
6. The diagram below shows a young plant.




The stem helps the plant to _____.

1) make food
2) stay upright
3) absorb water
4) absorb mineral salts

7. The graph below shows the number of days in each stage of the life cycle of an insect.




Which of the following information obtained from the graph is correct?

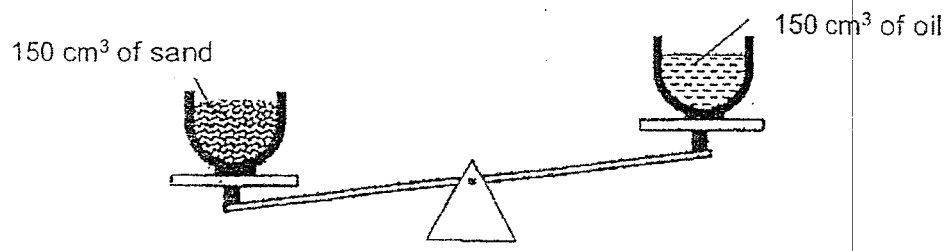
1) The insect dies in less than 12 days.
2) The insect takes 8 days to become a nymph.
3) The insect spends 12 days as a nymph.
4) It takes 24 days to become an adult after the egg is hatched.



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8. The diagrams below show 2 identical bowls placed on a balance lever. The bowls were filled with 150 $cm^3$ of sand and oil respectively.



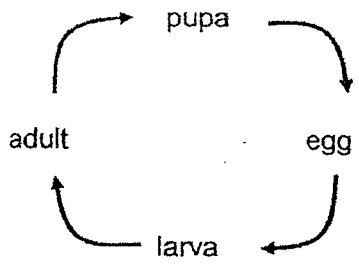

Based on the information above, which of the following statements are correct?

W: The bowls of sand and oil have the same volume.
X: The bowls of sand and oil have the same mass.
Y: The bowl of oil has a smaller mass than the bowl of sand.
Z: The bowl of oil has a smaller volume than the bowl of sand.

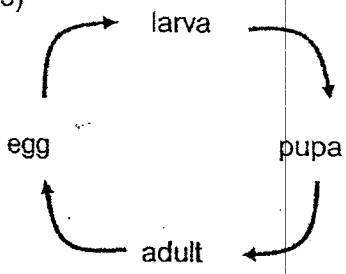
1) W and X
2) W and Y
3) Z and X
4) Z and Y

9. Which of the following shows the correct life cycle of a butterfly?

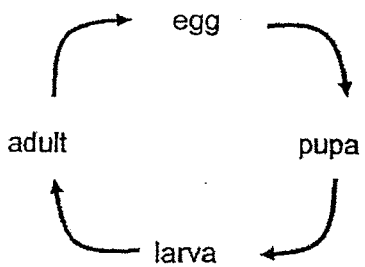
1)



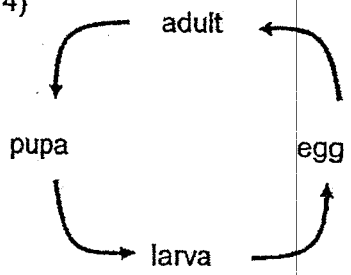

3)




2)




4)

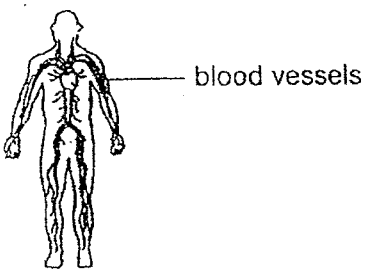





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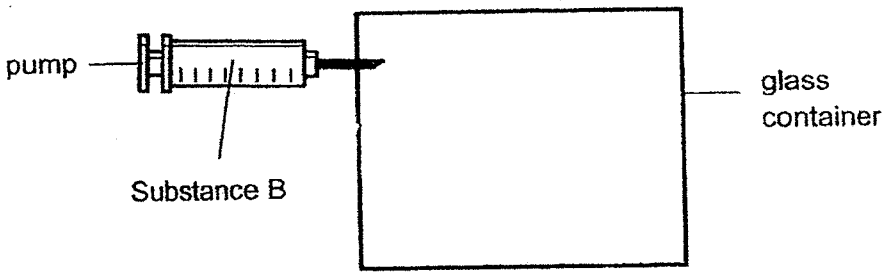
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10. Which one of the following shows the correct function for the system below?




1) Carries digested food, water and oxygen to all parts of the body.
2) Takes oxygen into the body and removes carbon dioxide from the body.
3) Breaks down food into simpler substances.
4) Helps to move different parts of the body.

11. The diagram below shows a glass container and a pump. Substance B was pumped in.




The table below shows how the volume in the glass container changes as more of substance B is pumped in.

| Mass (g) | 10 | 13 | 15 | 17 | 19 |
|---|---|---|---|---|---|
| Volume (ml) | 100 | 100 | 100 | 100 | 100 |

Substance B is most likely to be _____.

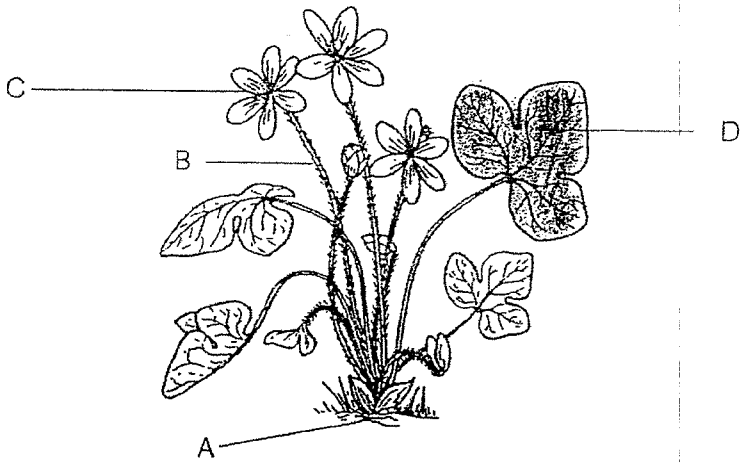
1) sand
2) toothpaste
3) water
4) carbon dioxide



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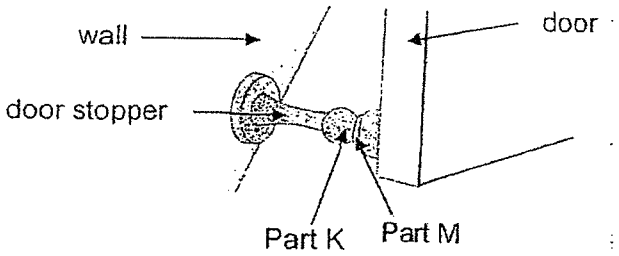
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12. Which part of the tree helps to hold the plant upright?




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

13. The picture below shows a door stopper which is used to keep the door open when Part K attracts Part M.




What are Parts K and M made of?

| | Part K | Part M |
|---|---|---|
| 1) | Aluminium | Steel |
| 2) | Aluminium | Iron |
| 3) | Magnet | Iron |
| 4) | Magnet | Aluminium |



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14. Allie took 4 seeds from the same plant, A, B, C and D and placed them under the conditions shown below.

| Seed | Location | Temperature | Water |
|---|---|---|---|
| A | Inside metal cupboard | 24°C | Yes |
| B | Inside metal cupboard | 24°C | No |
| C | Garden | 30°C | Yes |
| D | Garden | 30°C | No |

Which of the seeds, A, B, C or D would most likely germinate after 1 week?

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

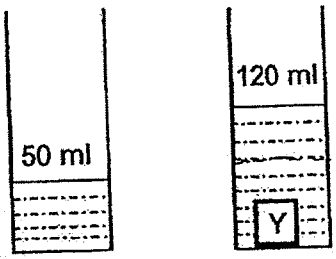
15. The following table compares the life cycles of a butterfly and a grasshopper.

| | | Butterfly | Grasshopper |
|---|---|---|---|
| A | Lays eggs on land | Yes | Yes |
| B | 4-stage life cycle | No | Yes |
| C | Has wings in its adult stage | Yes | Yes |
| D | The young resembles the adult | Yes | No |

Which of the above comparisons are correct?

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

16. Rachel filled a measuring cylinder with water and placed object Y in the cylinder. The volume of object Y and water in the cylinder was shown below.




What is the volume of object Y?

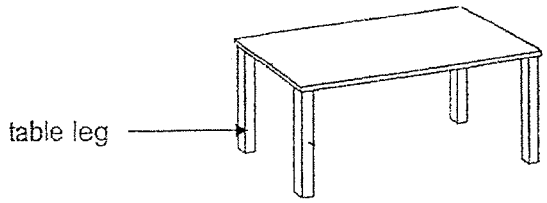
1) 50 ml
2) 70 ml
3) 120 ml
4) 170 ml



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17. The diagram below shows a table.




Which of the following tests is needed to find out if Substance Z is suitable for making the table leg?

1) Finding out if the material is magnetic
2) Finding out if the material can float on water
3) Finding out if hitting the leg can break it
4) Finding out if light can pass through

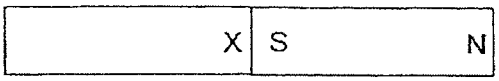
18. Object P is brought near a bar magnet and its end marked X is attracted to the S-pole of the magnet as shown below.

**Before**




Object P  Bar magnet

**After**




Object P  Bar magnet

Based on the above observation, object P could be a _____

A: iron rod
B: aluminium rod
C: magnet

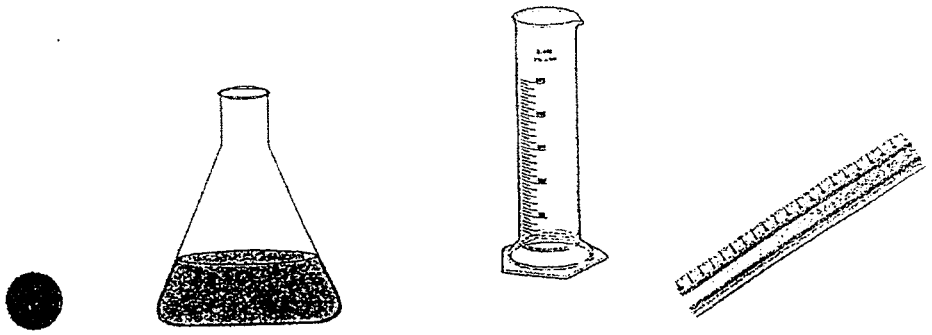
1) A only
2) C only
3) A and B only
4) A and C only



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19. Ashley has a coin shown below. She is provided with a flask of water, a measuring cylinder and a ruler.

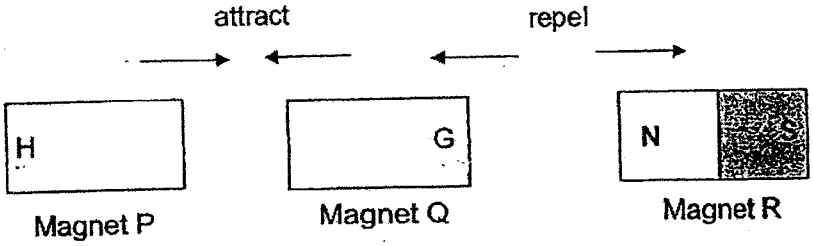


Metal coin | Flask of water | Measuring cylinder | Ruler

Using only the materials provided above, which of the following properties of the metal coin **cannot** be measured or tested?

1) Mass of the metal coin
2) Length of the metal coin
3) Volume of the metal coin
4) Whether the metal coin sinks or floats

20. Janet placed 3 magnets near each other as shown below.




Which one of the following correctly represents the poles of G and H?

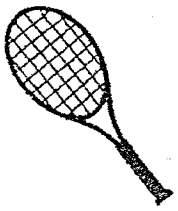
| | G | H |
|---|---|---|
| 1) | North | North |
| 2) | North | South |
| 3) | South | North |
| 4) | South | South |



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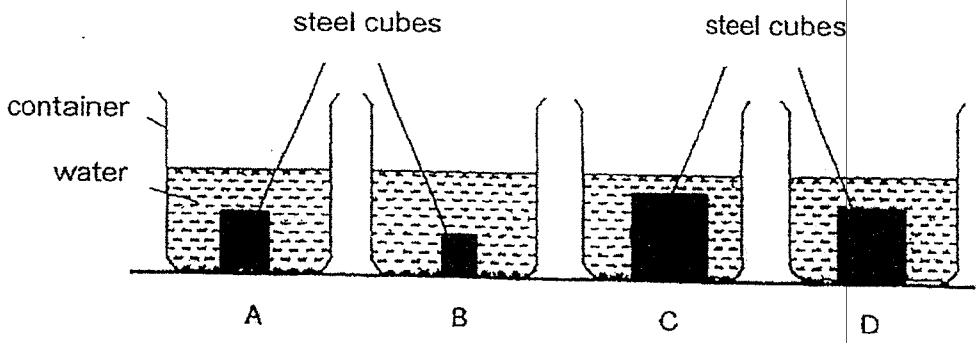
21. The diagram below shows a tennis racket.



Which of the comments is correct?

1) The tennis racket is a system because it has parts that work together to perform a function.
2) The tennis racket is not a system as it is a non-living thing.
3) The handle of the racket is not part of the system as other parts are more important.
4) The tennis racket is a system because it is made of different materials.

22. 4 steel cubes of different sizes are placed into containers A, B, C and D. Then water is poured into each container until the water level in all the containers is the same as shown in the diagram below.




Which container has the most water?

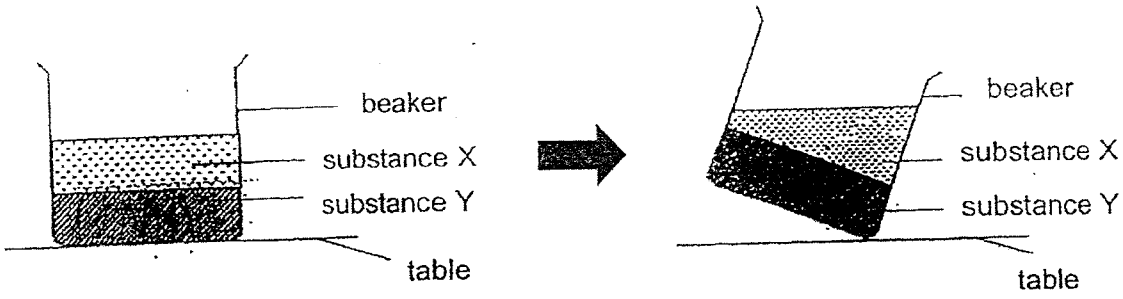
1) A
2) B
3) C
4) D



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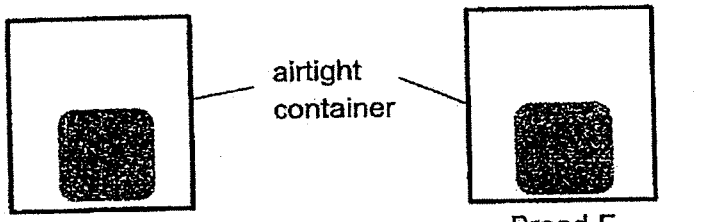
23. Two substances, X and Y, are placed in a beaker and tilted as shown in the diagrams below.




Based on the observation, which one of the following correctly represents substances X and Y?

| | X | Y |
|---|---|---|
| 1) | plasticine | plasticine |
| 2) | plasticine | milk |
| 3) | oil | milk |
| 4) | oil | plasticine |

24. Lisa had 2 pieces of bread, E and F. She toasted bread E and sprinkled 5 drops of water on only bread F. Both were then placed in 2 similar airtight containers on a table for a week.




What will Lisa most likely observe after a week?

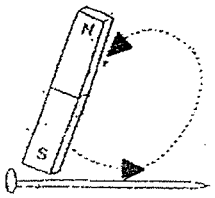
1) Mould had grown on both pieces of breads.
2) Mould had grown on Bread F only.
3) Mould had grown on Bread E only.
4) Mould did not grow on both pieces of bread.



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25. Audrey made some new magnets by stroking some iron nails with a magnet. She tested the strength of the new magnets by using them to attract paper clips.




She recorded her results in a table below.

| Number of strokes | Number of iron paper clips attracted |
|---|---|
| 10 | 5 |
| 20 | 14 |
| 30 | [illegible] |
| 40 | 20 |

What is the missing result in the table?

1) 3
2) 10
3) 18
4) 22



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SINGAPORE CHINESE GIRLS' SCHOOL (PRIMARY)

FIRST SEMESTRAL ASSESSMENT

NAME: _____ (  )  DATE: 6 MAY

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

Parent's Signature:

_____

# SCIENCE

## BOOKLET B

| | Total Actual Marks | Total Possible Marks |
|---|---|---|
| Booklet A | | 50 |
| Booklet B | | 30 |
| Total | | 80 |

10 questions

30 marks

Total time for Booklets A & B: 1 h 25 min

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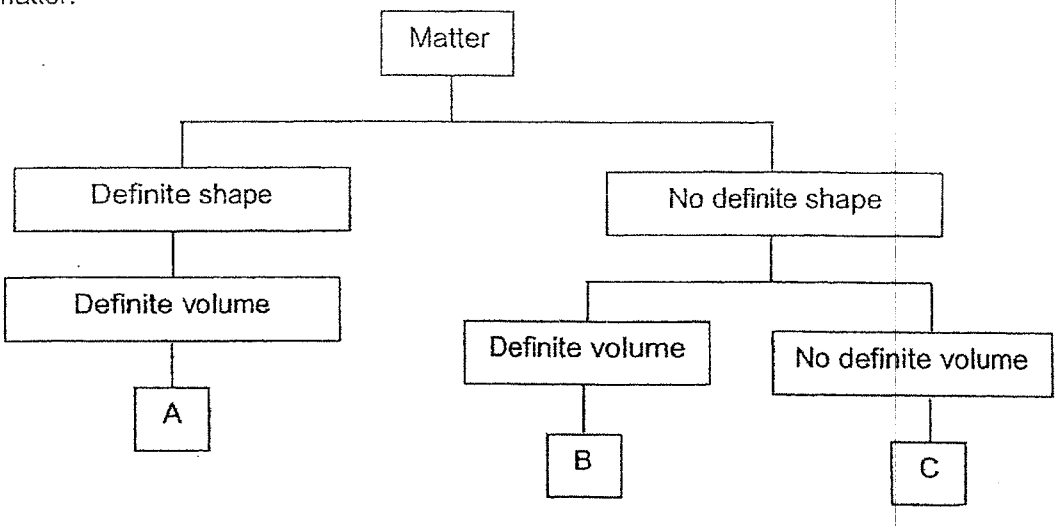
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**Part II (30 marks)**

Answer all the following questions.

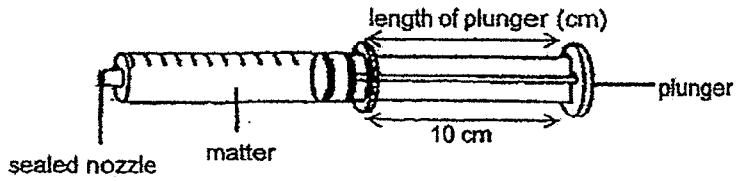
26. Look at the classification chart below. A, B and C are three different states of matter.




a) Identify the states of matter. [3m]

| Matter | A | B | C |
|---|---|---|---|
| State | | | |

b) June sealed the nozzles of three identical syringes. Next, she filled each syringe completely with A, B and C.




She measured the length of the plunger for each syringe after it had been pushed in. The table below shows her results.

Based on the length of the plunger, complete the table below with B and C to show what state of matter was in each syringe. [1]

| Length of plunger (cm) | 6 | 10 | 10 |
|---|---|---|---|
| Matter in syringe | | | A |

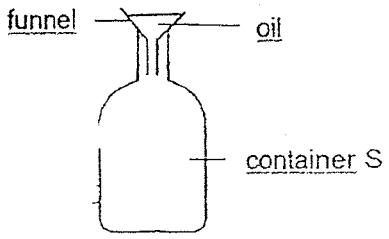
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27. Container S is fitted with a funnel as shown in the diagram below.




a) The oil in the funnel was not able to flow into container S when the funnel sat on the opening of the bottle. Explain why the oil could not flow through. [1m]

_____

_____

b) When the funnel was lifted, the oil in the funnel could flow into container S. Why was the oil able to flow into container S when the funnel was lifted? [2m]

_____

_____

c) It was observed that the oil which was previously in the funnel had a different shape from the oil in container S. State the reason for this by filling in the blanks below. [1m]

Oil is in _____ state which has _____ shape.

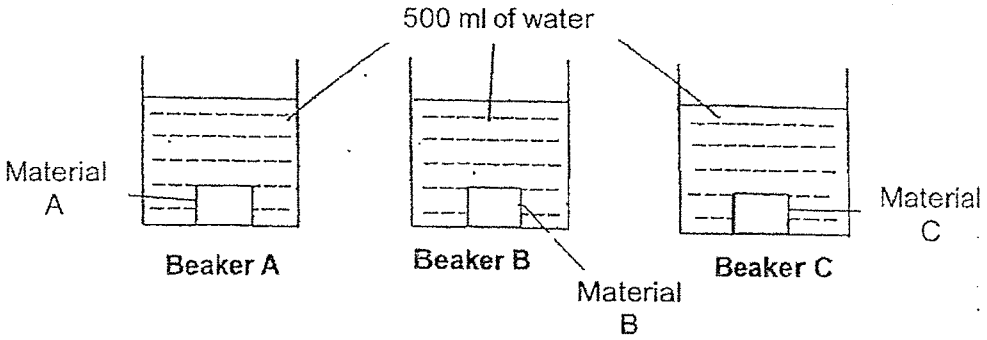
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28. Kate wanted to find out which material is the most suitable for making a bath towel. 3 different materials of the same shape and size were placed into a beaker containing 500 ml of water each, as shown in the diagrams below.




After 15 minutes, the materials were removed from the beaker and the amount of water left in each beaker was recorded as shown in the table below.

| Beaker | Amount of water left in beaker (ml) |
|---|---|
| A | 410 |
| B | 480 |
| C | 330 |

a) Arrange the materials, A, B and C, according to how much water they can absorb. [1m]

| | | |
|---|---|---|
| | | |

**Absorb the most water** → **Absorb the least water**

b) Based on the results in the table above, which material is the most suitable for making a bath towel? Explain your answer. [1m]

_____

_____

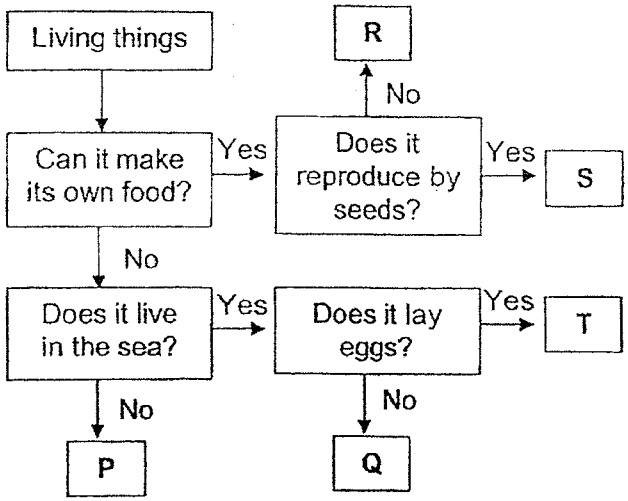
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29. Study the flow chart below.




a) Based on the flow chart, state a common characteristic between living things P and T. [1m]

_____

b) Which letter, P, Q, R, S or T, best represents a bird's nest fern? [1m]

_____

c) Based on the flow chart, describe living thing Q. [2m]

_____

_____

4



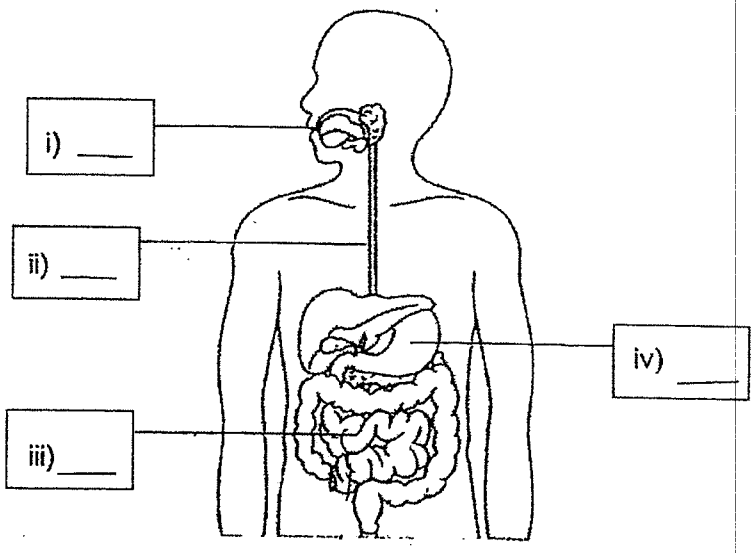
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30. The table below shows the amount of undigested food that enters some parts of the digestive system.

| Part of digestive system | Amount of undigested food as it enters the part of the digestive system (g) |
|---|---|
| E | 45 |
| F | 45 |
| G | 50 |
| H | 20 |

Based on the information in the table above, label the digestive organs with the correct letter, **E**, **F**, **G** and **H**. [2m]



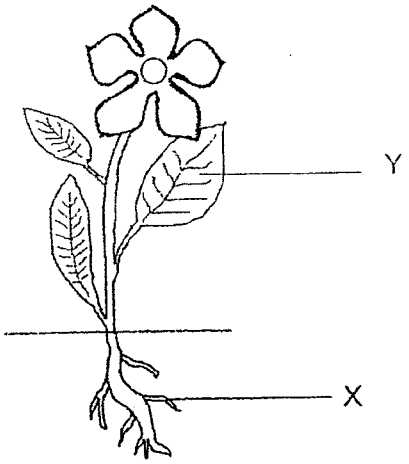

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31. The diagram below shows a flowering plant.




a) Parts X and Y enable the plant to survive.

i) Part X of the plant helps the plant to take in _____ and

_____

ii) It also helps to _____ [2m]

b) Part Y of the plant helps the plant to _____

_____ [1m]

3

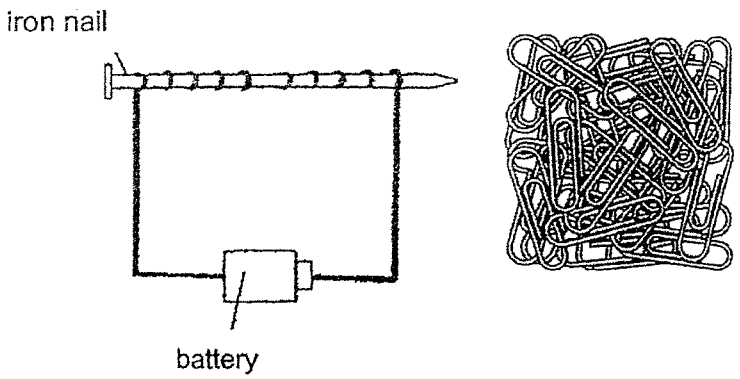


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32. Jack used a wire and coiled it around an iron nail to make an electromagnet.

Next, Jack used the magnet to attract some paper clips.




Suggest two ways to make the iron nail attract more paper clips. [2m]

1. _____

_____

2. _____

_____

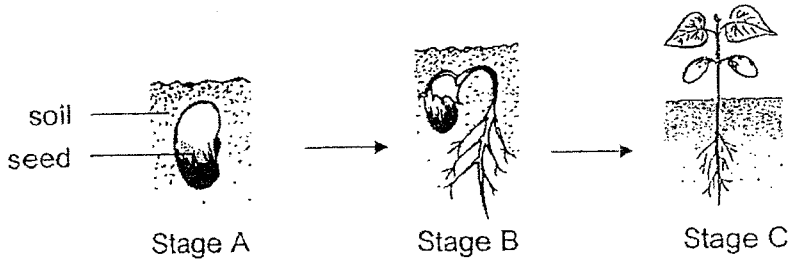
2



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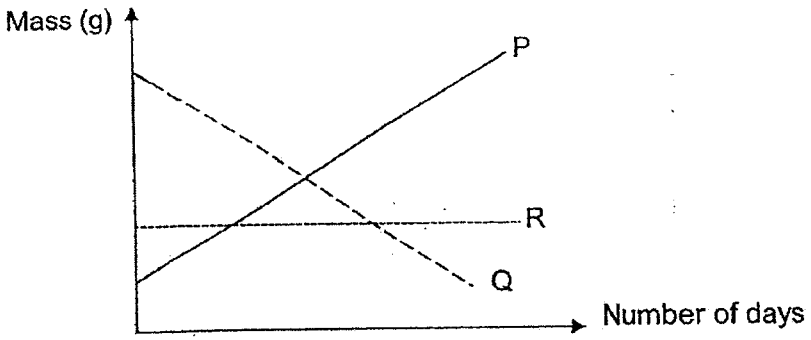
33. Study the diagram below which shows the stages of germination.




a) At which stage will the seedling be able to make its own food? Explain your answer. [2m]

b) State the 3 conditions needed for germination. [1m]

c)




Which line, P, Q, or R most likely represents the mass of seed leaves as the seed went through stages A to C? [1m]

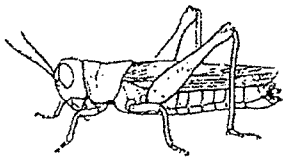
4



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34. Alice was asked to compare the life cycles of grasshopper and frog.



grasshopper



frog

Study the statements below and put a tick under 'True' or 'False' column. [3m]

| | | True | False |
|---|---|---|---|
| a) | Both the young of the grasshopper and the frog resembles the adult. | | |
| b) | Both the grasshopper and the frog have the same number of life cycle stages. | | |
| c) | Both the grasshopper and the frog spend their entire life cycle on land. | | |

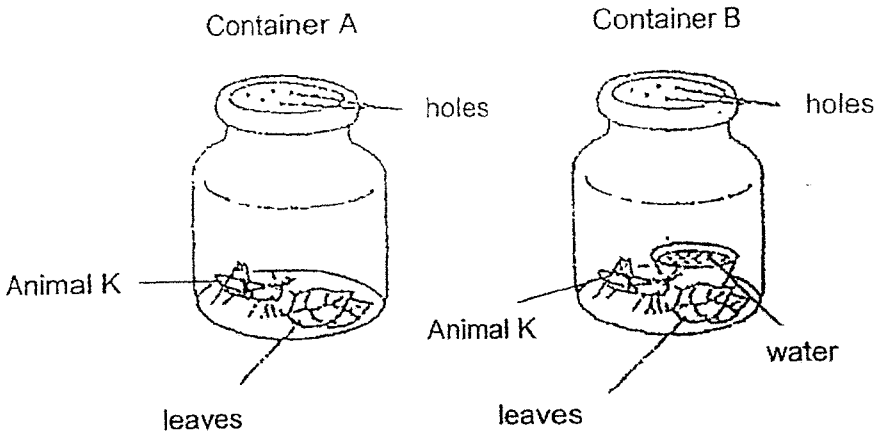
3



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35. Selene placed 2 Animal K in 2 identical containers as shown below.




a) Study the diagrams above. In the above experiment, state the difference which Selene made between the 2 set-ups. [1m]

_____

_____

b) After 2 weeks, in which container, A or B, will Animal K likely be dead or alive? [1m]

Dead: Container _____

Alive: Container _____

**End of Booklet B**

2



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SINGAPORE CHINESE GIRLS' SCHOOL (PRIMARY)
FIRST SEMESTRAL EXAMINATION 2022
**PRIMARY 4 SCIENCE**

Booklet A

| | | | | |
|---|---|---|---|---|
| 1) 4 | 6) 2 | 11) 4 | 16) 2 | 21) 1 |
| 2) 3 | 7) 3 | 12) 2 | 17) 3 | 22) 2 |
| 3) 1 | 8) 2 | 13) 3 | 18) 4 | 23) 4 |
| 4) 4 | 9) 3 | 14) 1 | 19) 1 | 24) 2 |
| 5) 1 | 10) 1 | 15) 2 | 20) 2 | 25) 3 |

Booklet B

| Qn | Suggested Answer |
|---|---|
| 26a. | Matter: A — **Solid**; B — **Liquid**; C — **Gas** (State) |
| 26b. | Length of plunger (cm): 6, 10, 10<br>Matter in syringe: C, B, A |
| 27a. | The air in container S occupied space and could not escape. |
| 27b. | Air in container S escaped when the funnel was lifted so oil could enter container S to take up the space previously occupied by air. |
| 27c. | Oil is a **liquid** which has **no definite / no fixed** shape. |
| 28a. | C, A, B |
| 28b. | Material C. Material C is able to absorb the most amount of water as there is the least amount of water left in Beaker C. |
| 29a. | Living things P and T cannot make their own food. |
| 29b. | R |
| 29c. | Living thing Q cannot make its own food, lives in sea and does not lay eggs. |
| 30 | i) G<br>ii) E<br>iii) H<br>iv) F<br>or<br>i) G<br>ii) F<br>iii) H<br>iv) E |



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<table>
<tr><td>31a.</td><td>i) Part X of the plant helps the plant to take in water and mineral salts.<br><br>ii) Part X also helps to hold / anchor the plant firmly to the ground / soil.</td></tr>
<tr><td>31b.</td><td>Part Y of the plant helps the plant to make food.</td></tr>
<tr><td>32.</td><td>Increase the number of batteries in the circuit.<br>Increase the number of coils of wire around the iron nail.</td></tr>
<tr><td>33a.</td><td>Stage C. The seedling will have green leaves to make food at Stage C.</td></tr>
<tr><td>33b.</td><td>Oxygen / Air, water and warmth</td></tr>
<tr><td>33c.</td><td>Line Q.</td></tr>
<tr><td>34</td><td>
<table>
<tr><th></th><th></th><th>True</th><th>False</th></tr>
<tr><td>a)</td><td>Both the young of the grasshopper and the frog resemble the adult.</td><td></td><td>✓</td></tr>
<tr><td>b)</td><td>Both the grasshopper and the frog have the same number of life cycle stages.</td><td>✓</td><td></td></tr>
<tr><td>c)</td><td>Both the grasshopper and the frog spend their entire life cycle on land.</td><td></td><td>✓</td></tr>
</table>
</td></tr>
<tr><td>35a.</td><td>There is no water in Container A but there is water in Container B.</td></tr>
<tr><td>35b.</td><td>Dead: Container A<br>Alive : Container B</td></tr>
</table>

END



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