SINGAPORE CHINESE GIRLS' SCHOOL (PRIMARY)

FIRST SEMESTRAL ASSESSMENT 2018

NAME: _____ ( ) DATE: 3 May 2018

CLASS: PRIMARY 5

Parent's Signature:

_____

SCIENCE

BOOKLET A

28 questions

56 marks

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

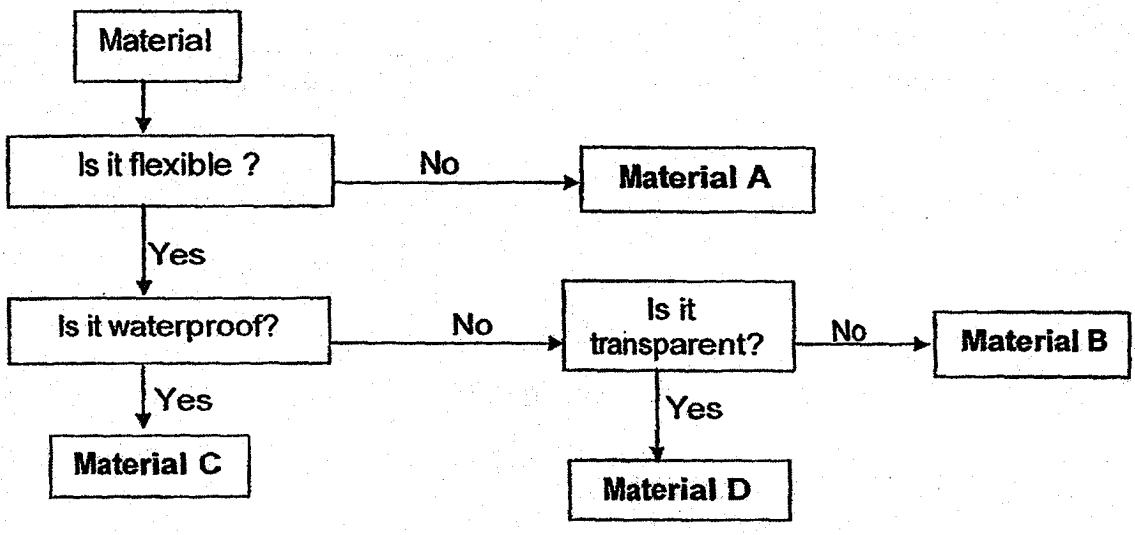
DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

FOLLOW ALL INSTRUCTIONS CAREFULLY.

Booklet A (56 marks)

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 (1, 2, 3 or 4) on the Optical Answer Sheet.**

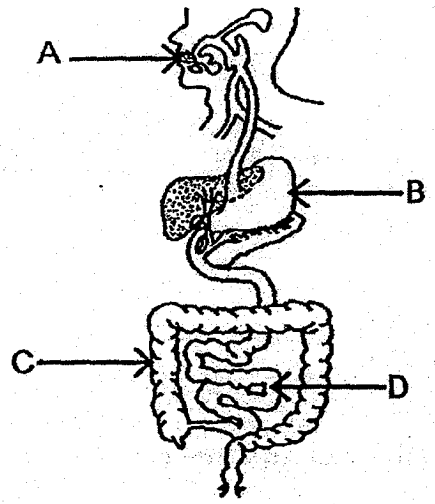
1. Study the classification chart below.



Which one of the materials should Calvin use to make a raincoat?

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

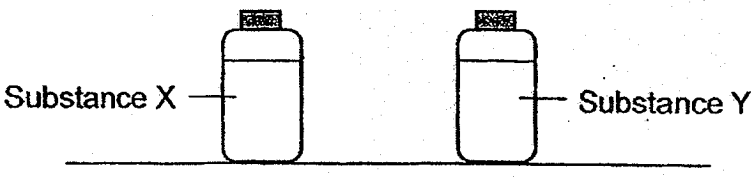
2. Study the diagram of the human digestive system shown below.



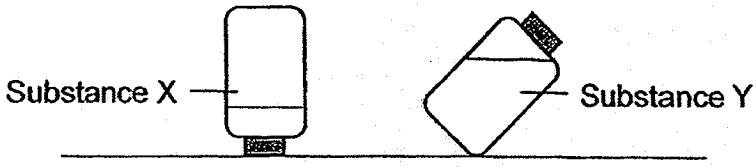
Which part of the human digestive system allows digested food to enter the bloodstream?

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

3. The diagram below shows 2 substances, X and Y, in 2 identical bottles.



Alexis then changed the position of the bottles and observed what happened to substances X and Y as shown below.

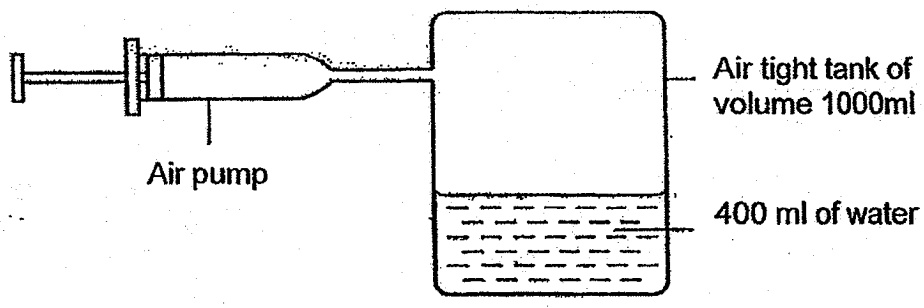


Which of the following statements are true about Substance X and Y?

A: Only Substance Y is a liquid.
B: Only Substance X is a gas.
C: Both Substance X and Y are liquids.
D: Substance X and Y cannot be compressed.

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

4. An experiment was set-up as shown below.



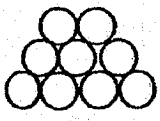
Which of the following will happen to the water and air in the tank after 3 more pumps of air was pumped into the tank?

	Volume of water	Volume of Air	Mass of Air
1)	Decrease	Increase	Increase
2)	Remain the same	Remain the same	Remain the same
3)	Decrease	Increase	Remain the same
4)	Remain the same	Remain the same	Increase

5. Which one of the following processes is common between human and plant reproduction?

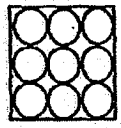
1) Germination
2) Seed dispersal
3) Pollination
4) Fertilisation

6. Delia has 9 identical marbles as shown below.

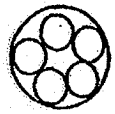


Marbles

She tried to put as many marbles as possible into different containers, P, Q and R, as shown below.



Container P
(9 marbles)



Container Q
(5 marbles)

Container R
(7 marbles)

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

1) The marbles cannot be compressed.
2) The marbles have no definite volume.
3) The marbles take the shape of the container.
4) The marbles have a definite volume but no definite shape.

7. Which one of the following diagrams below is the best representation of the composition of air in the surrounding?

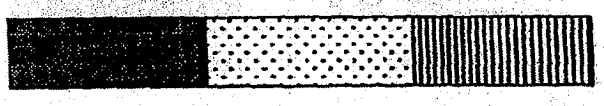
Legend:

Nitrogen Oxygen Other gases

1)

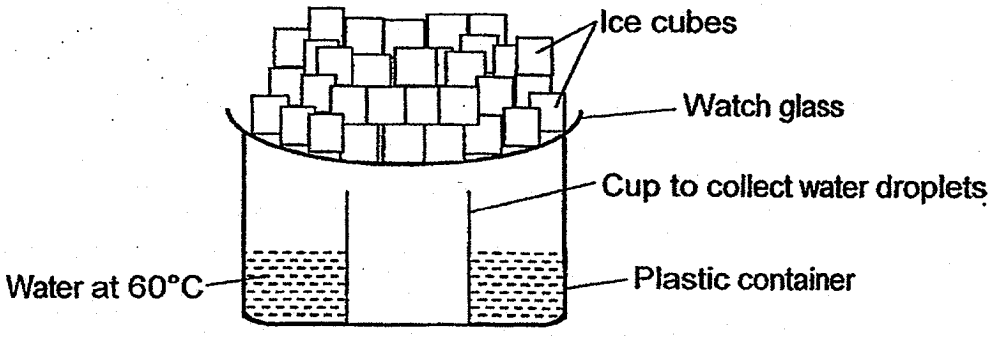
2)

3)



4)

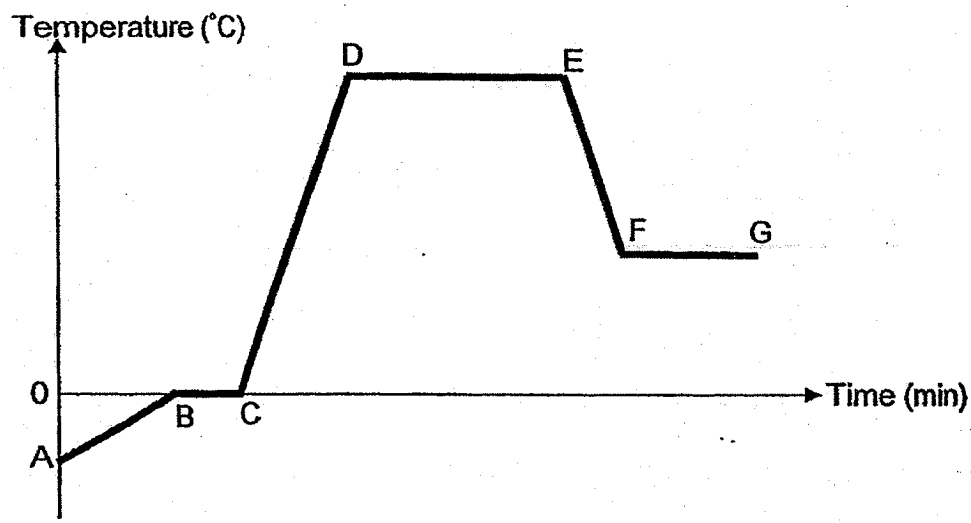
8. Janice set-up an experiment as shown below.



Which one of the following is the best method to increase the amount of water droplets collected in the cup?

1) Add more ice on the watch glass.
2) Use a bigger cup to collect the water droplets.
3) Increase the temperature of the water in the plastic container to 85°C.
4) Decrease the temperature of the water in the plastic container to 30°C.

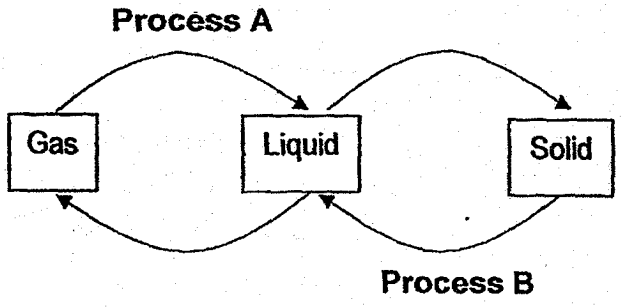
9. The graph below shows how the temperature of water changed over a period of time.



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

1) Water is freezing between FG.
2) Water is losing heat between AB.
3) Heat source is removed at point F.
4) Water is gaining heat between BC.

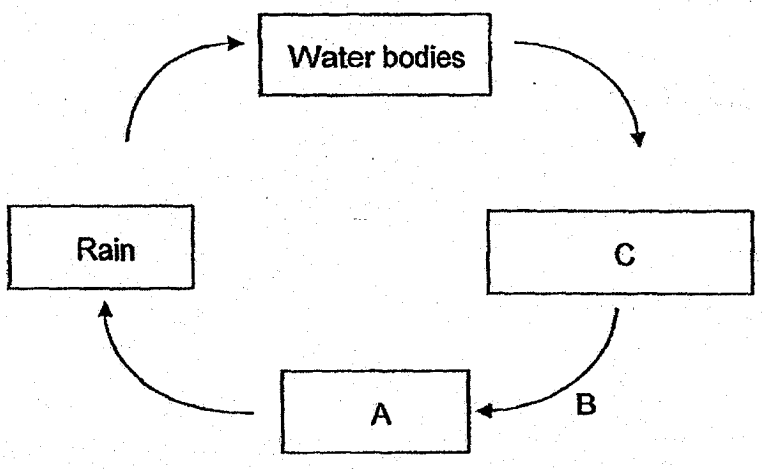
10. The diagram below represents the changes of state of water.



Which one of the following correctly represents processes A and B?

	Process A	Process B
1)	Condensation	Evaporation
2)	Freezing	Melting
3)	Evaporation	Freezing
4)	Condensation	Melting

11 The diagram below shows the water cycle.



What do A and B represent?

	A	B
1)	Water vapour	Evaporation
2)	Water vapour	Condensation
3)	Water droplets	Evaporation
4)	Water droplets	Condensation

12. The boiling point and melting point of 2 substances, P and Q are shown in the table below.

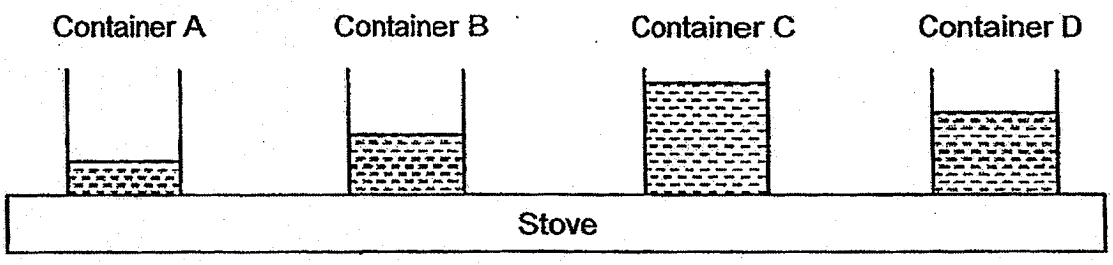
	Substances	
	P	Q
Boiling point	590°C	70°C
Melting point	2°C	5°C

At which temperatures are Substances P and Q liquids?

1) 0°C
2) 2°C
3) 15°C
4) 80 °C

13. Ivan heated Containers, A, B, C and D, on a stove for 30 minutes. The containers are made of different materials but are of the same size and thickness. They are filled with equal amounts of water at the start of his experiment.

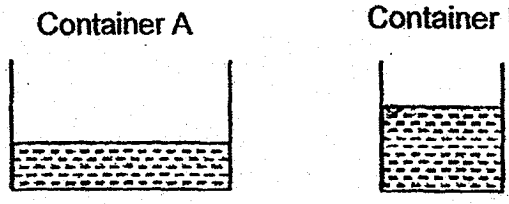
After 30 minutes, Ivan recorded the amount of water left in each container as shown below.



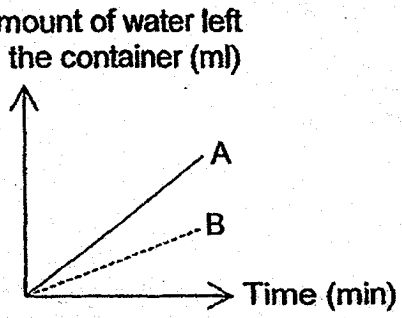
Arrange Containers, A, B, C and D, starting from the poorest conductor of heat to the best conductor of heat.

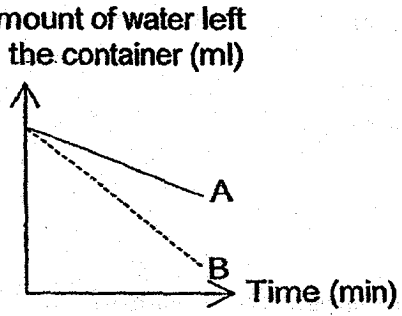
1) A, B, C, D
2) A, B, D, C
3) C, D, B, A
4) C, D, A, B

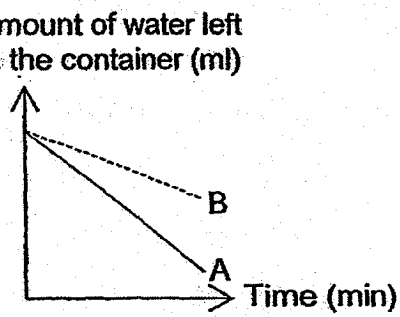
14. Wally poured an equal amount of water into 2 different Containers, A and B, as shown below. He placed them in the Science room and recorded how the amount of water in each container changed over a period of time.

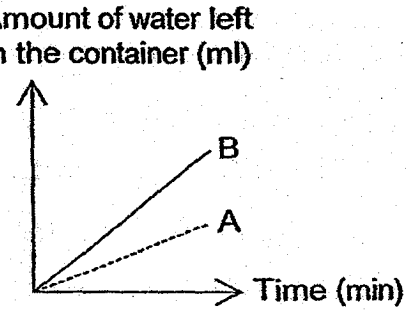


Which one of the following graphs correctly represents the above experiment?

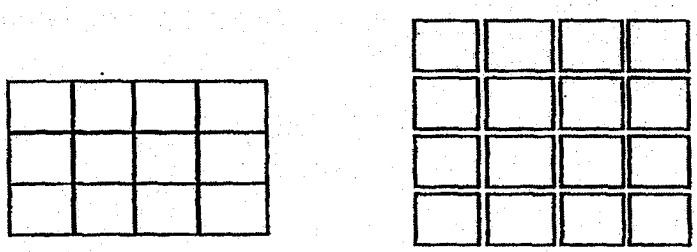
1) 

3) 

2) 

4) 

15. A worker laid identical floor tiles as shown in Layouts A and B below.

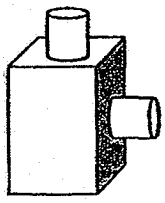


Layout A **Layout B**

Which one of the following correctly explains why the tiles in layout, A or B, crac on a hot day?

1) Layout B. The tiles lost heat and expanded.
2) Layout A. The tiles lost heat and contracted.
3) Layout A. The tiles gained heat and expanded.
4) Layout B. The tiles gained heat and contracted.

16. Which one of the following shadows **cannot** be formed by Object A when a torch is shone on it?



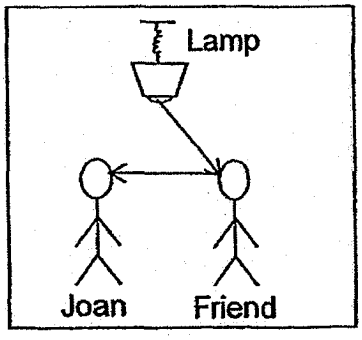
1) 

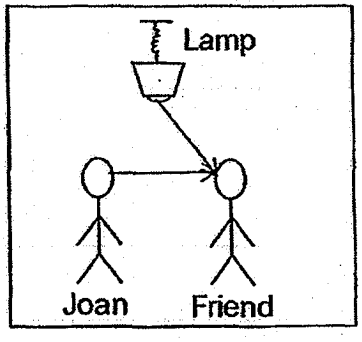
3) 

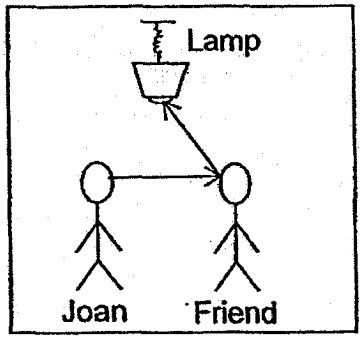
2) 

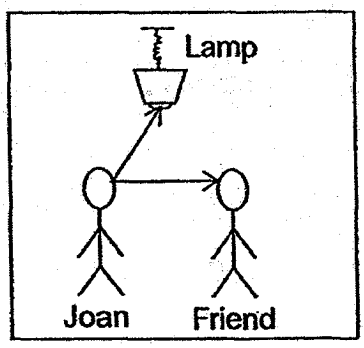
4) 

17. Which one of the following diagrams shows how light travels to Joan's eyes to enable her to see her friend?

1) 

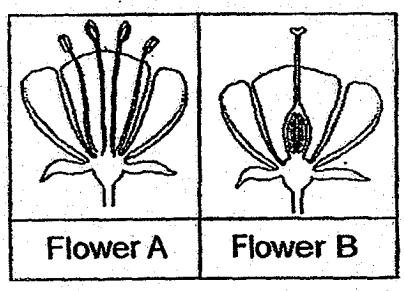
3) 

2) 

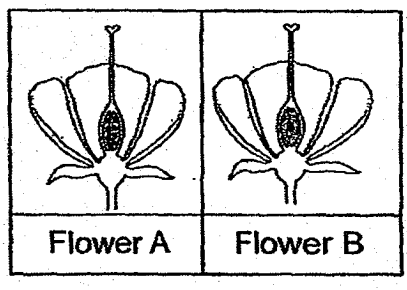
4) 

18. Pollen grains from Flower A pollinated Flower B resulting in a fruit with many seeds. Which of the following would most likely represent Flower A and Flower B?

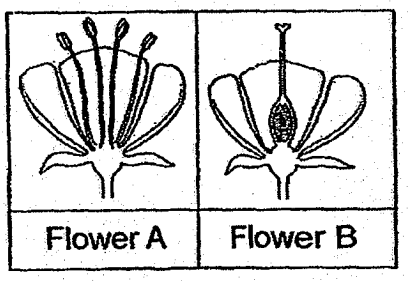
1)



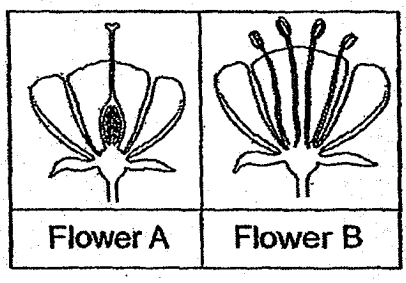
3)



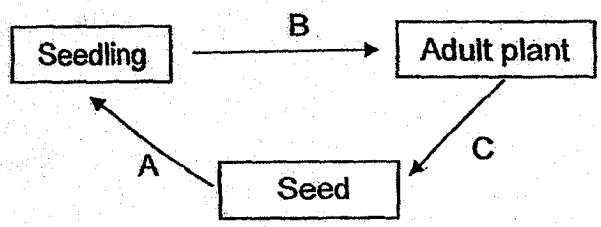
2)



4)



19. The diagram below shows the life cycle of a flowering plant.



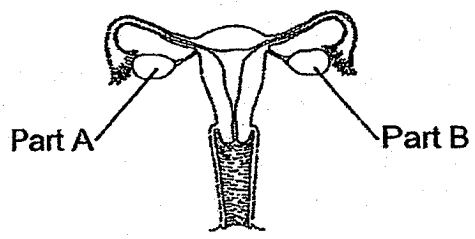
At which stages do the processes of fertilisation, seed dispersal and germination take place?

	Fertilisation	Seed dispersal	Germination
1)	A	B	C
2)	C	A	A
3)	C	B	C
4)	A	A	B

20. Which of the following statements about the life cycle of the cockroach and the chicken is true?

1) Both the young moult.
2) Both the young resemble the adult.
3) The young of the cockroach can fly but the young of the chicken cannot.
4) The cockroach has 4 stages in its life cycle but the chicken has 3 stages.

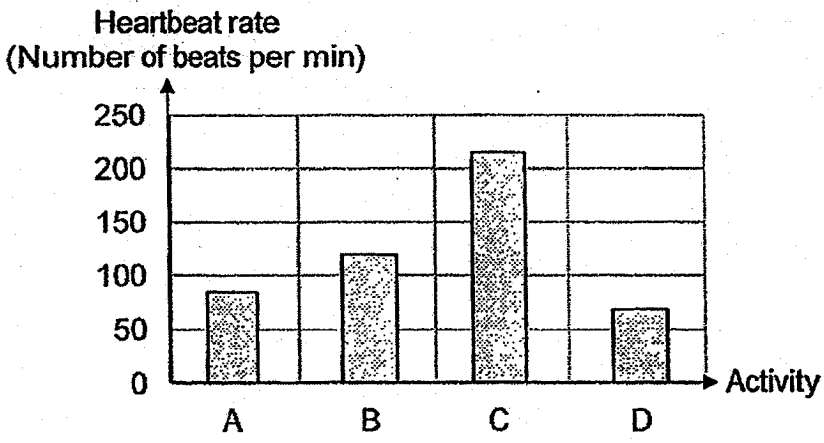
21. The diagram below shows the reproductive system of a human being.



Is the above system still able to function if only Part A has been removed?

1) No. The sperms will die.
2) No. There are no more eggs left.
3) Yes. Eggs can still be produced by Part B.
4) Yes. Sperms can still be produced by Part B.

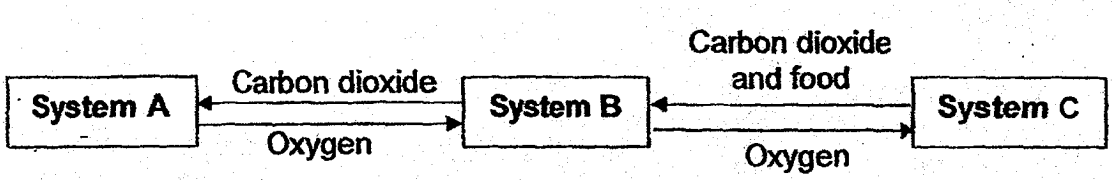
22. Matthew carried out 4 activities, A, B, C and D. He carried out each activity for 10 minutes and rested for 30 minutes before starting the next activity. He then recorded his average heartbeats per minute as shown in the graph below.



Based on the graph above, which one of the following, A, B, C and D matches his activities of sleeping, walking, running and reading?

	Activity A	Activity B	Activity C	Activity D
1)	running	walking	reading .	sleeping
2)	reading	sleeping	walking	running
3)	walking	sleeping	running	reading
4)	reading	walking	running	sleeping

23. The flowchart below shows how the human body systems work together.



What do Systems, A, B and C represent in the flowchart above?

	System A	System B	System C
1)	Respiratory	Circulatory	Digestive
2)	Circulatory	Respiratory	Digestive
3)	Digestive	Respiratory	Circulatory
4)	Digestive	Circulatory	Respiratory

24. Which of the following correctly shows the differences between inhaled air and exhaled air?

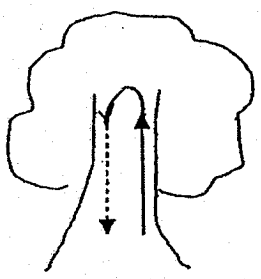
		Inhaled air	Exhaled air
A:	Amount of carbon dioxide	Lower	Higher
B:	Amount of oxygen	Higher	Lower
C:	Amount of water vapour	Higher	Lower
D:	Amount of dust	Lower	Higher

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

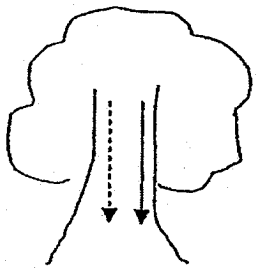
25. Which one of the diagrams below correctly represents the water-carrying tubes and food-carrying tubes in a plant?

Legend:
------ Food-carrying tubes
—— Water-carrying tubes

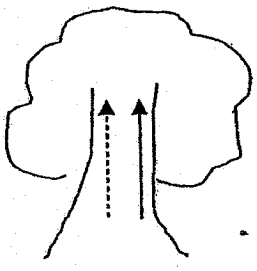
1)



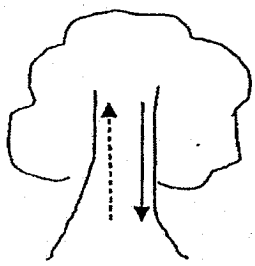
3)



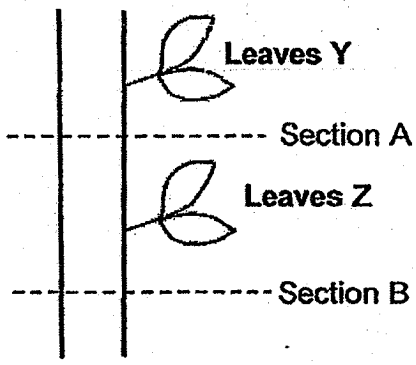
2)

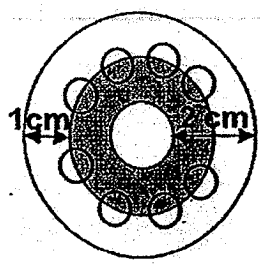


4)



26. Tania carried out an experiment using part of the stem of a plant as shown below.



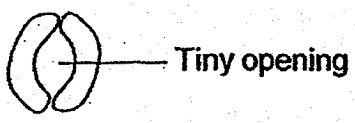


Cross section of stem

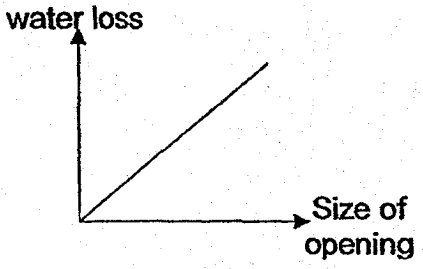
How should Tania cut Section A and B of the stem if her aim is to ensure that Leaves Y withered but Leaves Z are healthy?

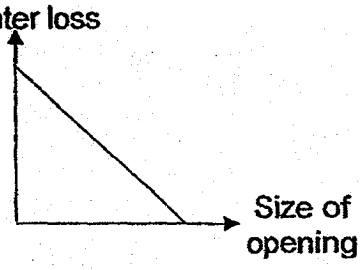
	Depth of cut at Section A	Depth of cut at Section B
1)	1 cm	1 cm
2)	1 cm	2 cm
3)	2 cm	2 cm
4)	2 cm	1 cm

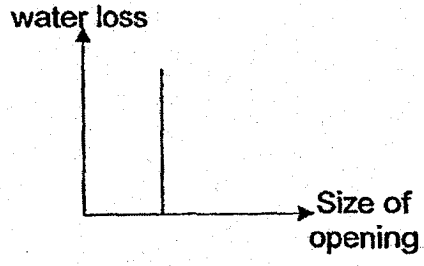
27. The diagram below shows a tiny opening found on a leaf surface observed through a microscope.

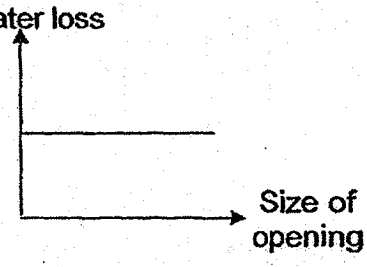


Which one of the following graphs correctly represents the relationship between the size of the tiny opening on the leaf and the amount of water loss?

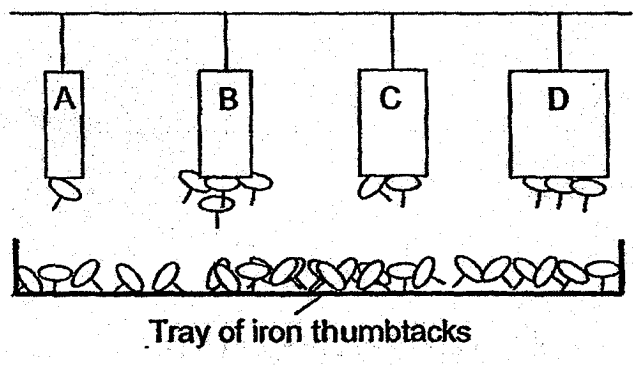
1) 

3) 

2) 

4) 

28. Stacy hung Magnets A, B, C and D from a pole. She then placed them above a tray of iron thumbtacks. Her observation is as shown below.



Based on the results above, which one the following could be the aim of her experiment?

1) To find out if magnets rest in North-South direction.
2) To find out if all magnets attract non-magnetic materials
3) To find out if the magnetic strength of a magnet is dependent on its size.
4) To find out if the number of thumbtacks affect the magnetic strength of a magnet.

SINGAPORE CHINESE GIRLS' SCHOOL (PRIMARY)

FIRST SEMESTRAL ASSESSMENT 2018

NAME: _____ ( ) DATE: 3 May 2018

CLASS: PRIMARY 5 SY / C / G / SE / P

Parent's Signature:

SCIENCE

BOOKLET B

	Total Actual Marks	Total Possible Marks
Booklet A		**56**
Booklet B		**44**
Total		**100**

12 questions

44 marks

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

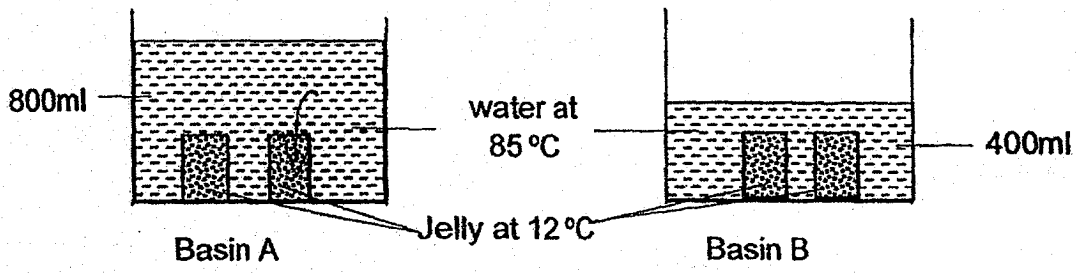
DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

FOLLOW ALL INSTRUCTIONS CAREFULLY.

Part II (44 marks)

Answer all the following questions.

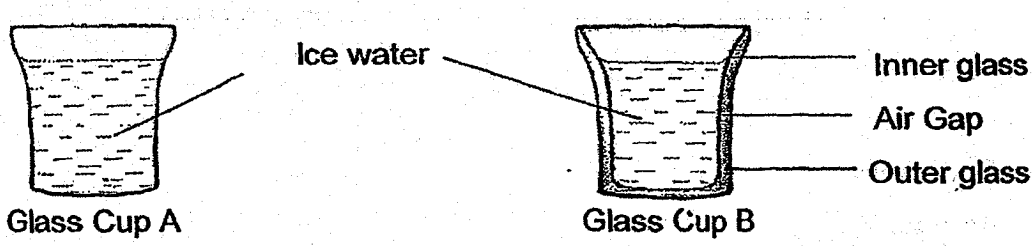
29. a) Sealed packets containing equal amounts of jelly at 12°C are put in 2 basins, A and B. Basin A contained 800ml of water and Basin B contained 400ml of water both at 85°C. The set-ups are shown below.



(i) In which basin, A or B, would the jelly gain more heat after 10 min? Explain your choice. (2m)

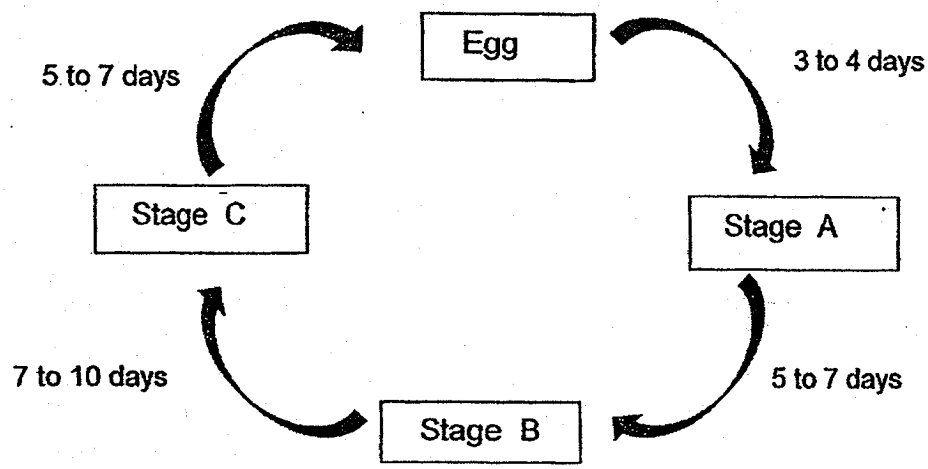
(ii) Without changing the basins, suggest one thing Elaine could do to make the jelly in both Basins A and B become hot faster. (1m)

b) Elaine had 2 types of glass cups, A and B. She poured equal amount of water at 3°C into both cups. She left both glass cups on the table and observed that water in Cup B was cooler than the water in Cup A after 5 minutes.



What helped the water in Glass Cup B remain cooler than the water in Glass Cup A? Explain. (2m)

30. The diagram below shows the duration at each stage of the life cycle of Insect K.



a) Besides the egg stage, which Stages, A, B or C, is a stage which does not require any food intake by Insect K? (1m)

Stage _____

b) What is the **least** possible number of days for Insect K after hatching to develop into an adult? (1m)

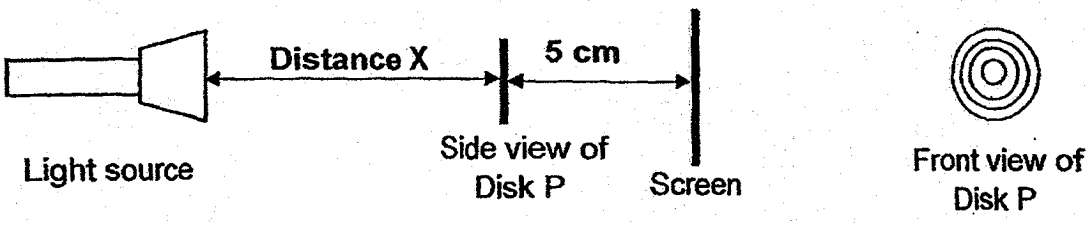
_____

c) What will happen to the number of Insect K if all the eggs hatch into females only? (1m)

_____

_____

31. Jason placed Disk P between the light source and the screen as shown below. Disk P was 5 cm away from the screen.



Jason recorded the height of the shadow formed on the screen in the table below as he changed Distance X.

Distance X (cm)	Height of shadow formed on the screen (cm)
5	10
10	6
15	2

a) What is the relationship between Distance X and the height of the shadow formed on the screen? (1m)

_____

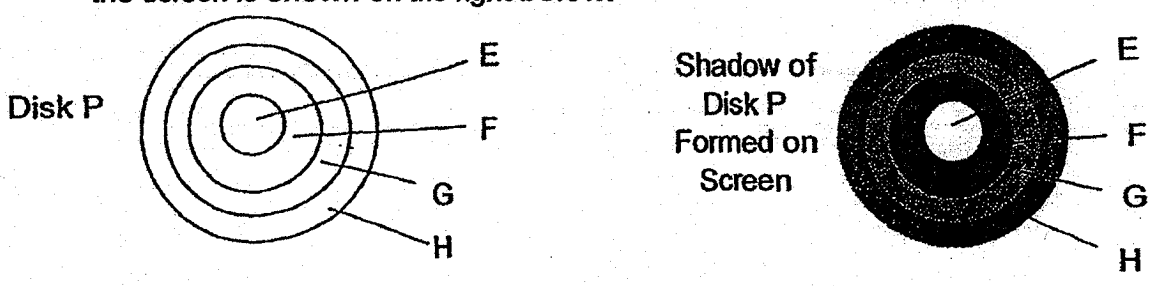
_____

b) With Distance X fixed and unchanged at 10 cm, what could Jason do to reduce the height of the shadow formed on the screen? (1m)

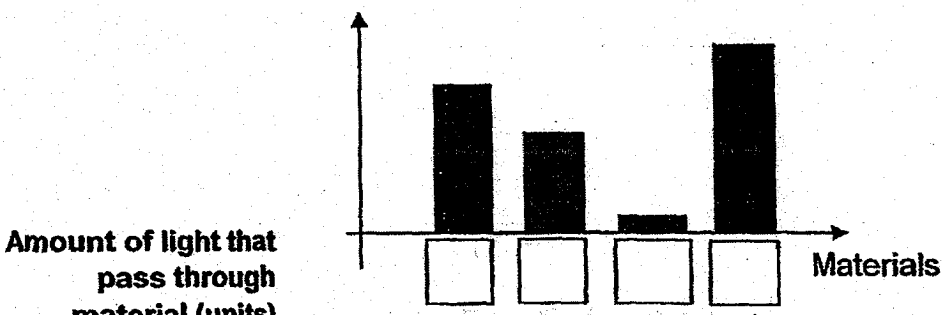
_____

_____

c) Disk P was made of different materials, E, F G and H. The shadow formed on the screen is shown on the right below.



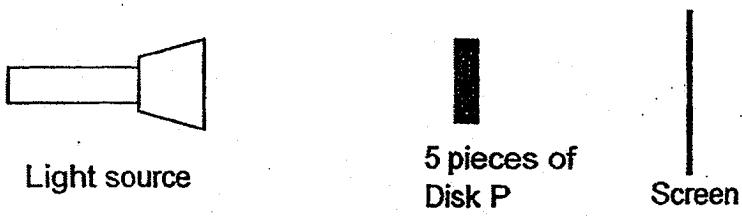
On the bar graph below, fill in the boxes with E, F, G or H to show the amount of light that passes through Materials E. F, G and H. (2m)



4

(continue from page 3)

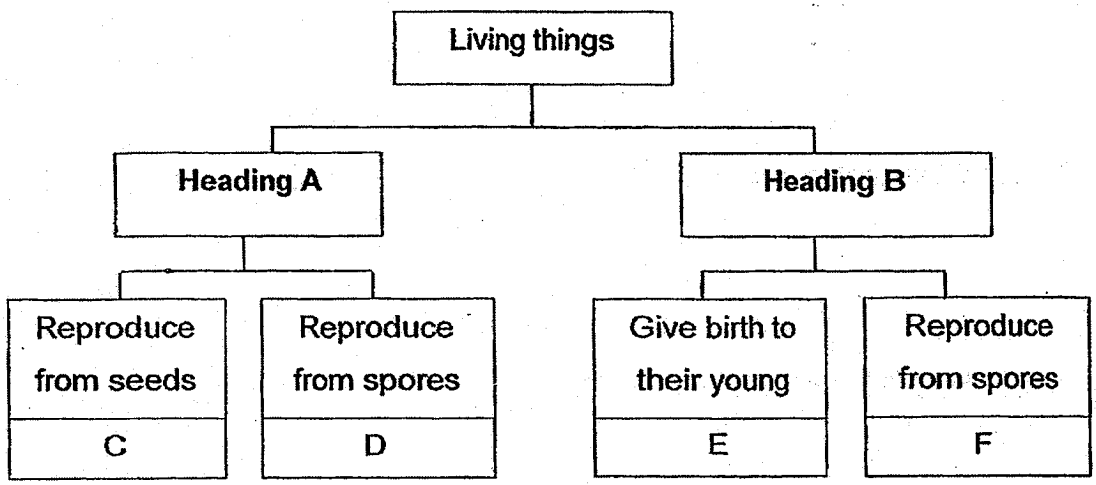
31.



d) What would happen to the amount of light that passed through Material G when 5 pieces of Disk P were stacked together as shown above? (1m)

_____

32. The chart below shows a classification of living things.



a) Write a suitable heading for A and B. (1m)

Heading A:	
Heading B:	

b) Based on the classification chart above, Elaine concluded that E is definitely a mammal. Do you agree with her? Explain you answer. (1m)

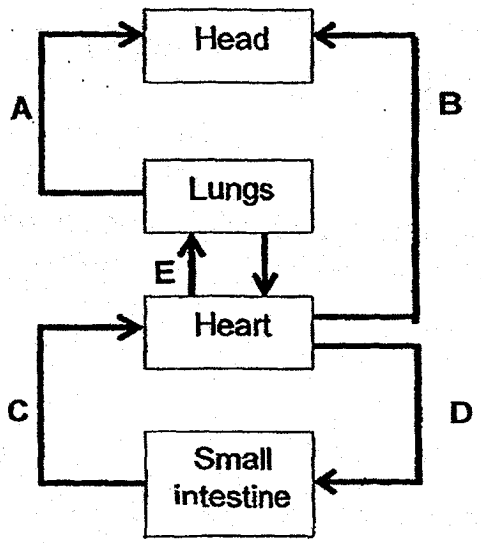
_____

_____

c) Which groups, C, D, E and F, require fertilization to reproduce? (1m)

_____

33. The diagram below shows how blood flows in different parts of the body in blood vessels, A, B, C and D.



a) Which arrow A, B, C or D is **wrongly** drawn? (1m)

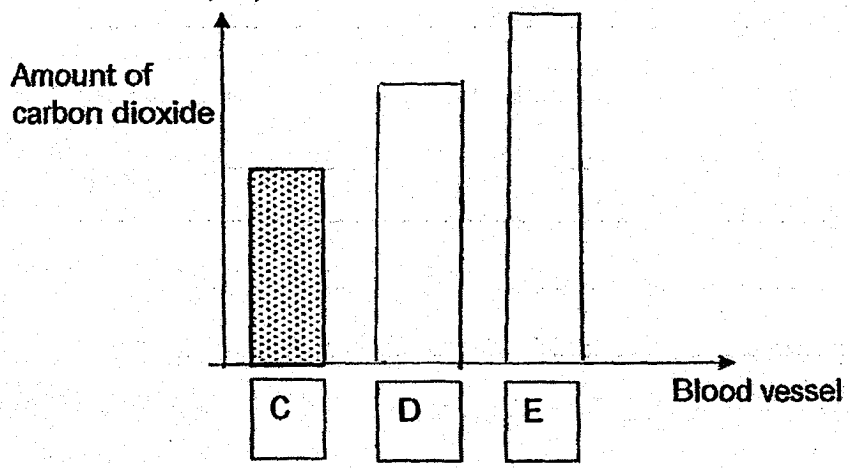
_____

b) Why is the amount of oxygen in Blood Vessel C less than at Blood Vessel D? (1m)

_____

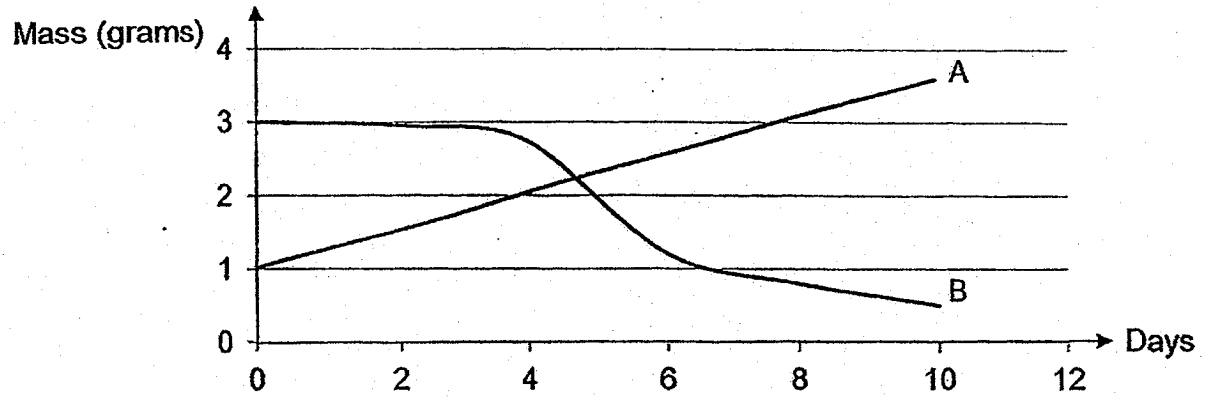
_____

c) In the graph below, a bar has been drawn to show the amount of carbon dioxide present at Blood Vessel C.
Draw 2 more bars to show the amount of carbon dioxide present at Blood Vessels D and E. (2m)

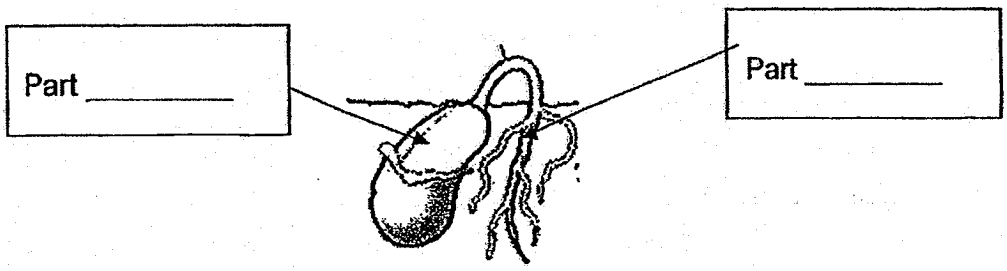


4

34. a) The graph below shows how the masses of the Part A and Part B of a seed change as it germinates into a seedling.



Based on the graph above, identify the parts A and B, by filling in the boxes below with the letters. (2m)



ii) Explain why Part B loses its mass as the seed becomes a seedling. (1m)

_____

b) The table describes the conditions of 4 pots of seeds.

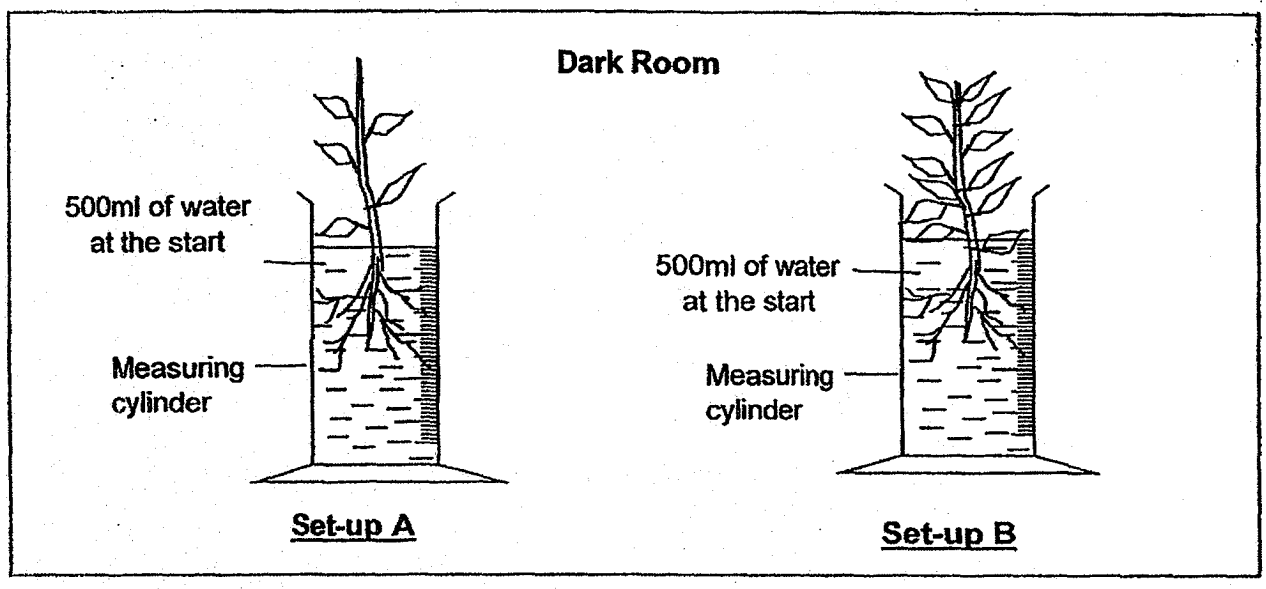
Pot	Number of Seeds	Water Given (cm^3)	Seeds Coated with wax	Temperature (°C)
P	20	20	Yes	30
Q	15	20	No	2
R	18	0	No	30
S	18	30	No	0

It was found that all the seeds could **NOT** germinate. In the table below, indicate what the seeds lacked in each pot which caused this to happen. (2m)

Pot	**What prevented the seeds from germinating?**
P	Lack of _____
Q	Lack of _____
R	Lack of _____
S	Lack of _____

35. Lena prepared Set-ups A and B as shown below.

Both set-ups were placed in a dark room for 2 days.

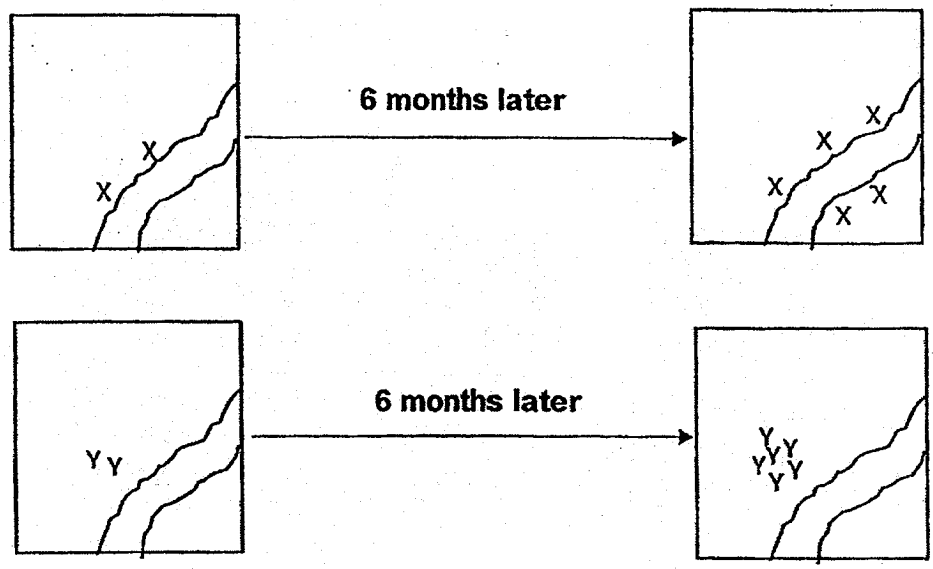


a) In which set-up would there be more water left in the measuring cylinder after 2 days? Explain. (2m)

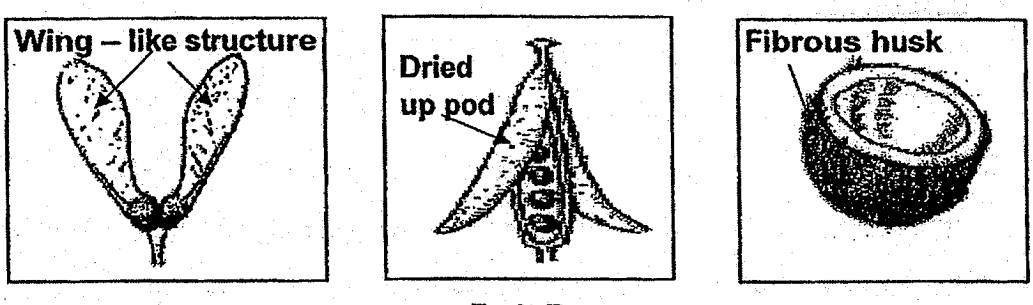
b) 470 ml of water was left in the Set-up A after 2 days. Lena concluded that 30 ml of water must be taken in by the plant.
Her teacher told Lena that she was wrong. Explain why Lena was wrong. (1m)

3

36. Study the dispersal patterns, X and Y, of 2 fruits as shown below.



Study the 3 Fruits, A, B and C as shown below.

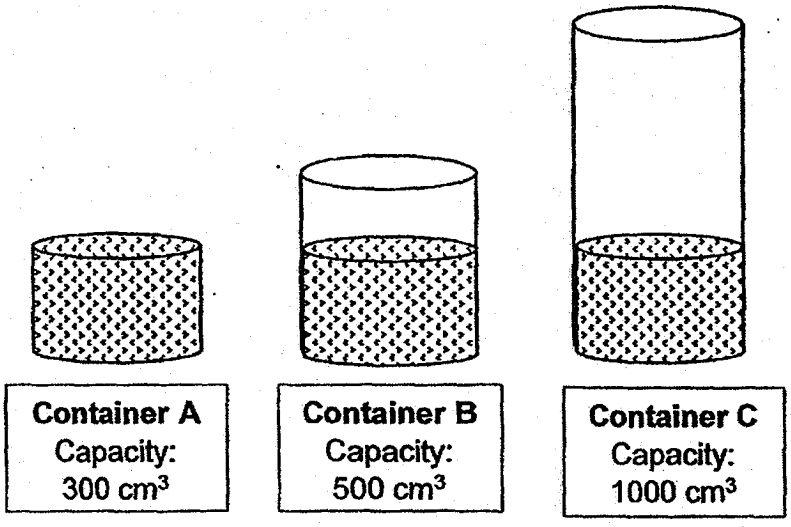


Fruit A **Fruit B** **Fruit C**

In the table below, indicate which fruit matches the dispersal patterns, X and Y, and specify the dispersal method used by the fruit. (2m)

	Dispersal Pattern	Fruit	Dispersal Method
(a)	X		
(b)	Y		

37. Inez placed 300 cm^3 of cooked rice each into 3 containers of different capacities as shown below. All 3 containers are tightly sealed and placed at room temperature.



a) Which container would have the least amount of mould after 3 days? Explain. (2m)

_____

_____

b) Explain why the experiment cannot be done without sealing the containers. (1m)

_____

_____

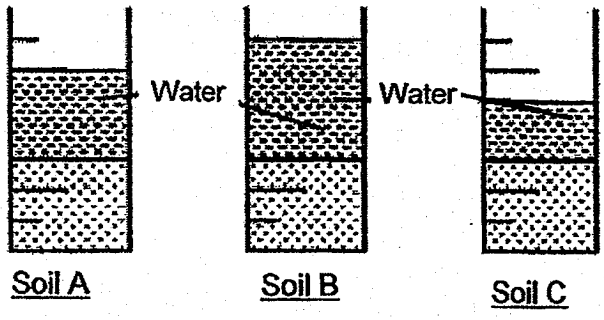
c) Suggest what Inez could do to ensure all 3 containers of cooked rice would not grow mould after 3 days. (1m)

_____

_____

4

38. An equal amount of Soil A, Soil B and Soil C, was each placed into identical measuring cylinders as shown below. An equal amount of water was then poured into each measuring cylinder containing the soil.
After 30 minutes, the water levels in the measuring cylinders for the different soils were as shown below.

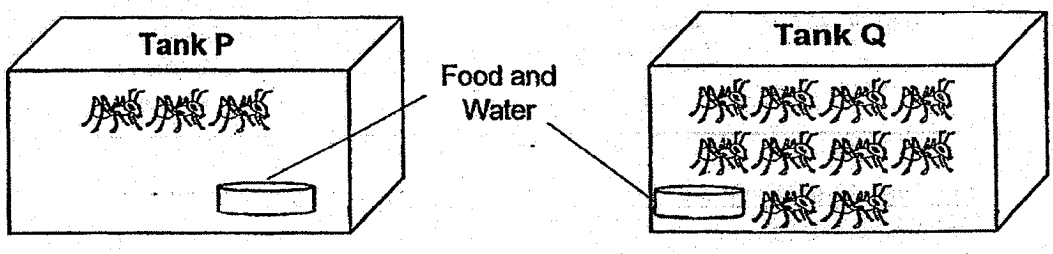


a) When water was first poured into each soil, air bubbles will appear at the soil surfaces. Most air bubbles will appear at the surface of Soil _____.1m)

b) Explain what caused the air bubbles to appear. (1m)

_____

39. Sally placed a different number of Insect K in Tanks P and Q as shown below. Both the tanks are sealed tightly and the insects are provided with enough food and water to last a week.



a) In the table below, indicate if the amount of the gases **increase, decrease or remain the same** in both tanks after 3 hours by putting a tick (✓) under the correct column. (3m)

Type of Gas	Increase	Decrease	Remain the same
Oxygen			
Nitrogen			
Carbon Dioxide			

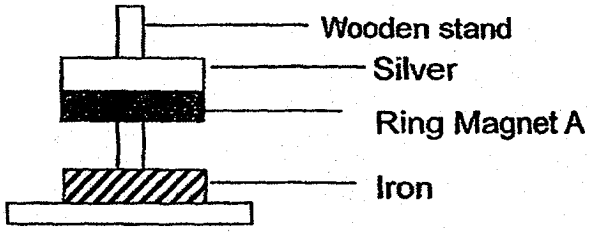
b) After a week, Sally found that all the insects in Tank Q died but 2 of the insects in Tank P were still alive. Explain. (1m)

_____

_____

40. a) A sliver ring, an iron ring and a ring magnet were slotted onto a wooden stand with the iron ring at the bottom, the ring magnet in the middle and the silver ring on top.

Leonard predicted the results by drawing the diagram shown below.

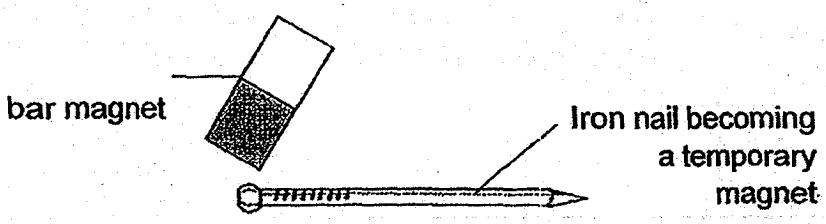


Leonard's teacher told him his prediction was wrong.
Help Leonard by replacing one of the rings with another type of ring and explain how this change will make his prediction possible. (2m)

_____

_____

b) Linda tried to make a temporary magnet by stroking an iron nail with a bar magnet as shown below.



After stroking 30 times, Linda tried to use the temporary magnet to attract some steel paper clips.
She found that it could **not** attract any paper clip at all.

Give 2 possible reasons why the steel paper clips could not be attracted. (2m)

Reason 1: _____

Reason 2: _____

4

SCHOOL : SCGS PRIMARY SCHOOL
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : 2018 SA1

SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	2	2	4	4	1	2	1	3	4
Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
2	3	3	2	3	3	1	2	2	4
Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
3	4	1	1	1	2	1	3		

P5 SEMESTRAL ASSESSMENT 1 (SCIENCE) 2018
ANSWER KEY

Note:
All **scientific concepts** (in bold) must be clearly shown.
In cases where they are unclear or not shown, marks will not be awarded.

SECTION B (44 marks):

<table>
<tr><th>Qn</th><th>Correct/ Acceptable Ans</th></tr>
<tr><td>29ai</td><td>Jelly in Basin A would gain more heat because
Basin A contained more hot water than Basin B,
Thus there was more heat in Basin A to be conducted/transferred from hot water to the jelly than in Basin B.</td></tr>
<tr><td>29aii</td><td>Elaine could add more water at/ above 85°C/ boiling water / add hotter water.</td></tr>
<tr><td>29b</td><td>The air is a poor conductor of heat
and
thus heat is conducted/ transferred more slowly from the surroundings to the water</td></tr>
<tr><td>30a
30b</td><td>Stage <u>B</u>
12 days <min duration of larval and pupal stages – 5+7 =12)</td></tr>
<tr><td>30c</td><td>The number will decrease/ become less/ fewer / become smaller number.</td></tr>
<tr><td>31a
31b</td><td>When Distance X increases, the height of the shadow decreases.
Move the screen nearer to Disk P/ the object.
OR – Move both the torch and Disk P (keeping Dist X as 10cm) nearer to the screen.</td></tr>
<tr><td>31c
31d</td><td>G H F E
Amount of light passing through will decrease/ become less.</td></tr>
<tr><td>32a</td><td>Heading A: Plants / can make own food
Heading B: Not Plants/ Non Plants / cannot make own food</td></tr>
<tr><td>32b</td><td>No. E may be a fish/ reptile that gives birth to young alive.
OR No, guppy (or specific animal) gives birth to live young and it is not a mammal.</td></tr>
<tr><td>32c</td><td>C and E</td></tr>
<tr><td>33a</td><td>A</td></tr>
<tr><td>33b</td><td>The small intestine used some of the oxygen to function/ for energy, thus there is less oxygen at C</td></tr>
<tr><td>33c</td><td>Bar D to be lower than C (less CO_2)
Bar E to be higher than C (more CO_2)</td></tr>
<tr><td>34ai
34aii</td><td>Box on left: Part B Box on right: Part A
The (baby) plant used up/ used and depleted the food in the seed leaves/ Part B as it germinates into a seedling.</td></tr>
<tr><td>34bi</td><td>Concept: Seeds require water, warmth and air to germinate.
<table>
<tr><td>P</td><td>Lack - Air/ Water/ Air and Water</td></tr>
<tr><td>Q</td><td>Lack - warmth</td></tr>
<tr><td>R</td><td>Lack - water</td></tr>
<tr><td>S</td><td>Lack - warmth</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Qn</th><th>Correct/ Acceptable Ans</th></tr>
<tr><td>35a</td><td>Set-up A as the plant A has fewer leaves , so it will lose less water/ water vapour / water through the leaves and take in less water through roots than the plant in Set-up B</td></tr>
<tr><td>35a
8635b</td><td>Some of the water was not taken in by the plant only as some was lost through evaporation.</td></tr>
<tr><td>36</td><td>
<table>
<tr><th></th><th>Dispersal Pattern</th><th>Fruit</th><th>Dispersal Method</th></tr>
<tr><td>(a)</td><td>X</td><td>C</td><td>By water</td></tr>
<tr><td>(b)</td><td>Y</td><td>B</td><td>By splitting</td></tr>
</table>
</td></tr>
<tr><td>37a</td><td>Container A (1m).
AND
It has the least air / has less air than Containers B and C.</td></tr>
<tr><td>37b</td><td>They must be sealed so that air/ water vapour/ mould spores from outside won't enter the containers and affect the result. (Experiment must fix amount of test variable for set-ups so that results can be compared).</td></tr>
<tr><td>37c</td><td>Specify the action taken:
Put all containers in the freezer / fridge/
Put substance to absorb water/ moisture in all 3 containers
OR Vacuum out the air from the 3 containers</td></tr>
<tr><td>38a</td><td>C</td></tr>
<tr><td>38b</td><td>Air (in air spaces) took up space in the soil
AND
Water took up the space (previously) occupied by the air and cause the air to come out / escape as bubbles..</td></tr>
<tr><td>39a</td><td>Concept:
Oxygen is taken in and carbon dioxide given out by living things during respiration.
Ans:
<table>
<tr><th>Type of Gas</th><th>Increase</th><th>Decrease</th><th>Remain the same</th></tr>
<tr><td>Oxygen</td><td></td><td>v</td><td></td></tr>
<tr><td>Nitrogen</td><td></td><td></td><td>v</td></tr>
<tr><td>Carbon Dioxide</td><td>v.</td><td></td><td></td></tr>
</table>
</td></tr>
<tr><td>35b
3916</td><td>There are more insects in Tank Q than in Tank P, <u>using up the oxygen faster</u> than in Tank P.</td></tr>
<tr><td>40a.</td><td>Change the iron ring into another magnet
AND
Place the both the magnets with the like poles facing each other to make the 2 magnets can repel.</td></tr>
<tr><td>40b</td><td>Any 2 of the following:
- Paper clips are too heavy
- Did not stroke enough times
- Did not stroke in only one direction/ changed direction in stroking halfway/ changed the pole for stroking halfway</td></tr>
</table>