

**SINGAPORE CHINESE GIRLS' SCHOOL
FIRST SEMESTRAL ASSESSMENT 2012**

**SCIENCE
PRIMARY FIVE**

NAME: _____ ()

DATE: _____

CLASS: PRIMARY 5 SY / C / G / SE

30 questions

60 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.

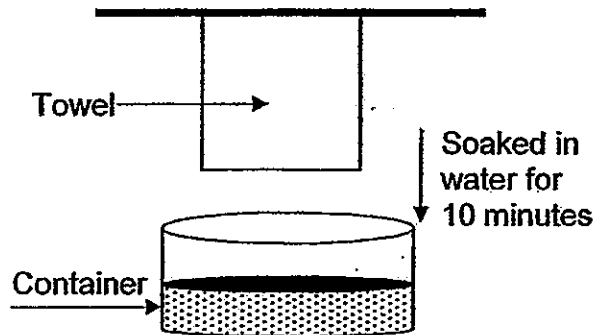
Part 1 (60 marks)

For each question from 1 to 30, 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. Elton conducted an experiment to find out which towel is the best for absorbing his sweat. He used 4 similar towels A, B, C and D that were made of different materials. Each towel was soaked in 1000ml of water for 10 minutes. Next, he pulled the towels out and measured the volume of water left in the container.



He recorded the results of his experiment in the table shown below.

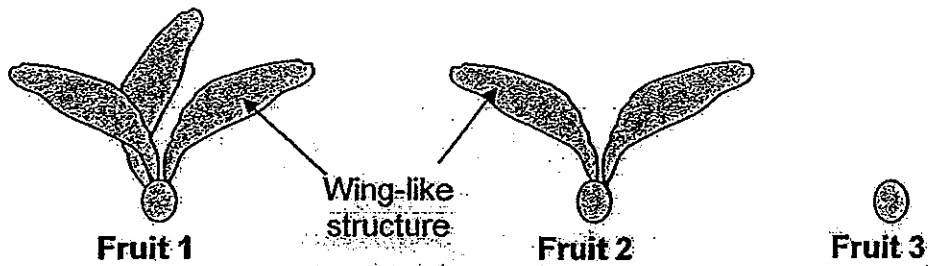
Towel	Amount of water left in container (ml)
A	45
B	120
C	180
D	135

Based on his results above, which towel should he choose?

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



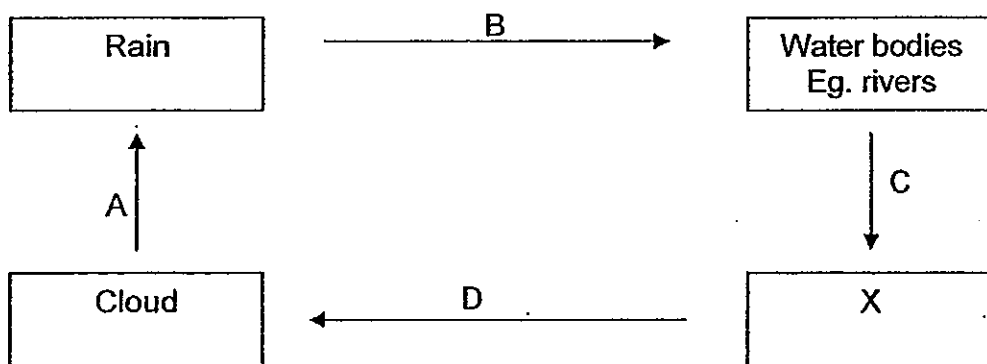
2. Leeli released 3 fruits as shown in the diagrams below from a height of 5 metres. She then timed how long each fruit stayed in the air before landing on the ground.



Which one of the following timings is most likely to be correct?

Time stayed in the air before landing on the ground (seconds)			
	Fruit 1	Fruit 2	Fruit 3
(1)	4.2	5.2	1.2
(2)	5.2	4.2	1.2
(3)	4.2	4.2	0
(4)	1.5	4.2	0

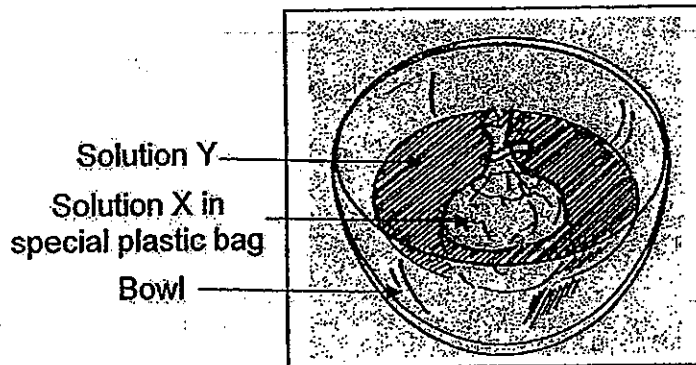
3. Study the water cycle below carefully.



Which process(es) of the water cycle show(s) a change from liquid state to gaseous state?

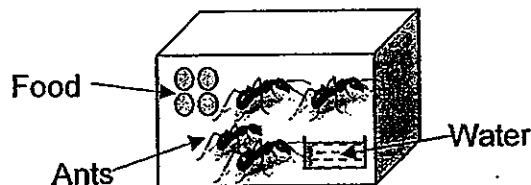
- (1) A only
 (2) C only
 (3) B and X only
 (4) C and D only

4. Yale poured some Solution X into a special plastic bag and fastened it so that no Solution X can flow out. Next, she poured Solution Y into a big bowl and placed the plastic bag of Solution X into the bowl. She observed that Solution X changed colour but not Solution Y.



Based on her setup above, which part of a plant cell has a similar function as the special plastic bag?

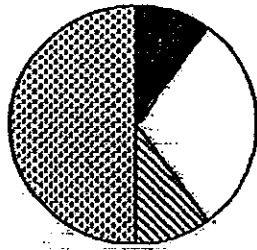
- (1) Cell membrane
 - (2) Cell wall
 - (3) Chloroplast
 - (4) Cytoplasm
5. Ian placed some ants in an air-tight container as shown below.



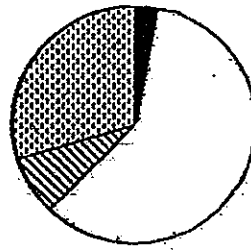
He observed that the ants died after a few weeks. Based on the above experiment, what can he conclude about living things?

- (1) Living things cannot live alone.
- (2) Living things cannot live without air.
- (3) Living things cannot live in containers.
- (4) Living things cannot live without air, food and water.

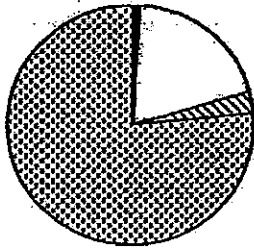
6. Which one of the following pie charts below correctly shows the composition of air in our environment?



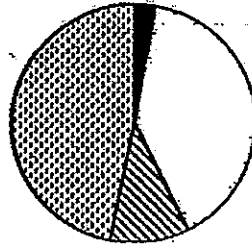
(1)



(3)



(2)



(4)

Legend:

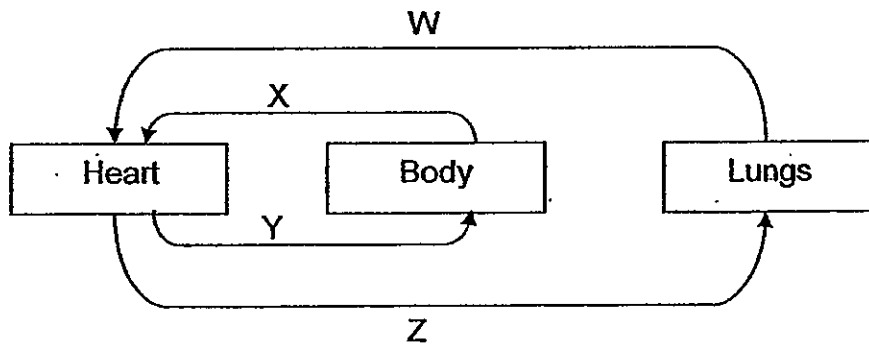
Carbon dioxide

Oxygen

Others

Nitrogen

7. Study the diagram of the human circulatory system below carefully.

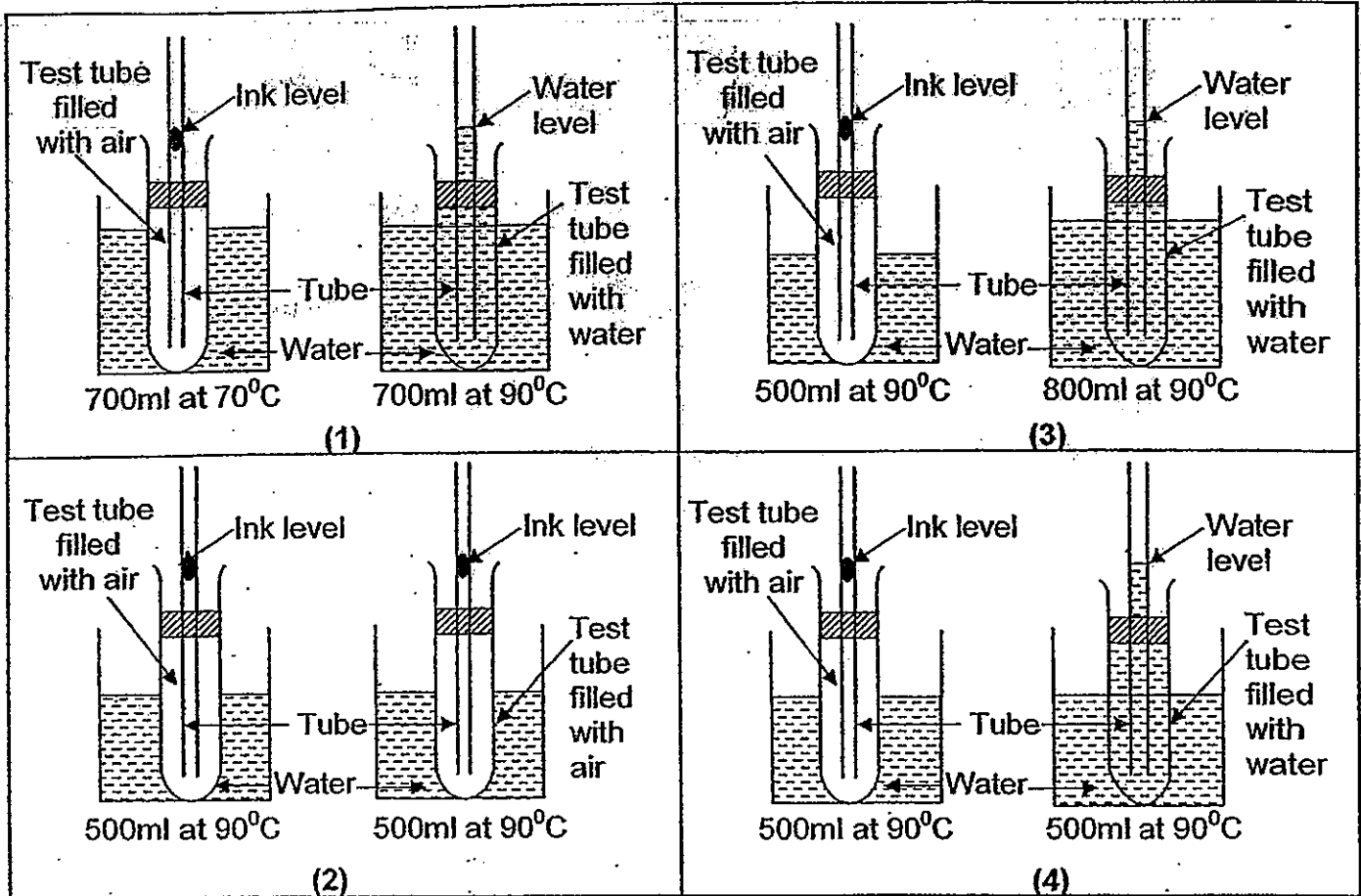


Which one of the following correctly represents blood vessels W, X, Y and Z?

	Blood rich in oxygen		Blood rich in carbon dioxide	
(1)	W	Z	Y	X
(2)	X	Y	W	Z
(3)	Y	Z	X	W
(4)	W	Y	X	Z

8. Kristi wanted to find out if air expands more than water. She had an equal amount of air and water in each test tube and inserted a tube into each test tube. Next, she placed each test tube into a container of hot water as shown below.

Which one of the following setups should she use to ensure a fair test?



9. Which one of the following best describes the air before entering and after leaving the nose?

	Air before entering the nose	Air after leaving the nose
A	Cooler	Warmer
B	Less moist	More moist
C	Cleaner	Dirtier
D	Level of carbon dioxide is the same as surrounding air	Level of carbon dioxide increases

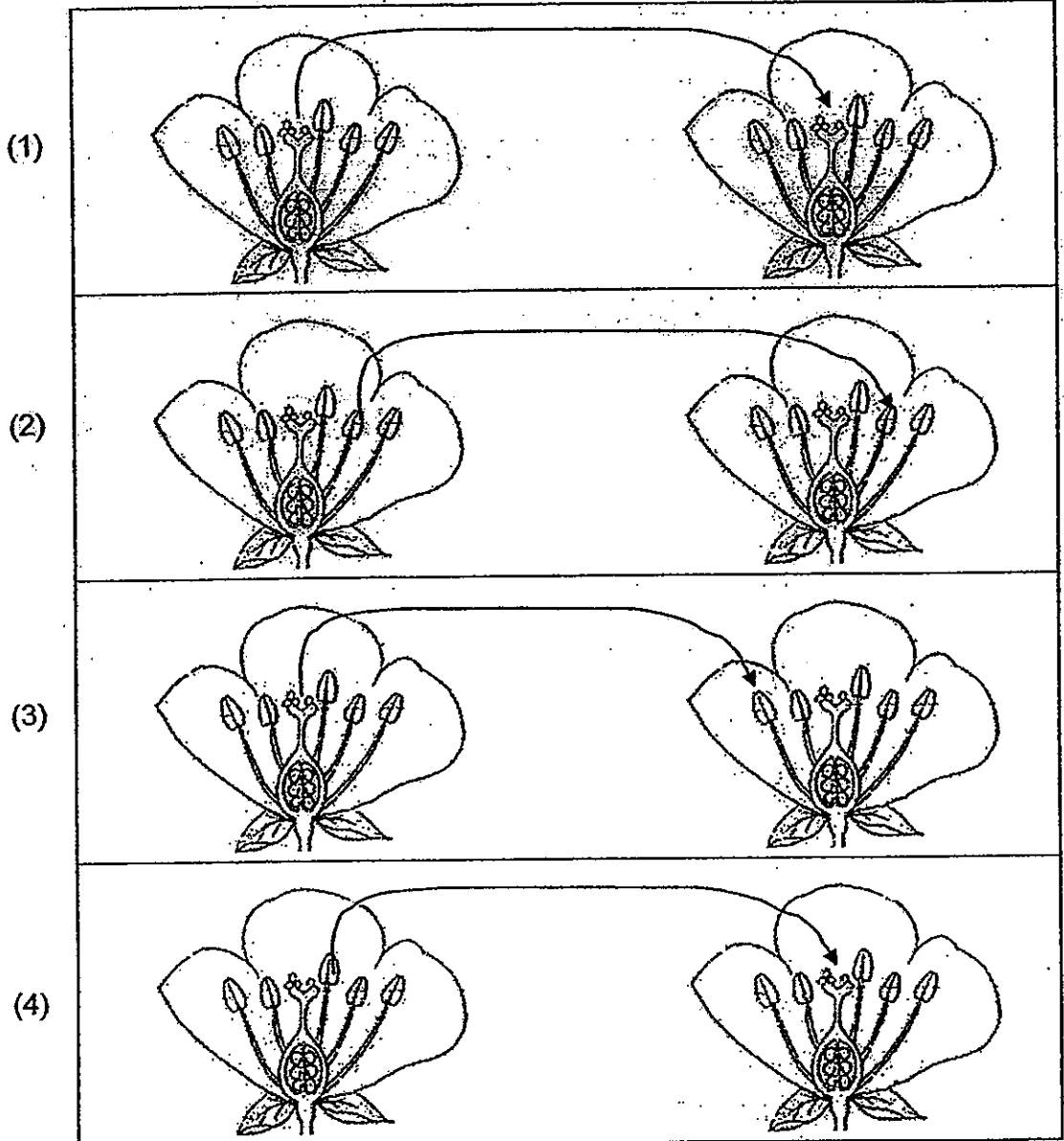
(1) A only

(3) A, B and C only

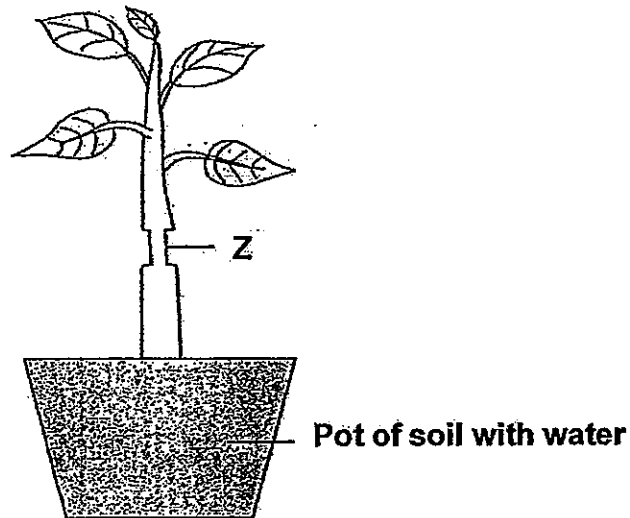
(2) B and C only

(4) A, B and D only

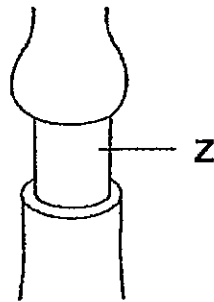
13. Which one of the diagrams below would pollination and fertilization most likely occur?



14. Wendy cut out the outer ring of a stem at part Z of a plant. The diagram below shows how part Z was cut.



She left the plant under well-lit condition and watered it regularly. After some time, Wendy observed the section above and below part Z as shown below.



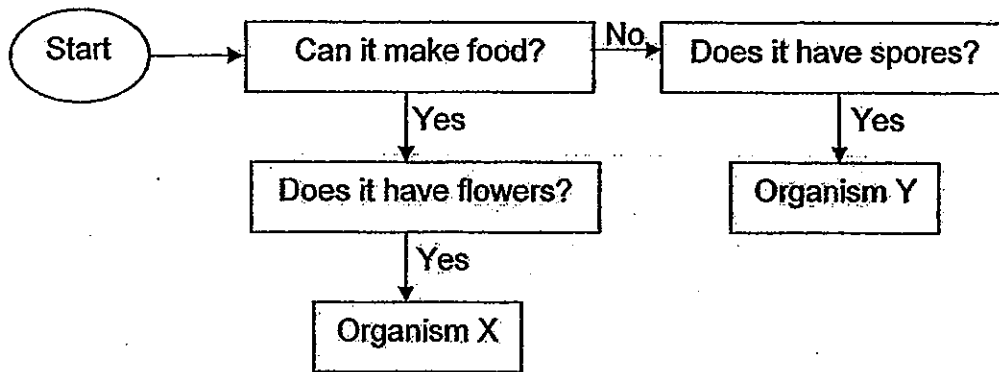
Wendy concluded that:

- A: Only the xylem tubes were removed from the stem.
- B: Only the phloem tubes were removed from the stem.
- C: Only water can be transported to other parts of the plants.
- D: Only food can be transported to other parts of the plants.

Which one of her conclusion(s) about part Z is/are correct?

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

15. Study the flow chart below carefully.



	Organism X	Organism Y
(1)	Papaya plant	Fern
(2)	Fern	Bread mould
(3)	Mango plant	Balsam plant
(4)	Hibiscus plant	Mushroom

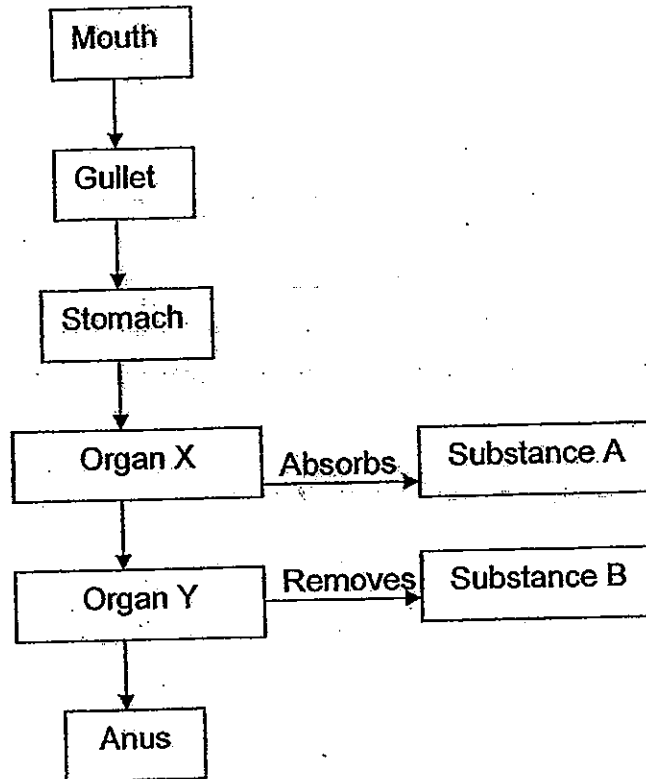
16. Study the table below carefully.

Heading X	Heading Y
Assessment book	Iron nails
Tooth pick	Aluminum foil
Wooden table	Steel hammer head

Based on the table above, the objects are classified according to whether the materials are _____.

- (1) hard or soft
- (2) flexible or not flexible
- (3) magnetic or non-magnetic
- (4) made from living things or not

17. Study the flow chart below that shows the human digestive system carefully.



	Organ X	Organ Y	Substance A	Substance B
(1)	Large intestine	Small intestine	Digested food	Water
(2)	Small intestine	Large intestine	Digested food	Water
(3)	Large intestine	Small intestine	Water	Digested food
(4)	Small intestine	Large intestine	Water	Undigested food

18. Alice took 4 similar leaves from a plant and painted the leaves with 4 different materials as shown in the table below.

Leaf	Materials	Transparency
A	Petroleum jelly	Transparent
B	Paint	Opaque
C	Vaseline	Transparent
D	Glue	Translucent

She observed that all the leaves died after a few days. Why do you think this happened?

- (1) The leaves cannot take in water.
 - (2) The leaves cannot photosynthesis.
 - (3) The leaves do not receive enough sunlight.
 - (4) The leaves cannot perform gaseous exchange.
19. Jenny wanted to find out which material is the best for blocking the light from entering her bedroom.

She conducted an experiment on 4 materials as shown below.

Material	Distance between material and light source (cm)	Distance between material and light detector (cm)	Amount of light detected (Lux)
A	15	15	600
B	20	20	600
C	20	15	600
D	15	20	600

Based on her results, which material should she choose for her bedroom?

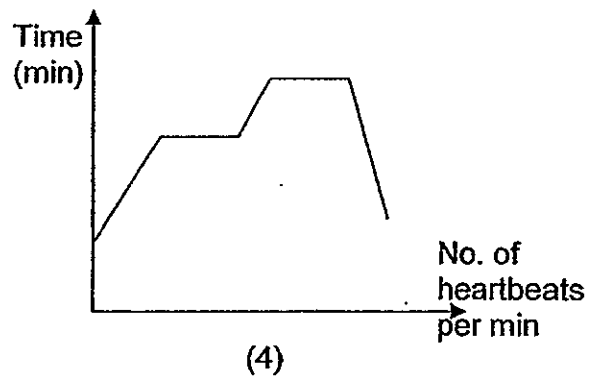
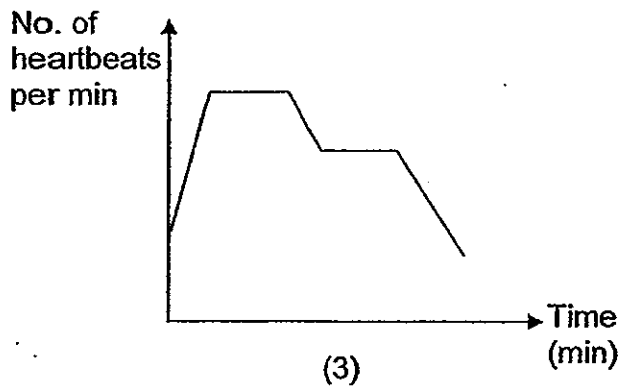
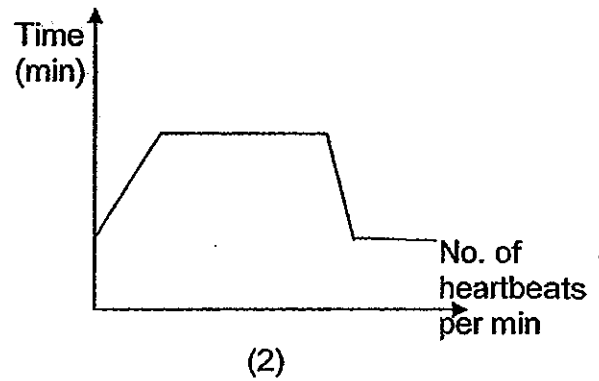
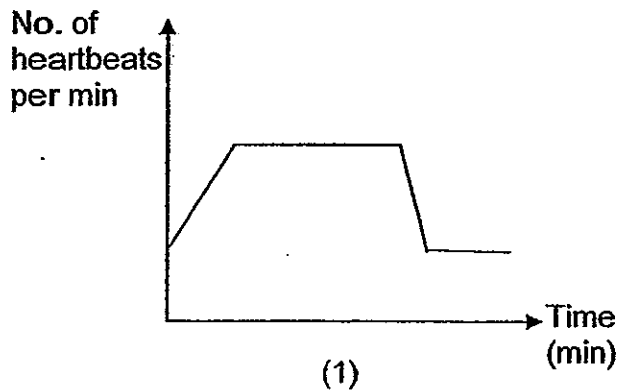
- (1) A
- (2) B
- (3) C
- (4) D

Refer to the table below and answer Questions 20 and 21.

Time (minutes)	Activity
0 - 10	Running
11 - 20	Running
21 - 30	Running
31 - 40	Coming to a stop
41 - 50	Resting

The table above shows the activities that Susan has carried out over 50 minutes.

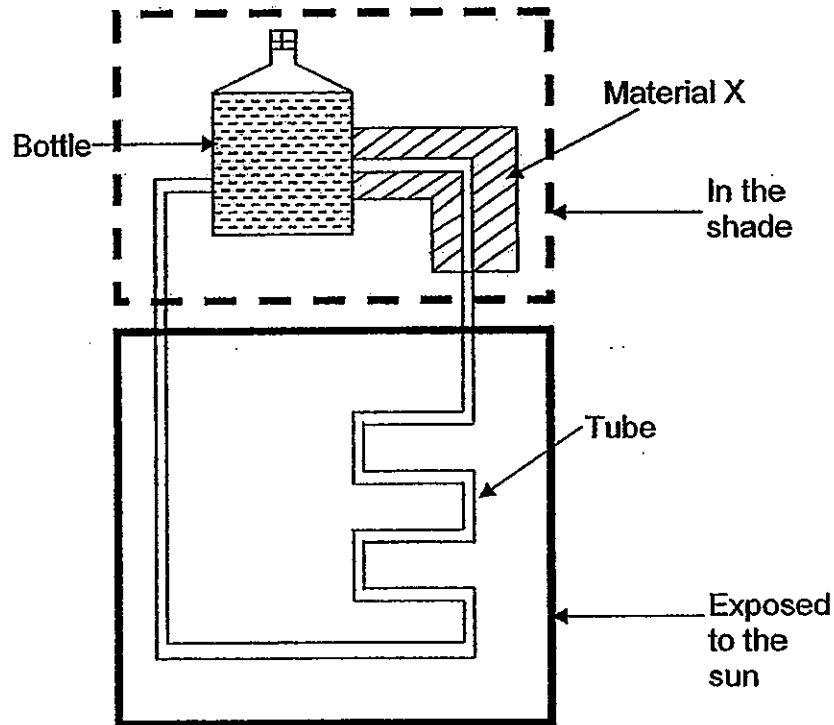
20. Which one of the graphs below shows the relationship between Susan's heartbeat rate and the activities she has carried out?



21. During Susan's run between 11th to 30th minute. Which one of the following best represents what is happening in her body?

	Rate of carbon dioxide released	Rate of blood flow	Rate of digested food used
(1)	Increase	Increase	Increase
(2)	Increase	Increase	Decrease
(3)	Increase	Decrease	Increase
(4)	Decrease	Decrease	Decrease

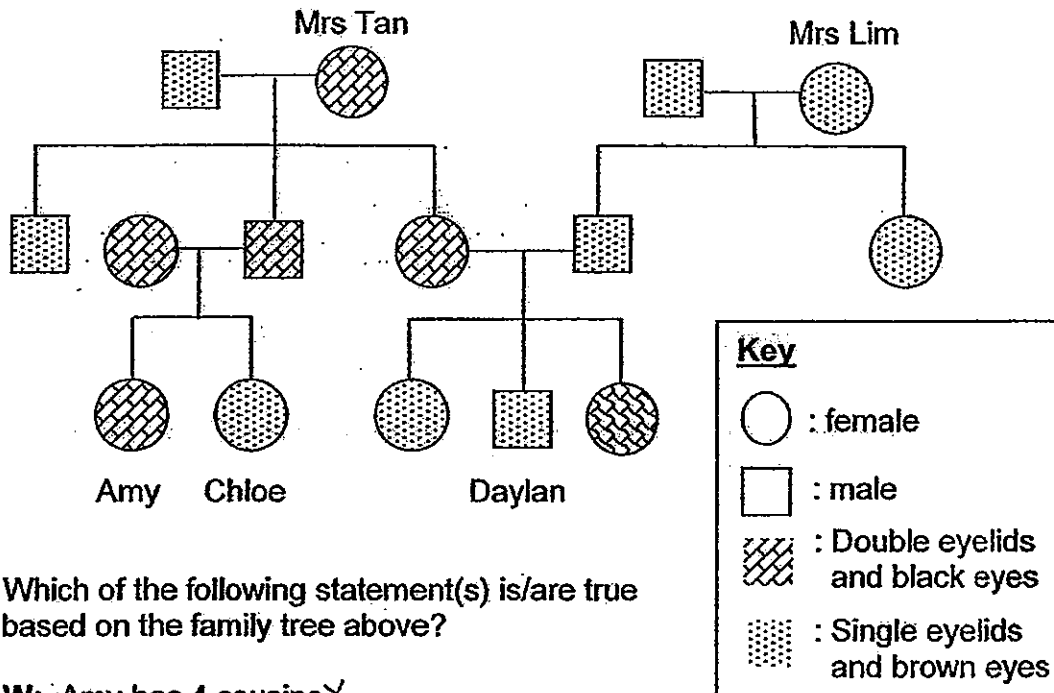
22. The set-up below shows a model of a solar water heater.



The bottle and tube are filled with cold water. The bottle is connected to the tube which is mostly exposed to the sun. Which of the following materials are most suitable for making the water in the bottle very hot?

	Bottle	Tube	Material X
(1)	Plastic	Plastic	Steel
(2)	Steel	Plastic	Wood
(3)	Plastic	Steel	Cotton wool
(4)	Steel	Steel	Iron

23. Study Daylan's family tree as shown below.



Which of the following statement(s) is/are true based on the family tree above?

W: Amy has 4 cousins.

X: Chloe inherited her characteristics from her grandmother.

Y: Mrs Tan has 4 children and 5 grandchildren.

Z: Daylan inherited his characteristics from his father.

(1) Z only

(3) W and Z only

(2) X and Z only

(4) W, Y and Z only

24. Which of the following statements about the human systems are true?

A: The skeletal system alone enables the body to move.

B: The respiratory system takes in oxygen and gives out carbon dioxide.

C: The digestive system breaks down food into simpler substances.

D: The circulatory system transport blood rich in food, water, oxygen to various parts of the body and also removes carbon dioxide and waste from the body.

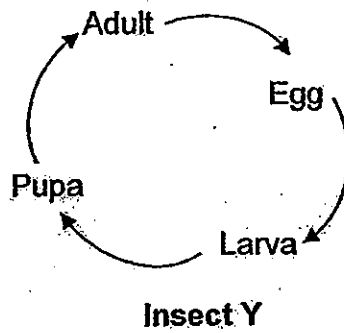
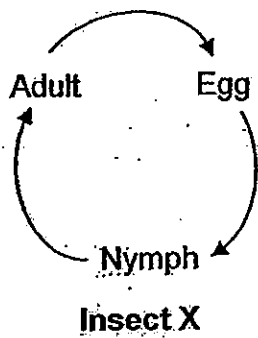
(1) A, B and C only

(3) A, B and D only

(2) B, C and D only

(4) A, C and D only

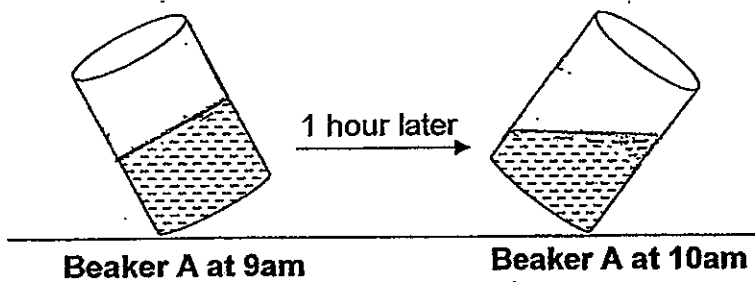
25. Study the life cycles of Insects X and Y below carefully.



Which one of the following statements below correctly describes the life cycle of Insect X and Insect Y?

- (1) Both insects lay eggs on land.
- (2) Both the young resemble the adults,
- (3) The larva of Insect ~~X~~ and the nymph of Insect ~~Y~~ moult.
- (4) The life cycle of Insect Y takes longer than the life cycle of Insect X.

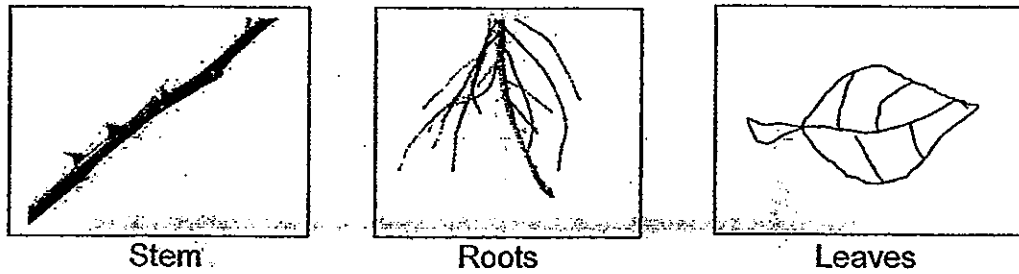
26. Study the water level of beaker A at 9am and 10am.



Based on the diagrams above, which state of matter is the substance in beaker A at 9am and 10am?

	Substance at 9am	Substance at 10am
(1)	Solid	Solid
(2)	Solid	Liquid
(3)	Liquid	Solid
(4)	Liquid	Liquid

27. Sally removed the stem, roots and leaves of a plant and placed each part into a beaker of hot water.

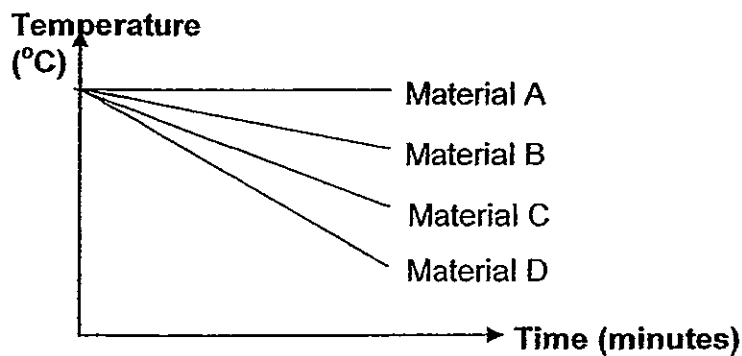


She recorded her observation in the table below.

Plant parts	Are bubbles observed in the hot water?
Stem	No
Roots	No
Leaves	Yes

What was the most likely reason for this to happen?

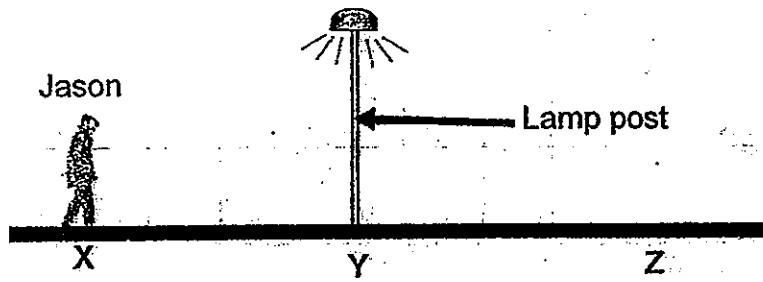
- (1) Leaves produce bubbles.
 - (2) Leaves give out water vapour.
 - (3) Stem and roots contained bubbles.
 - (4) Stem and roots cannot produce bubbles.
28. Mary poured equal amounts of hot tea into Materials A, B, C and D and measured the temperature of the hot tea after 30 minutes.



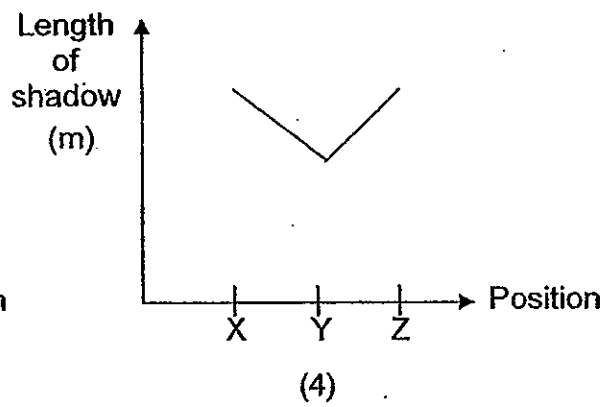
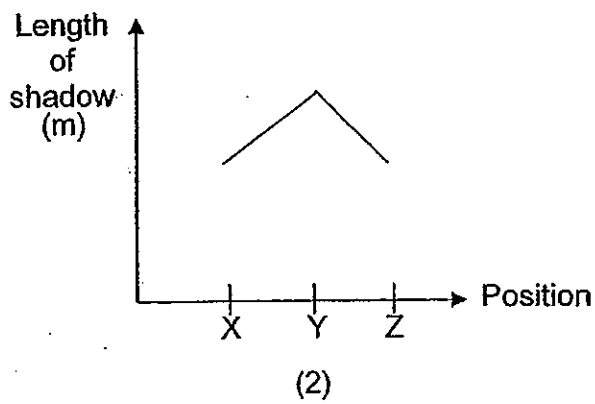
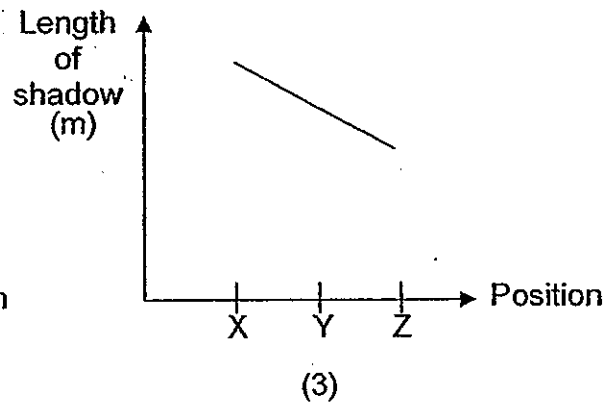
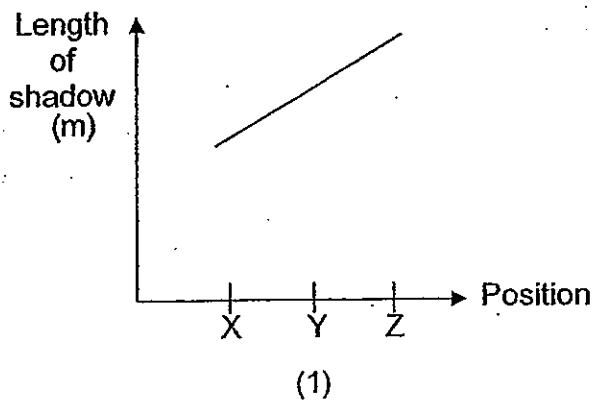
If Mary wanted to keep her ice-cream cold, which material A, B, C or D should she use?

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

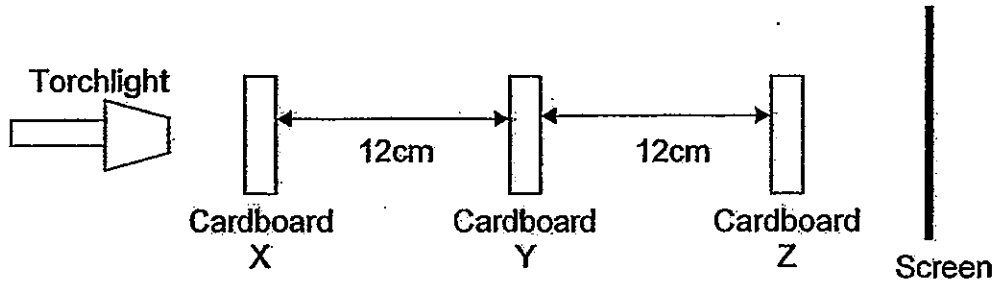
29. As Jason was walking from Points X to Z, the length of his shadow changes.



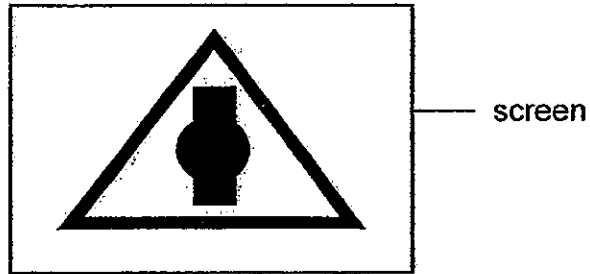
Which one of the following graphs below correctly shows how the length of Jason's shadow changes from Point X to Point Z?



30. The set-up below shows light from a torch shining on three cardboard shapes arranged at different distances from the torch. All the cardboards have identical height.



The diagram below shows the shadow that was formed on the screen.



Which one of the following correctly shows the arrangement of Cardboards X, Y and Z that are used to form the shadow as shown above?

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



SINGAPORE CHINESE GIRLS' SCHOOL
FIRST SEMESTRAL ASSESSMENT 2012

SCIENCE
PRIMARY FIVE

NAME: _____ ()

DATE: _____

CLASS: PRIMARY 5 SY / C / G / SE

Booklet A		60
Booklet B		40
Total		100

Parent's Signature _____

BOOKLET B

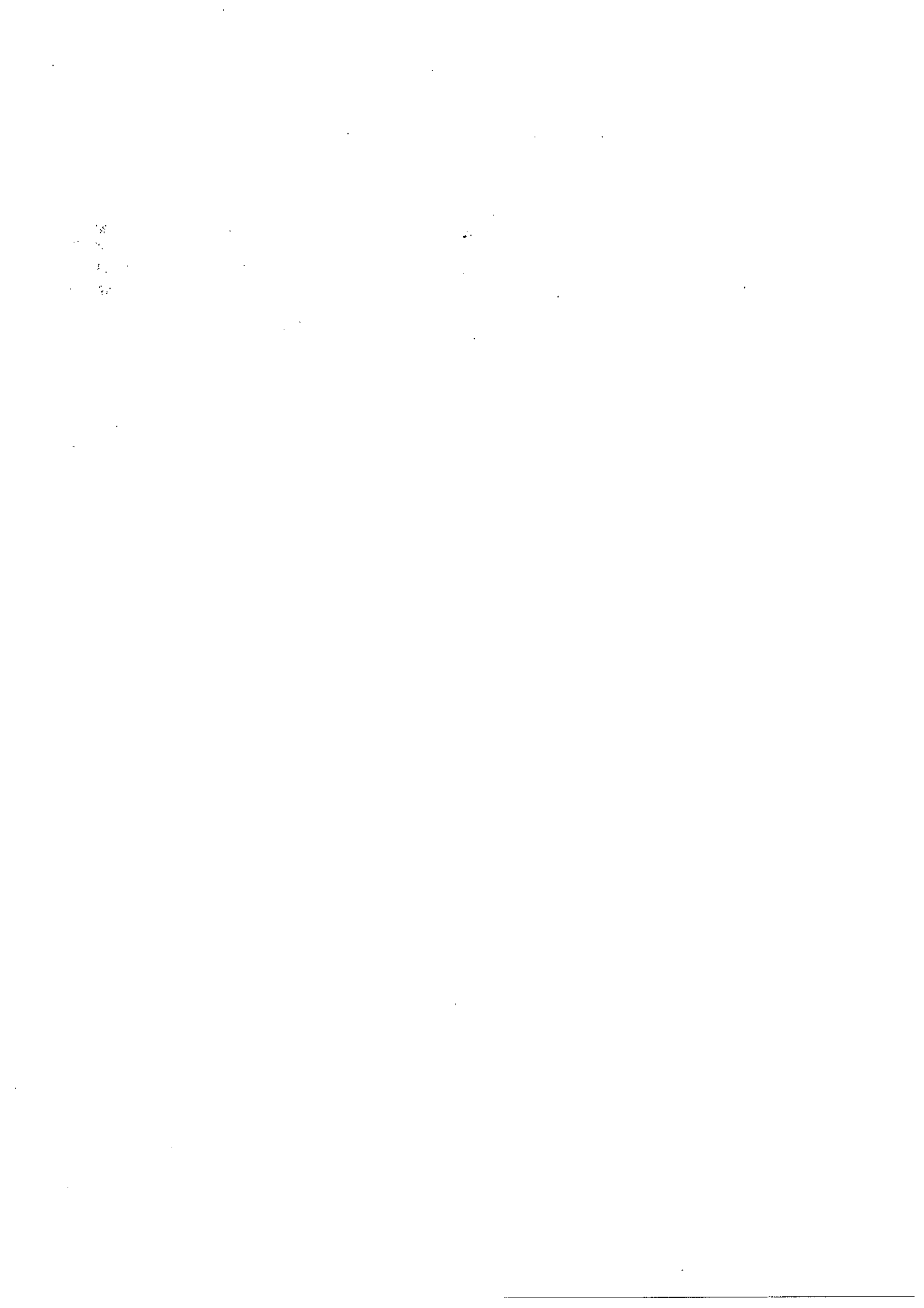
14 questions

40 marks

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

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

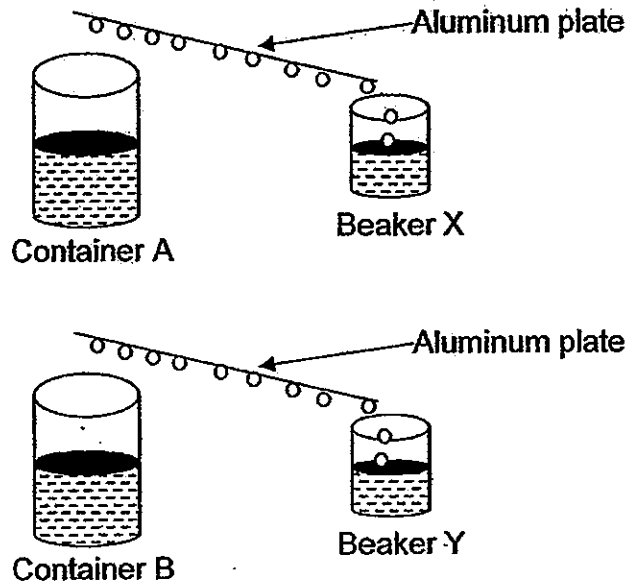
FOLLOW ALL INSTRUCTIONS CAREFULLY.



Part II (40 marks)

Answer all the following questions.

31. Ally conducted the following experiment in a room. She poured some hot water into Container A. Next, she placed an aluminum plate over Container A for 10 minutes to allow water droplets to flow into the Beaker X. She repeated the above steps with equal amount of water at a different temperature for Container B and collected the water droplets in Beaker Y.



Time	Amount of water collected in Beaker X (ml)	Amount of water collected in Beaker Y (ml)
0 min	0	0
5 min	10	15
10 min	18	22

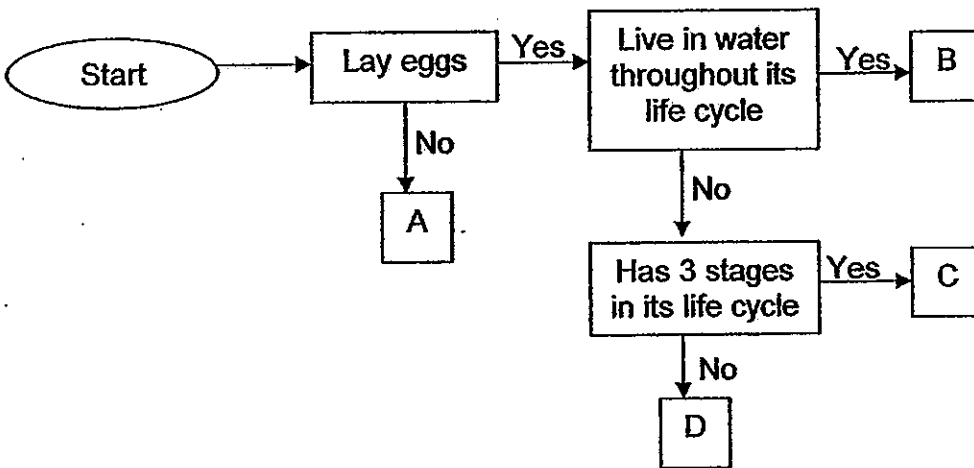
- a) What can you conclude about the temperature of water in Container A and B? (1m)

- b) Give a reason for your answer. (1m)

c) Tick the variable(s) she should keep constant in order to carry out a fair test in the table below. (1m)

Variables		Put a tick (✓) in the correct boxes below.
i)	The temperature of the room.	
ii)	The amount of water in the Containers A and B.	
iii)	The amount of water collected in Beakers X and Y.	

32. Study the flow chart below carefully.

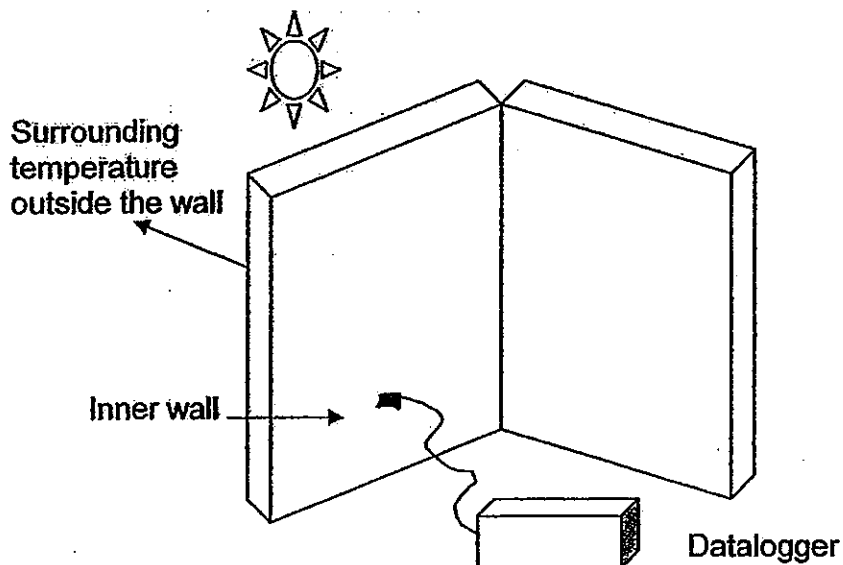


a) State the 2 similarities between Animal C and D. (2m)

b) Which Animal A, B, C or D represents Grasshopper? (1m)

33. The Housing Development Board (HDB) wanted to find out which material they should choose for the construction of the latest block of flats in Singapore.

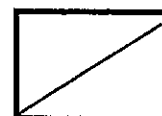
An engineer set up the following experiment and recorded the results as shown in the table below.



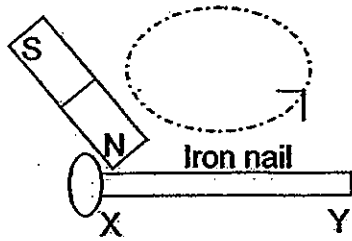
Surrounding temperature outside the wall (°C)	Average inner temperature of the wall (°C)			
	Material A (°C)	Material B (°C)	Material C (°C)	Material D (°C)
27	30	28	42	27
30	35	30	45	29
35	37	33	48	32

- a) Which material is the best for constructing the wall? Explain your choice. (1m)

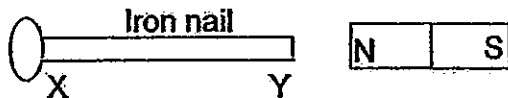
- b) Which material is the most suitable for buildings in countries with winters? (1m)



34a) Ali stroked an iron nail using a magnet as shown below.



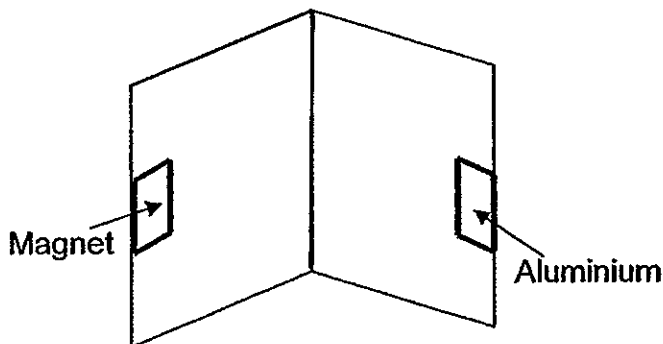
Next, he placed the magnet next to one end of the nail as shown below.



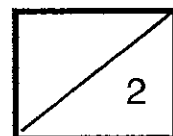
Before Ali conducted the above experiment, he predicted that end Y of the iron nail will be attracted to the north seeking pole of a magnet.

Is Ali's prediction correct? Explain your answer. (1m)

b) Marilyn used the 2 different materials as shown in the diagram below for her new cupboard.



She realized that the door could not stay close tightly. What is the most likely reason for this to happen? (1m)



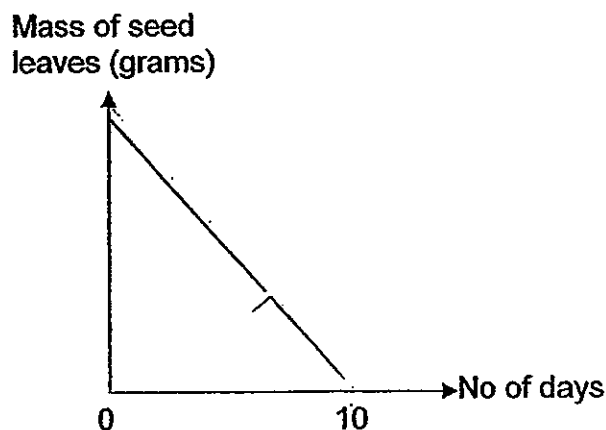
35a) Pauline planted a seed and watered it everyday. She observed its growth and recorded the length of the root and shoot in the table below.

Day	Length of part A (cm)	Length of part B (cm)
1	0	0
2	0	0
3	0.2	0
4	0.38	0
5	0.45	0.23
6	0.47	0.34
7	0.49	0.45
8	0.49	0.60

i) Which part (A or B) represents the root of the seed? (1m)

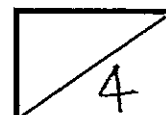
ii) Give a reason for your answer. (1m)

b) A green bean depends on the seed leaves for food during its growth. The seed leaves provide food to the growing seed until the first leaves appear.



i) Based on the axis given on the graph above, draw a graph to represent the mass of the seed leaves over a period of 10 days. (1m)

ii) State the 3 conditions that are required for a seed to germinate. (1m)



36a) The table below shows a comparison of 3 kinds of cells.

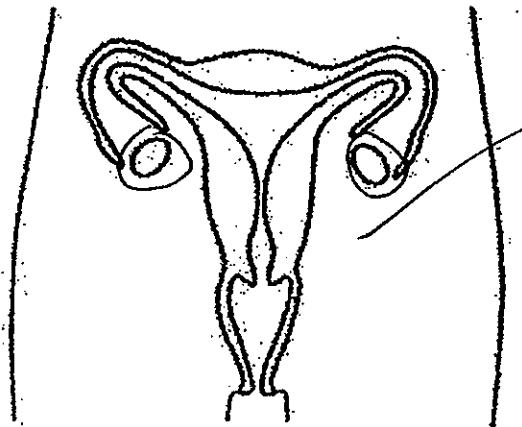
Part of a cell	Cell A	Cell B	Cell C
Cell wall	Yes	Yes	No
Chloroplast	No	Yes	No
Cytoplasm	Yes	Yes	Yes
Cell membrane	Yes	Yes	Yes
Nucleus	Yes	Yes	Yes

i) What function can Cell B perform but the other cells cannot? (1m)

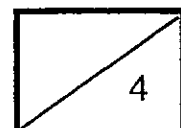
ii) What is the main difference between Cell C and the rest of the cells? (1m)

b) The diagram below shows the human female reproductive system.

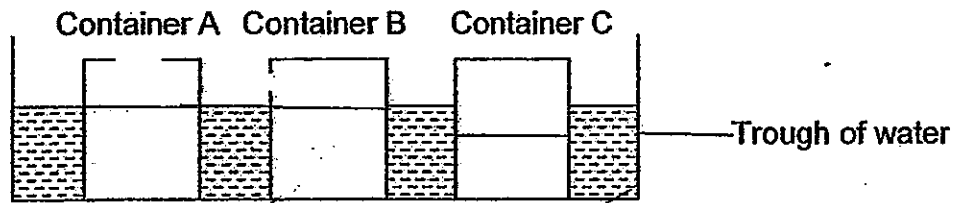
i) Circle on the diagram the parts that represent the ovary. (1m)



ii) Explain why a woman is unable to get pregnant if she has no ovary. (1m)

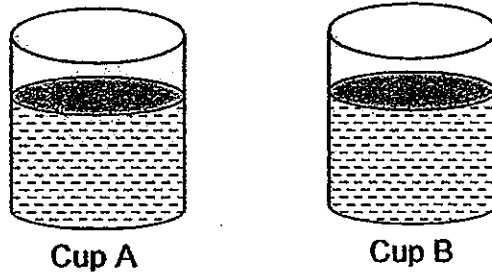


37a) 3 plastics containers are inverted into a trough of water. Holes were created in Containers A and B while Container C has no holes.

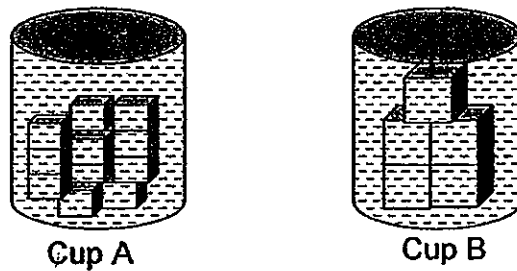


i) Draw the water levels in Containers A, B and C in the diagram above. (2m)

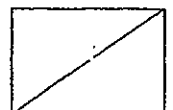
b) Zena poured equal amounts of fruit juice into 2 cups as shown below.



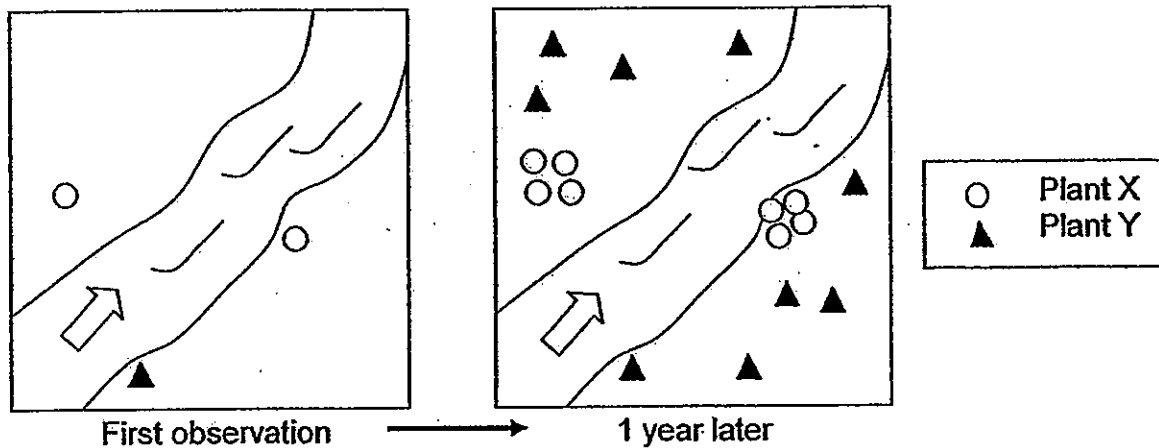
In order to make the fruit juice cooler, she added equal volume of ice cubes into the 2 cups. However, the sizes of the ice cubes are different as shown below.



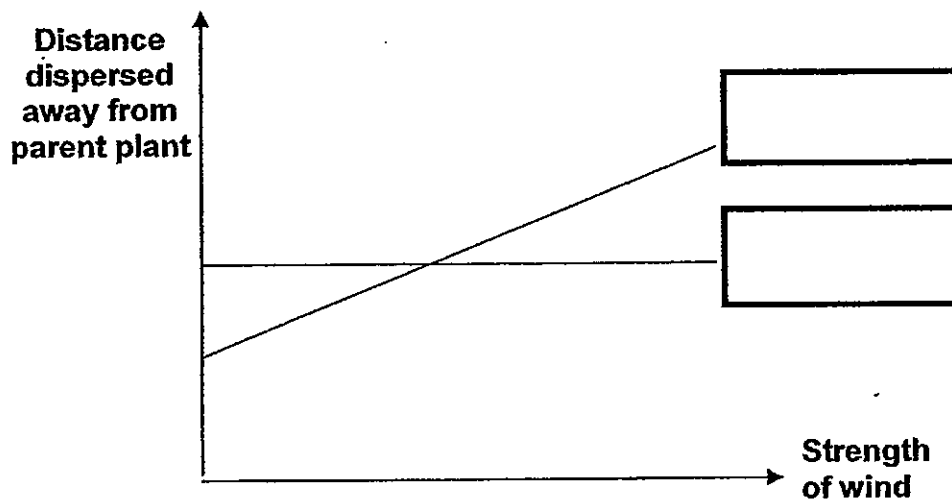
i) In which cup do you think will the fruit juice cool faster? Give a reason for your answer. (1m)



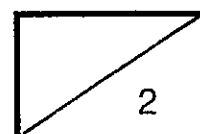
38a) Charmaine counted the number of wild plants X and Y on a piece of land. She observed the plants 1 year later and recorded her observation as shown below.



Charmaine also observed the relationship between the distance dispersed by the seeds of Plants X and Y and the strength of wind on that piece of land as shown in the graph below.



- i) Based on Charmaine's observation of Plants X and Y after 1 year, write "Plant X" and "Plant Y" in the correct boxes as shown in the graph above. (1m)
- ii) Name one characteristic of the fruit of Plant Y. (1m)

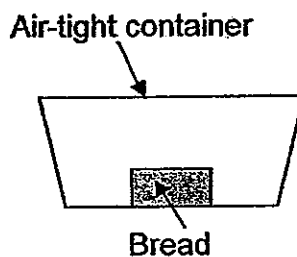


- b) Gerald went home after playing soccer in his school field and found that there were some plants clinging onto his socks.



State a possible characteristic of the fruit that helps it cling to his socks. (1m)

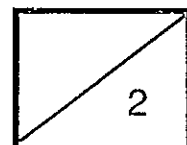
39. Paul baked Breads A, B, C and D by changing the amount of water added and he kept other ingredients constant. He then placed each loaf of bread into an air-tight plastic container and left them in the room for a week as shown in the diagram below.



The table below shows the results of his experiment.

Bread	Area of bread mould formed (cm ²)
A	2.3
B	3.2
C	0.8
D	1.4

- a) Arrange the amount of water added in the Breads A, B, C and D in ascending order. (1m)
-



117

- b) Which bread do you think he should choose to bake so that it can stay fresh for the longest time? Explain your choice. (1m)

40. Gilda wanted to find out which material is the best for making a beach umbrella. She used 4 different materials A, B, C and D to investigate if colour and surface type affects the rate of heat absorption.

Next, she left the 4 materials under the hot sun for 4 hours before measuring their temperature under the shade.



She recorded the results in the table below.

Material	Colour of surface	Type of surface	Temperature under the shade at the end of 4 hours (°C)
A	White	Matt	29.6
B	White	Shiny	27.5
C	Black	Matt	32.6
D	Black	Shiny	31.8

- a) Based on the results of the experiment, which factor, the colour or surface, affects the rate of absorption more? (1m)

- b) Based on the results above, Gilda chose material B which has the lowest temperature. Give a reason why Gilda chose Material B. (1m)

41. Janelle used 2 containers of water as shown below in Diagram 1.

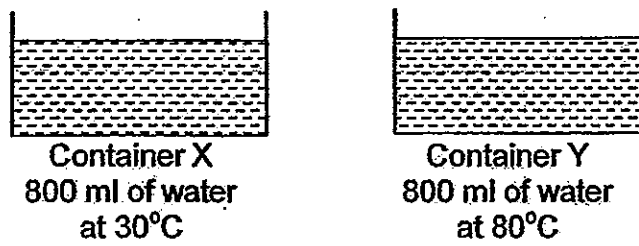


Diagram 1

Next, she used Containers X and Y to set up an experiment as shown in Diagram 2.

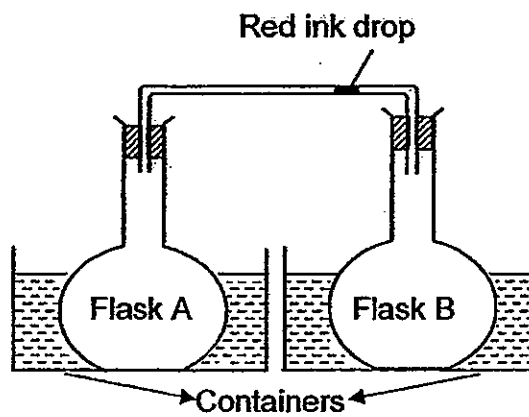


Diagram 2

She observed that the red ink moved towards Flask B after 10 minutes.

a) Fill in the blanks below. (1m)

i) Flask A is placed in Container _____

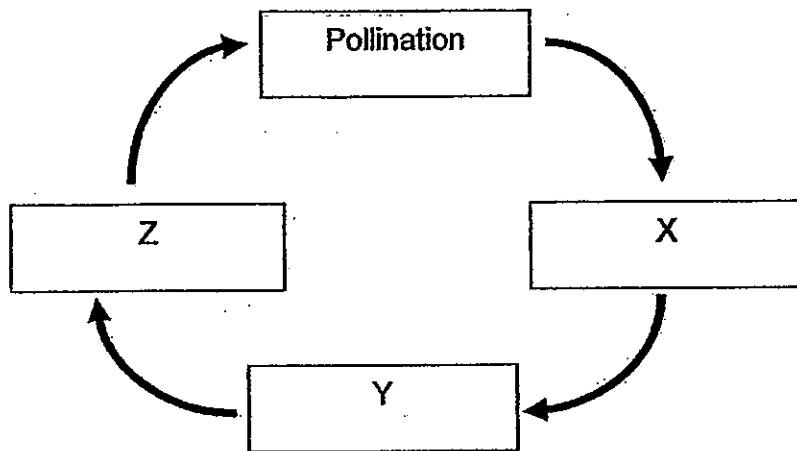
ii) Flask B is placed in Container _____

b) Explain why the red ink moved away from Flask A. (1m)

c) If Janelle wanted the red ink drop to move faster to Flask B, what can she do?(1m)

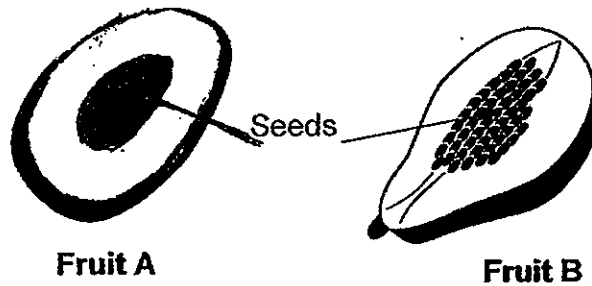
119

42. The diagram below shows the life cycle of a plant.



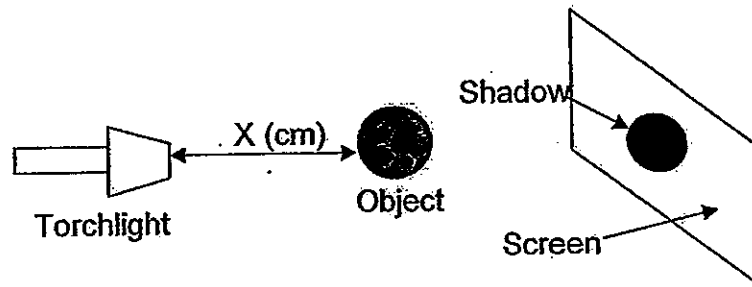
a) Which stage X, Y or Z of the life cycle will enable a fruit to start forming?(1m)

The diagram below shows Fruits A and B.



b) What is the main difference between the ovule(s) in flowers of Fruit A and B? (1m)

- 43a) Amanda wanted to find out if the distance between the object and the light source will affect the size of the shadow formed. She set up the experiment as shown below and moved only the torchlight.



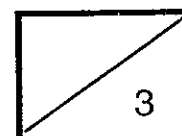
The table below shows various distance X and the size of its corresponding shadows cast on the screen.

Distance X (cm)	Size of shadow cast on screen (cm^2)
10	A
20	B
30	C
40	D

- i) Which shadow size, A, B, C or D, is the smallest? (1m)

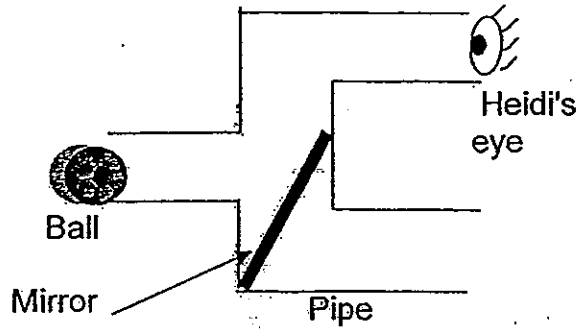
- ii) Based on the above experiment, state the property of light that enable the shadow to be formed. (1m)

- iii) Besides moving the torchlight, state another way that Amanda can make a larger shadow. (1m)



121

- b) Study the diagram below carefully.

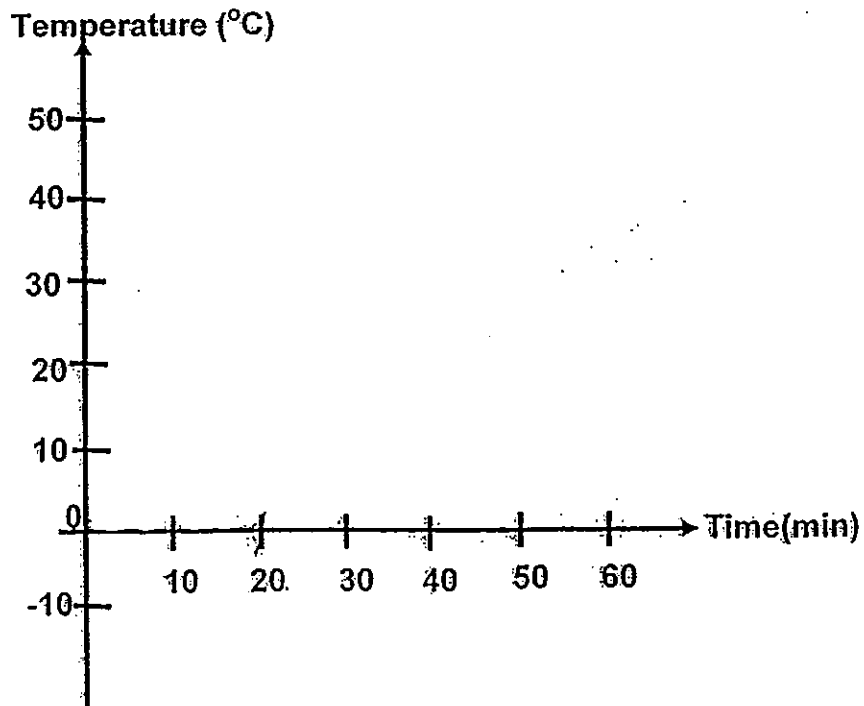


Draw 1 mirror used in the pipe which allows Heidi to see the ball. (1m)

44. Cecelia conducted an experiment on Substance Z over 60 minutes in a room with a temperature of 30°C as shown in the table below. Substance Z melts at 0°C and boils at 50°C .

Time period (minutes)	Substance X is
0 - 20	melting
20 - 30	gaining heat
30 - 50	boiling
50 - 60	losing heat

- a) Based on the table above, draw a line graph that represents the temperature of Substance Z over 60 minutes. (2m)



- b) During which time period does Substance Z exist in both solid and liquid states?(1m)

ANSWER SHEET

EXAM PAPER 2012

**SCHOOL : SCGS
SUBJECT : PRIMARY 5 SCIENCE**

TERM : SA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
1	2	2	1	2	2	4	4	4	1	2	2	4	3	4	4	2

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
4	1	1	1	3	1	2	3	2	2	1	4	2

31)a) I can conclude that the temperature of the water in Container B is warmer than that of Container A.

b) Greater difference in temperature between the water in container A and the aluminium plate cause more water droplets to be formed and droplets in the beaker X and Y .

c) i) ii)

32)a) Both Animal C and D lay eggs and do not live in water throughout its life cycle.

b) Animal C represents the grasshopper.

33)a) Material D. The average inner temperature of the wall made D is the lowest.

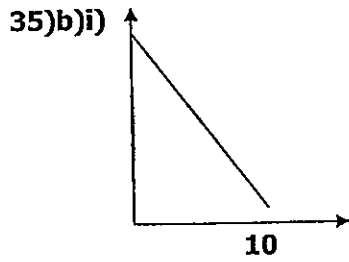
b) Material D. It is the poorest conductor of heat.

34)a) Yes. End Y is now a south seeking pole and unlike poles attract.

b) Aluminium is not a magnetic material.

35)a) i) Part A represents the root of the seed.

ii) When a seed germinates, the roots of the plant always grows before the shoot. Thus, Part A represents the root of the seed.

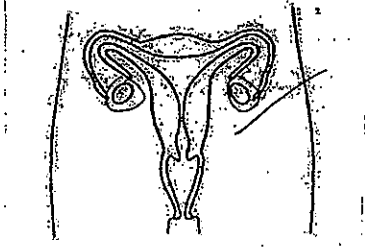


. ii) Air, water and warmth are required for a seed to germinate.

36)a)i) Cell B can photosynthesize while the other cells cannot.

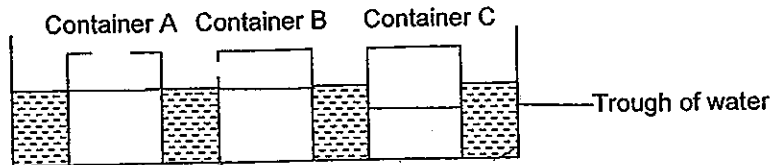
ii) Cell C does not have a cell wall and is thus an animal cell while the other cells have cell walls and are thus plant cells.

b)i)

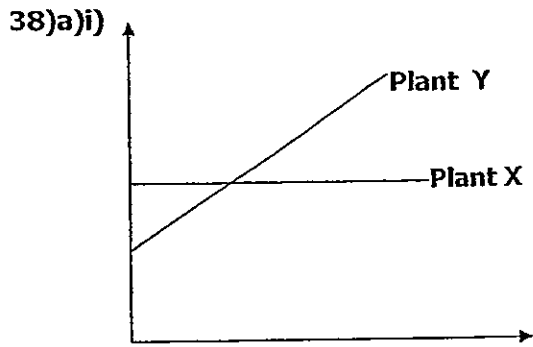


ii) The ovary produces the eggs, which is the female sex cell. If a woman does not have an ovary, she will have no egg to reproduce and thus, she is unable to get pregnant.

37)a)i)



b)i) Cup A, the smaller ice cubes has greater exposed area to allow faster heat transfer from the juice to allow the juice lose heat more quickly to the ice tubes.



ii) Plant Y has a wing-like structure.

b) The fruit has hooks, which helps it to cling to Gerald's socks.

39)a) C, D, A, B

b) Bread C. It grew the least amount of bread mould as there is least amount of water present.

40)a) Colour.

b) She chose Material B as compared to the other material, it is the poorest conductor of heat so it absorbed the least heat. Thus, she chose Material B.

41)a)i) Container Y ii) Container X

b) There is more heat in the water in Flask A which expands more than Flask B thus pushing ink towards flask B.

c) She can increase the temperature of the water in Container Y.

42)a) A fruit will start to form at stage X.

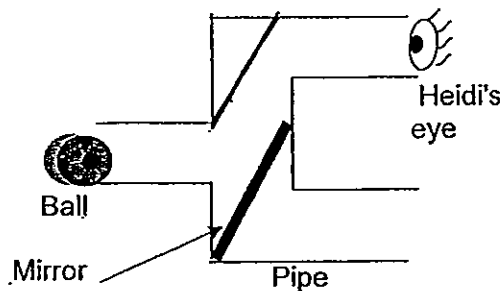
b) There is only one ovule in A but there are many ovules.

43)a)i) Shadow D is the smallest.

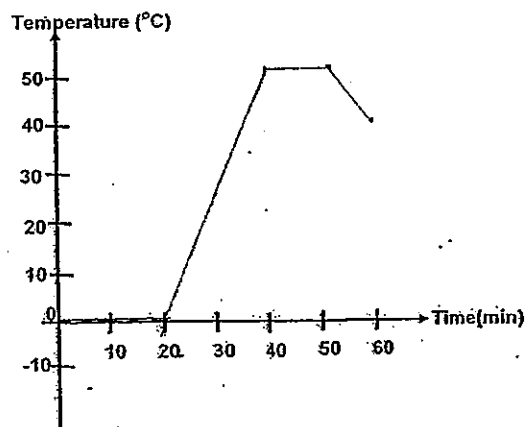
ii) Light travels in straight lines and when the path of light is blocked, a shadow is formed.

iii) She can move the screen further away from the object.

b)



44)a)



b) 0.20 min