CATHOLIC HIGH SCHOOL
PRELIMINARY EXAMINATION 2
2014
PRIMARY SIX

SCIENCE

BOOKLET A

Name: _____ ( )

Class: Primary 6 - _____

Date: 25 August 2014

30 questions

60 marks

Total Time for Booklets A and B: 1 hour 45 minutes

INSTRUCTIONS TO CANDIDATES

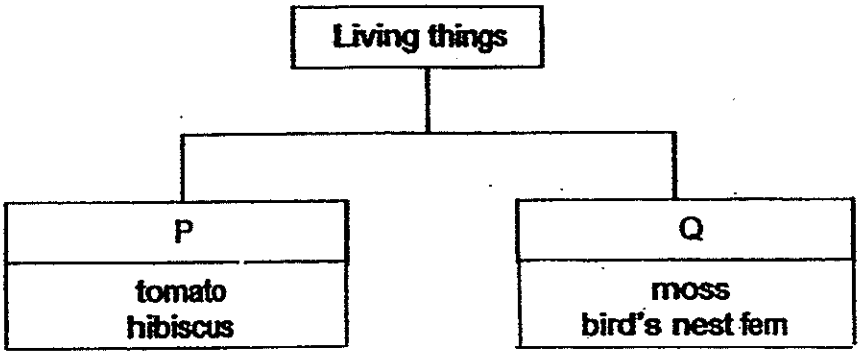
Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Shade your answers in the Optical Answer Sheet (OAS) provided.

This booklet consists of 26 printed pages, excluding cover page.

Booklet A (30 × 2 marks)

For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade your answer on the Optical Answer Sheet. **(60 marks)**

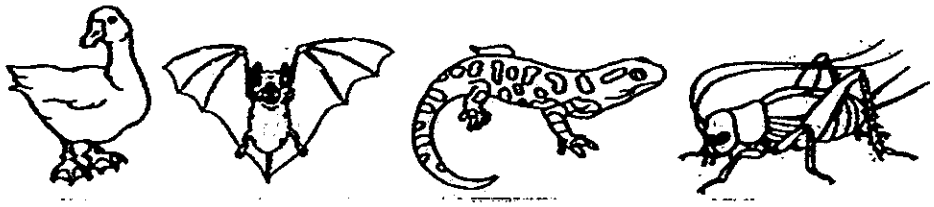
1 The chart below shows how some living things can be grouped.



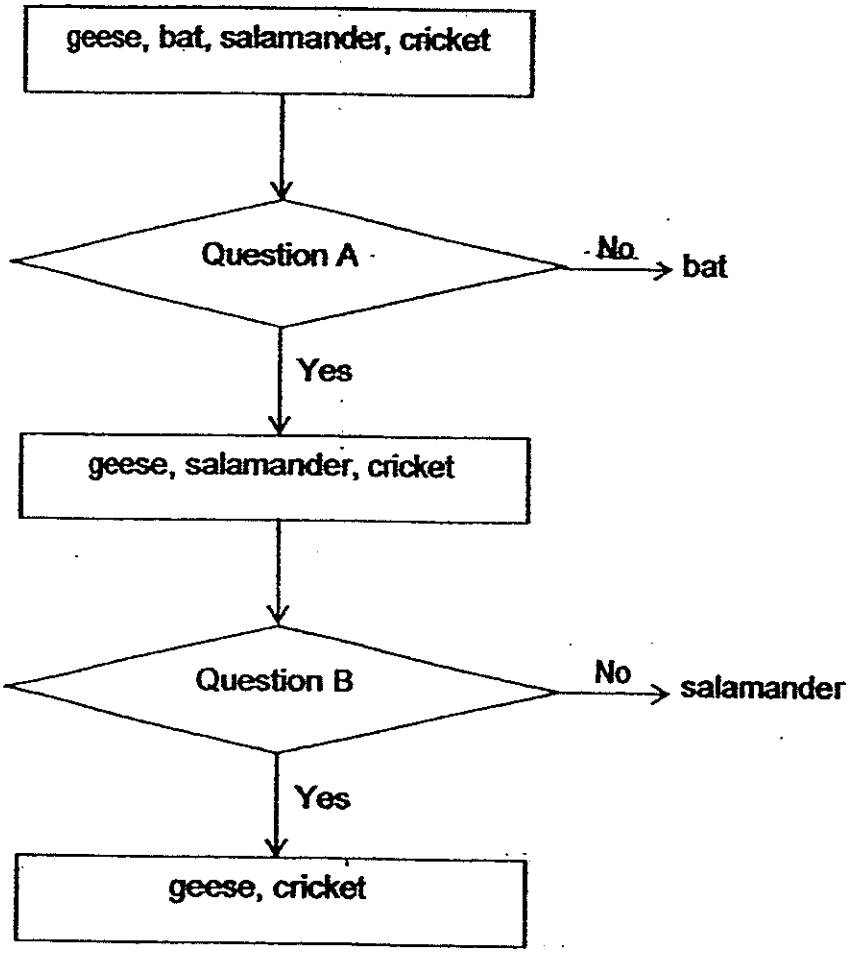
Which one of the following correctly shows the characteristics of P and Q?

	P	Q
(1)	Grow on land	Grow in water
(2)	Make their own food	Do not make their own food
(3)	Reproduce from seeds	Reproduce from spores
(4)	Have fruit with many seeds	Have fruit with no seeds

2 Abel classified the four animals in the flow chart as shown below.



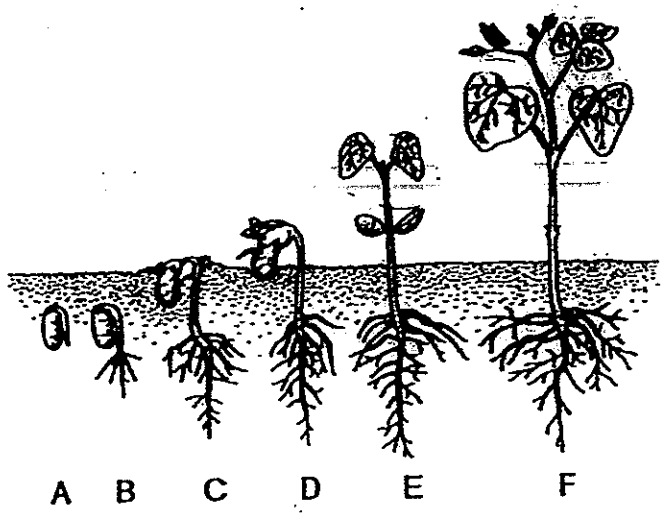
geese bat salamander cricket



What were the two questions, A and B?

	Question A	Question B
(1)	Do they have wings?	Do they lay eggs?
(2)	Do they lay eggs?	Do they have wings?
(3)	Do they have wings?	Do they have a hard outer covering?
(4)	Do they lay eggs?	Do they have a hard outer covering?

3 The diagram below shows the different stages of the growth of a seed into a seedling.



At which stage(s) can the seedling make its own food?

(1) E only
(2) F only
(3) E and F only
(4) D, E and F only

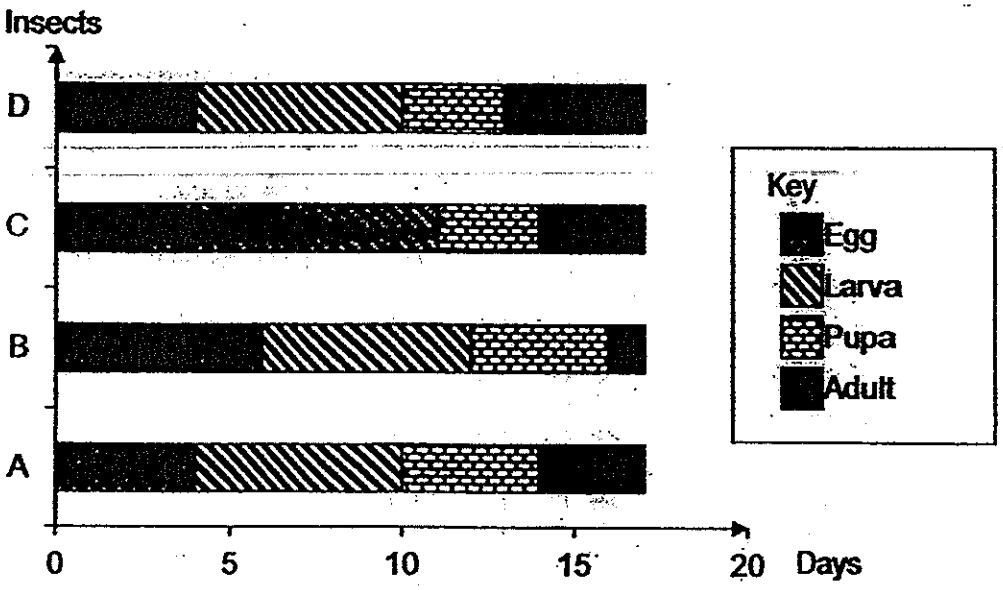
4 The table below shows the survival rate of organism Y in four habitats, P, Q, R and S.

Type of habitat	Number of organism Y hatched from eggs	Number of developing young	Number of adults formed
P	39	37	36
Q	39	37	25
R	37	3	0
S	38	33	30

Which habitat is the most suitable for organism Y to survive in?

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

5 The graph below shows the length (number of days) of the stages in the life cycle of four insects, A, B, C, and D



This insect is the most active in the larval stage and will feed on the leaves of crop X.
Which one of the insects above will cause the greatest damage to the farmer?

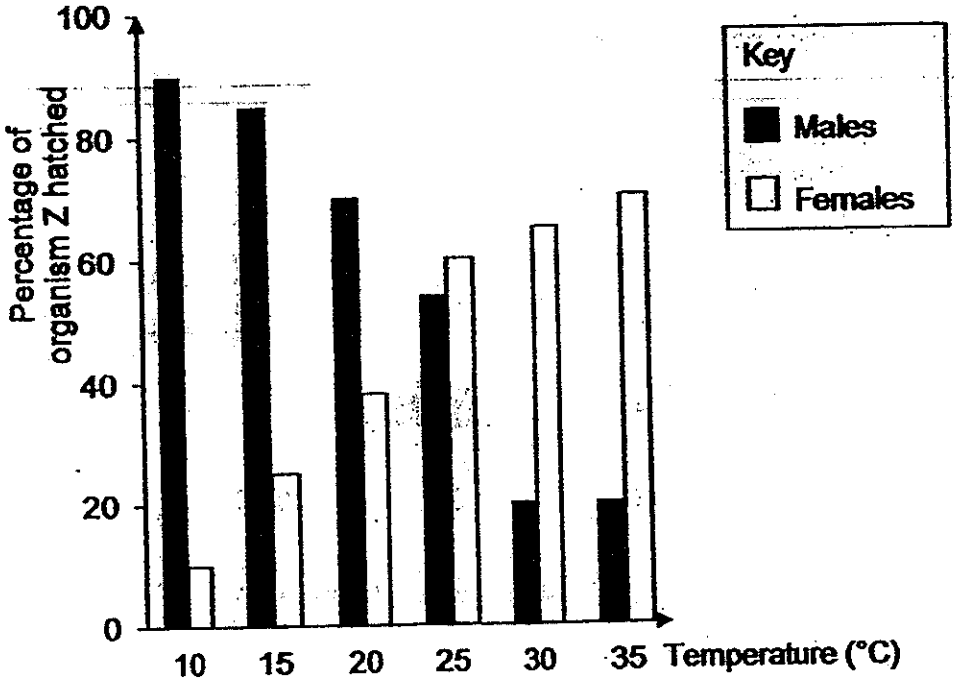
(1) Insect A

(2) Insect B

(3) Insect C

(4) Insect D

6 Organism Z is found in habitat X **The graph below shows the** temperature of habitat X in a particular year and the percentage of males and females hatched from the eggs of organism Z.



Which one of the following relationships between the percentage of females or males of organism Z hatched and the temperature is correct?

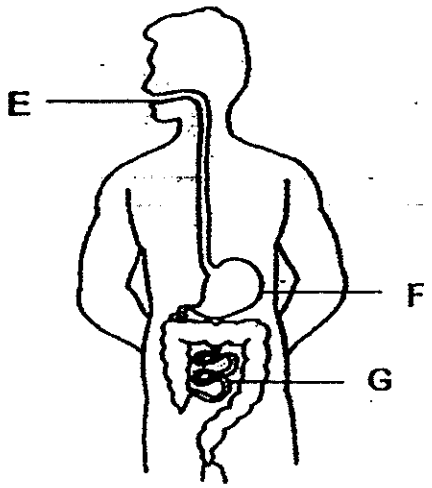
(1) **As the temperature increases, the percentage of males hatched increases.**

(2) **As the temperature decreases, the percentage of males hatched decreases.**

(3) **As the temperature increases, the percentage of females hatched increases.**

(4) **As the temperature decreases, the percentage of females hatched increases.**

7 The diagram below shows the digestive system of a human.



Which one of the following correctly matches the parts, E, F and G, of the human digestive system to their functions?

	Breaking food into smaller pieces	Release of digestive juices	Absorption of most amount of digested food
(1)	E	E, F, G	G
(2)	F	F, G	E
(3)	E, F	F, G	G
(4)	E, F	E, F, G	F, G

8 Which of the following statements about cell is/are false?

A Cells are the basic unit of all living things.

B As an organism grows, the number of cells increases.

C The size of a cell depends on the size of the organism.

(1) A only

(2) C only

(3) A and B only

(4) B and C only

9 Jin Xian carried out an experiment using four similar pots of small plants. He watered them with different amounts of water daily for two weeks.

Set-up	Amount of water (ml)
A	25
B	60
C	80
D	150

He then measured the heights of the plants on the 5th 10th and 14th day. The results are shown in the table below. The plants are considered to be growing well if they have grown by at least 10 cm after two weeks.

Day	Average height of plants (cm)			
	Set-up A	Set-up B	Set-up C	Set-up D
0	5	5	5	5
5	9	12	12	11
10	12	19	18	19
14	14	22	25	27

What is the least amount of water to be given daily to the plants to ensure that they will grow well?

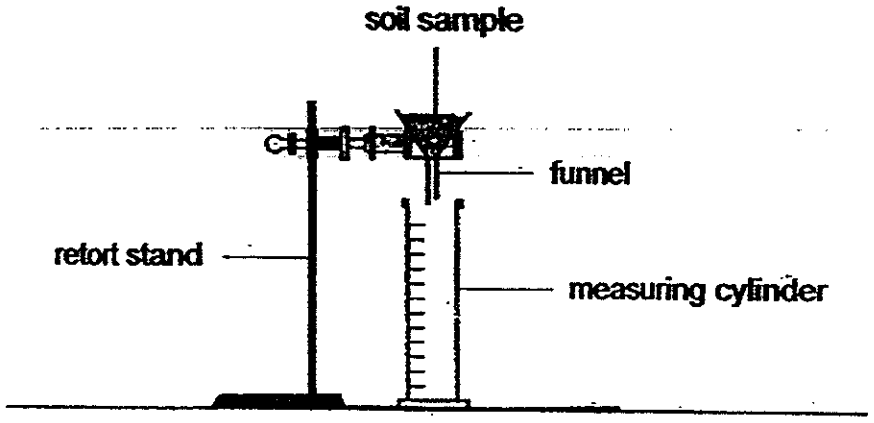
(1) 25 ml

(2) 60 ml

(3) 80 ml

(4) 150 ml

10 Nora collected four soil samples, K, L, M and N. She then poured water through the four soil samples, one at a time, using the set-up as shown below.



The average time taken for her to collect 20 ml of water was recorded in the table below.

Soil sample	Average time taken to collect 20 ml of water (s)
K	14
L	35
M	29
N	41

Which one of the following correctly shows the size of the soil particles in soil samples, K, L, M and N, in decreasing order?

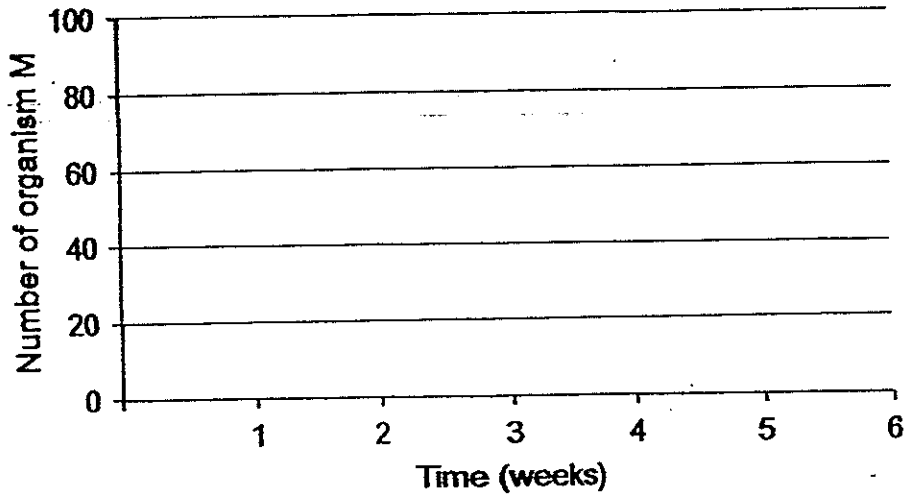
(1) K, M, L, N

(2) K, L, M, N

(3) N, L, M, K

(4) N, M, L, K

11 Eugene introduced a population of 100 organism M into his garden. The graph below shows how the population of organism M changed over a period of 6 weeks.



Which of the following statements is/are true about the population of organism M?

A The population of organism M decreases most in the second week.

B The population of organism M remains constant for two weeks after the fourth week.

C The population of organism M decreases more in the third week than in the fourth week.

D The population of organism M decreases more in the first three weeks than in the last three weeks.

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

12 The table below shows the characteristics of four different habitats, A, B, C and D, in an environment.

Characteristics of the habitat	Habitat			
	A	B	C	D
Temperature	Fluctuates widely	Fluctuates widely	Little or no change	Some changes
Light Intensity	High	Low	High	Low
Presence of water	Dry	A little damp	Damp	Very wet

Xue Ting found an organism in one of the habitats. She observed the following characteristics of the organism:

- Has an ability to store water
- Needs light for survival
- Has a waxy outer surface

In which habitat did she most likely find the organism?

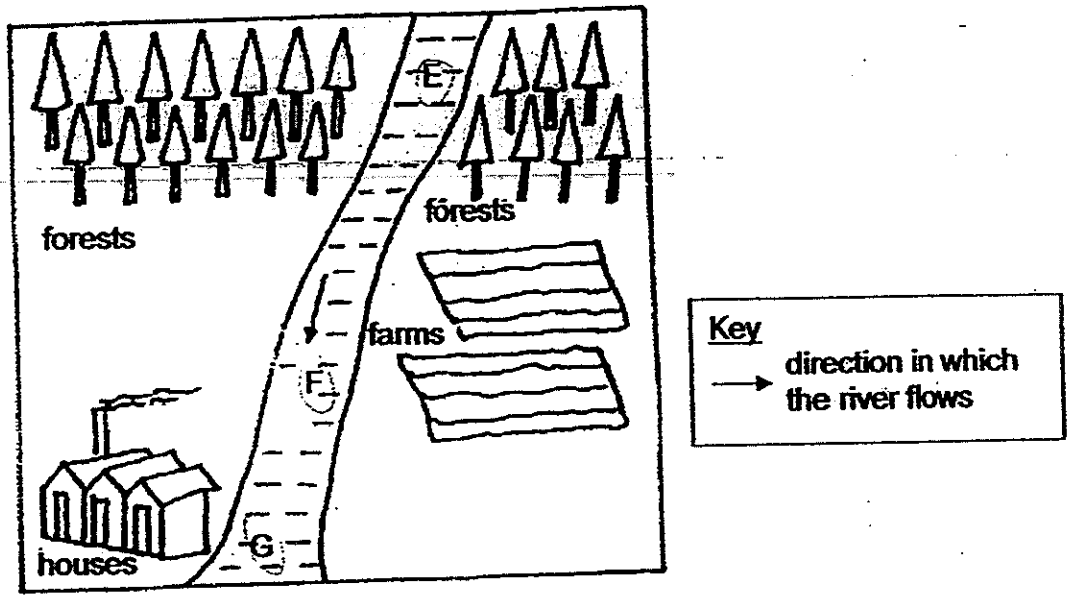
(1) A

(2) B

(3) C

(4) D

13 A river runs through a forest as shown in the diagram below.



Water samples were collected at positions, E,F and G, in the river and analysed for the amount of bacteria found in the water.

Which one of the following shows the correct order of the samples of water with increasing amount of bacteria in them?

	Increasing amount of bacteria in the water samples →		
(1)	G	F	E
(2)	E	F	G
(3)	E	G	F
(4)	F	E	G

14 A plant with leaves of green and white areas was left in a dark cupboard for 48 hours. Diagram 1 shows one of its leaves.

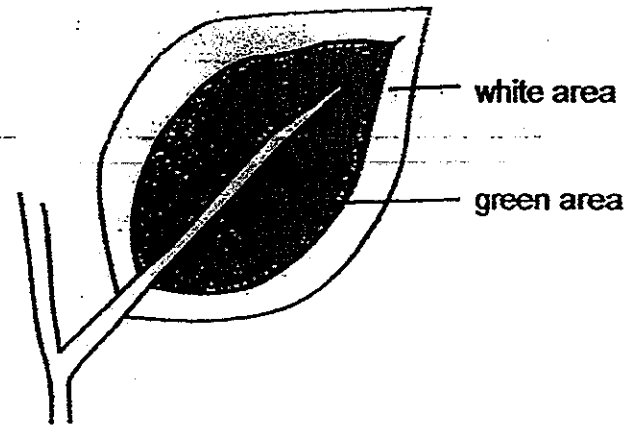


Diagram 1

Next, the top and underside of the leaf was each partially covered by a strip of black paper, as shown in Diagram 2 below.

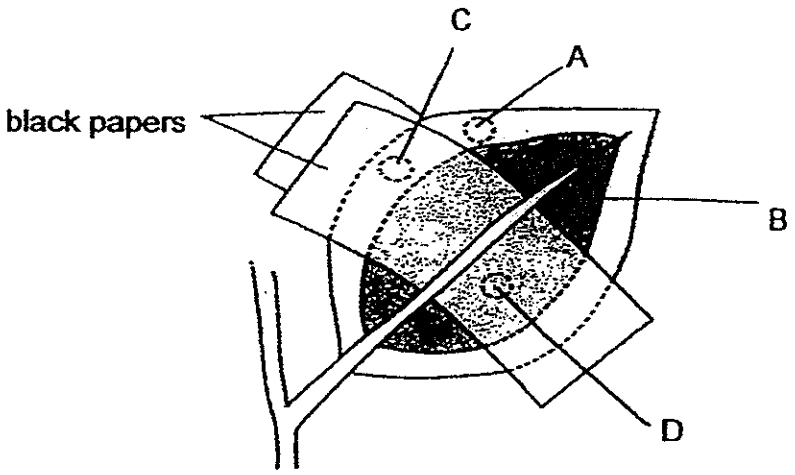


Diagram 2

The plant was then left in the sun. After a day, the leaf was plucked off and the strips of black paper were removed from both sides of the leaf. The leaf was then tested for the presence of food. In which of the areas labelled A, B, C and D is food mostly found?

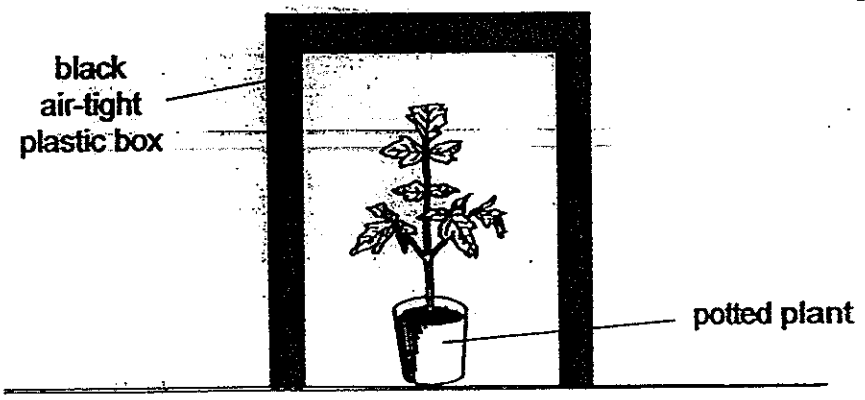
(1) A only

(2) B only

(3) A and B only

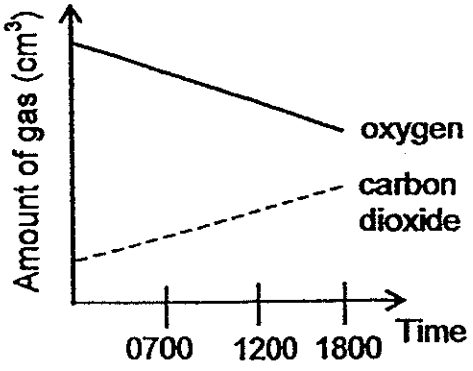
(4) C and D only

15 A potted plant was given sufficient amount of water and placed in a black air-tight plastic box for a day in a garden as shown below.

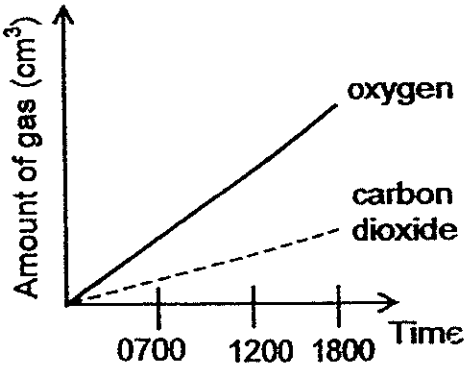


Which one of the following graphs shows the changes in the amount of oxygen and carbon dioxide present in the box during the day?

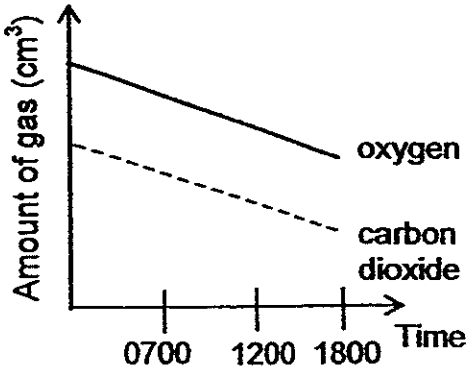
(1)



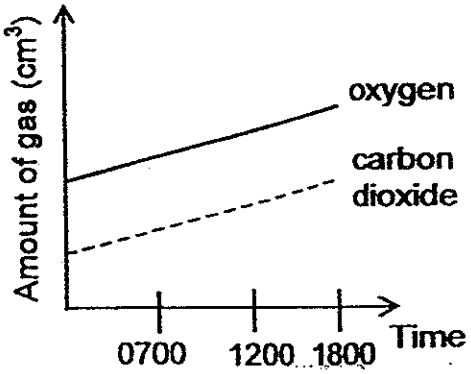
(2)



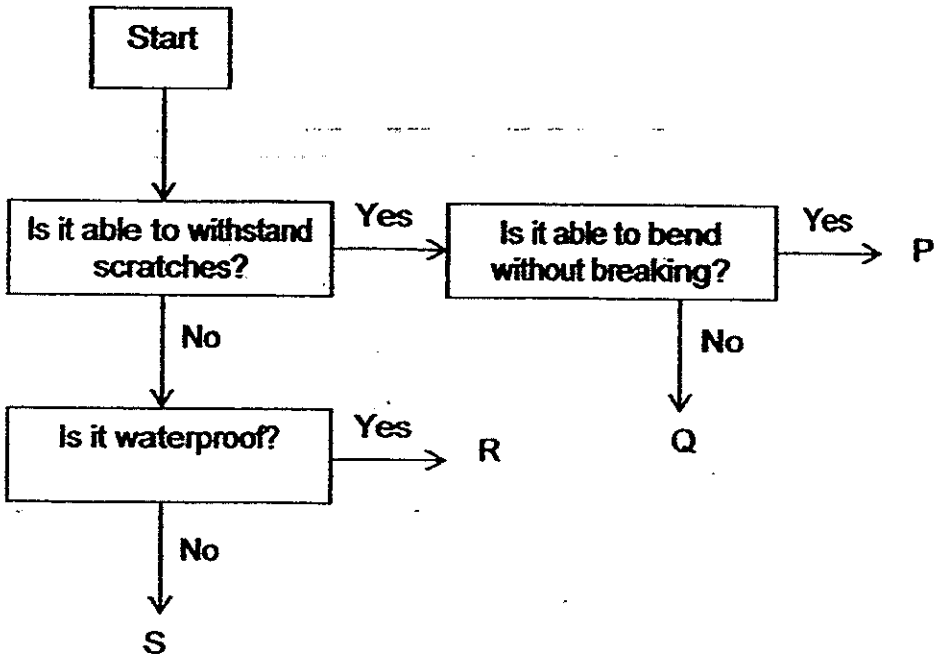
(3)



(4)



16 The flow chart below shows how four different objects, P, Q, R and S, are classified.



Based on the flow chart above, which of the objects, P, Q, R or S, best represents a towel?

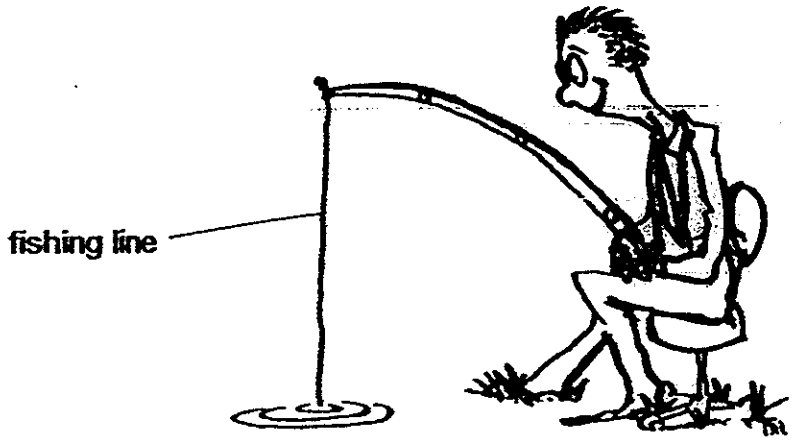
(1) P

(2) Q

(3) R

(4) S

17 Thomas carried out an experiment to test the strength of four materials, A, B, C and D, used to make fishing lines. He added weights of 5 kg at a time to each of the four materials.



He recorded the number of weights needed for each material to break in the table below.

Materials	Number of weights added just before the material broke
A	4
B	9
C	6
D	2

Which of the materials should he choose that would allow him to catch a fish of about 40 kg?

(1) B only

(2) C only

(3) A and B only

(4) C and D only

18 The table below shows the state of four substances, A, B, C and D, at different temperatures.

Substance	State of substance at		
	20°C	40°C	60°C
A	solid	solid	solid
B	solid	liquid	liquid
C	solid	solid	liquid
D	liquid	liquid	liquid

Which one of the following statements is correct?

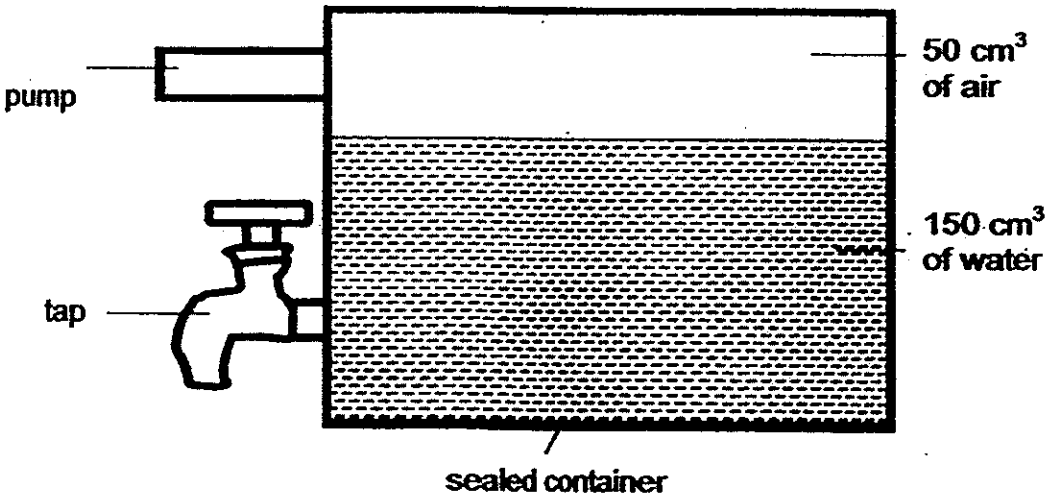
(1) The boiling point of Substance C is 60°C.

(2) Substance D has the lowest boiling point.

(3) The freezing point of Substance B is 60°C

(4) Substance A has the highest freezing point.

19 Kelvin conducted an experiment using the set-up as shown below.



He turned on the tap to drain out 20 cm^3 of water. Next, he used the pump to pump in 15 cm^3 of air into the sealed container.

What was the final volume of air in the sealed container?

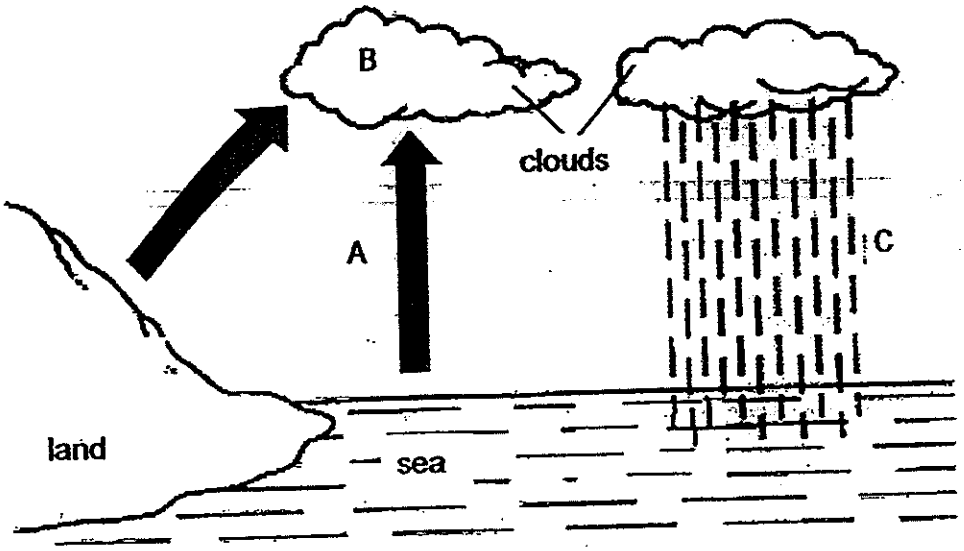
(1) 50 cm^3

(2) 65 cm^3

(3) 70 cm^3

(4) 95 cm^3

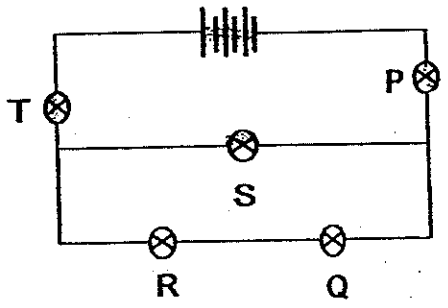
20 The diagram below shows the water cycle.



Which states of matter of water do A, B and C represent?

	State of matter		
	A	B	C
(1)	gas	gas	liquid
(2)	solid	solid	liquid
(3)	gas	liquid	liquid
(4)	liquid	liquid	gas

21 Felicia set up five bulbs, P, Q, R, S and T, in the circuit as shown below.



How many bulbs will remain lit when bulb Q fuses?

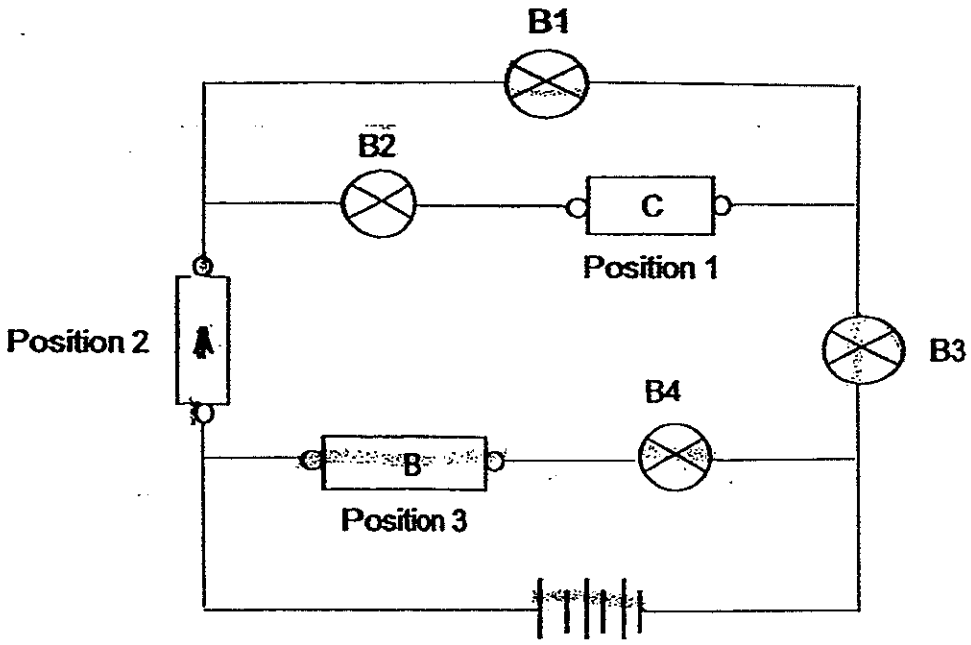
(1) 1

(2) 2

(3) 3

(4) 4

22 Han Yu had three rods, A,b and C, made of different materials. He wanted to test the electrical conductivity of the rods using an electrical circuit by placing them at various positions as shown in the diagram below.



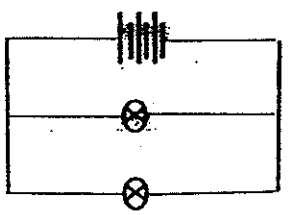
The table below shows his observations.

Bulbs	B1	B2	B3	B4
Did the bulb light up?	Yes	No	Yes	Yes

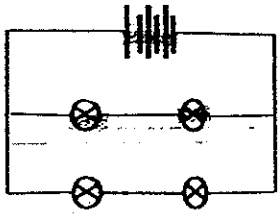
Which one of the following correctly shows the electrical conductivity of the rods A, B and C?

	A	B	C
(1)	Insulator	Conductor	Insulator
(2)	Conductor	Conductor	Insulator
(3)	Conductor	Insulator	Conductor
(4)	Insulator	Conductor	Conductor

23 The circuit diagrams below show four circuits, P, Q, R and S. The batteries and bulbs used are identical and are all working properly.

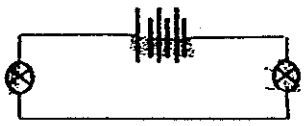


Circuit P



Circuit Q

Circuit R



Circuit S

Which of the following statements about the brightness of the bulbs is/are correct?

A Each bulb in circuit P is as bright as the bulb in circuit S.

B Each bulb in circuit P is as bright as the bulb in circuit R.

C Each bulb in circuit S is as bright as the bulb in circuit Q.

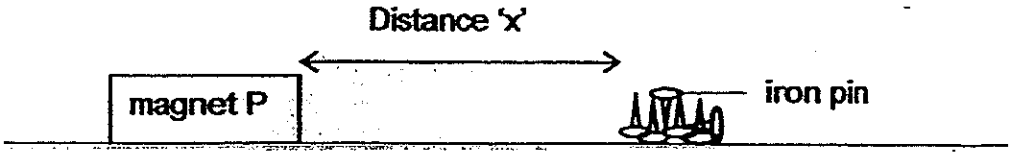
(1) B only

(2) C only

(3) B and C only

(4) A, B and C

24 Tricia carried out an experiment to find out the magnetic strength of the three magnets, P, Q and R, using the set-up as shown below.



She slowly moved magnet P towards some iron pins until the magnet first attracted the pins from a distance, X. She then repeated the procedure twice and calculated the average distance. The experiment was then repeated with two other magnets, Q and R.

The results are shown in the table below.

Magnet	Distance 'x' (cm)			
	First attempt	Second attempt	Third attempt	Average
P	3.5	4.0	3.9	3.8
Q	1.2	1.5	1.8	1.5
R	2.4	2.2	2.6	2.4

Which one of the following shows the correct order of the magnetic strength of the magnets, P, Q and R, from the strongest to the weakest?

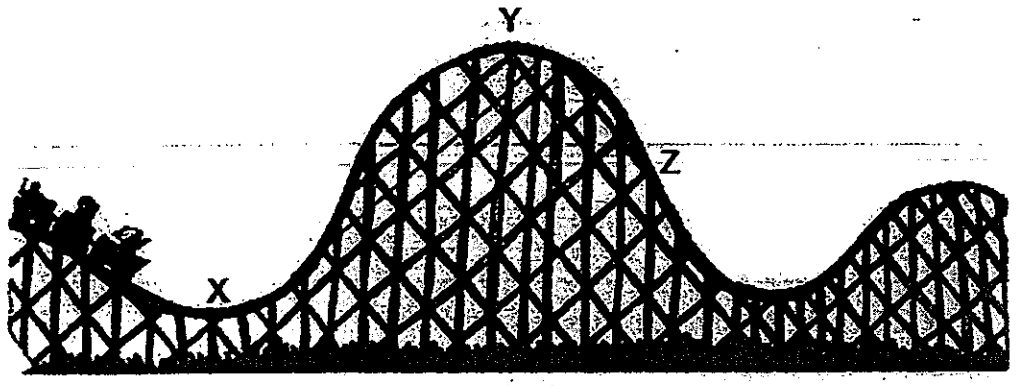
(1) P, R, Q

(2) P, Q, R

(3) Q, R, P

(4) R, Q, P

25 A group of children took a roller coaster ride.

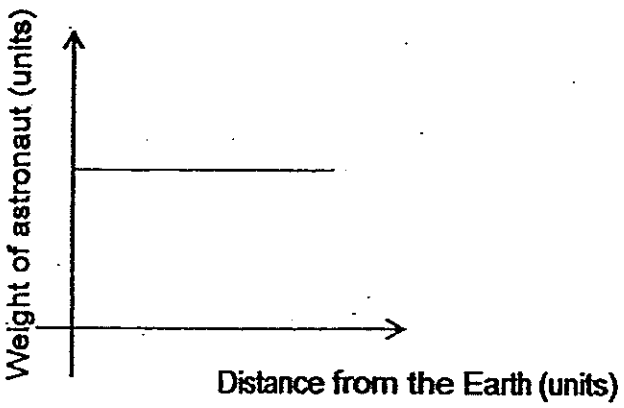


Which one of the following correctly identifies the forces that are present at positions X, Y and Z?

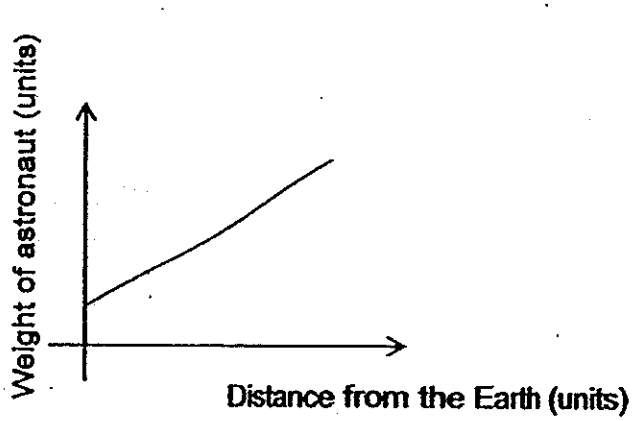
	X	Y	Z
(1)	Frictional force only	Frictional and Gravitational forces	Gravitational force only
(2)	Frictional force only	Gravitational force only	Frictional force only
(3)	Frictional and Gravitational forces	Gravitational force only	Frictional and Gravitational forces
(4)	Frictional and Gravitational forces	Frictional and Gravitational forces	Frictional and Gravitational forces

26 An astronaut in a rocket was travelling from the Earth to the Moon. Which one of the following graphs correctly shows how his weight changes as he travelled from the Earth to the Moon?

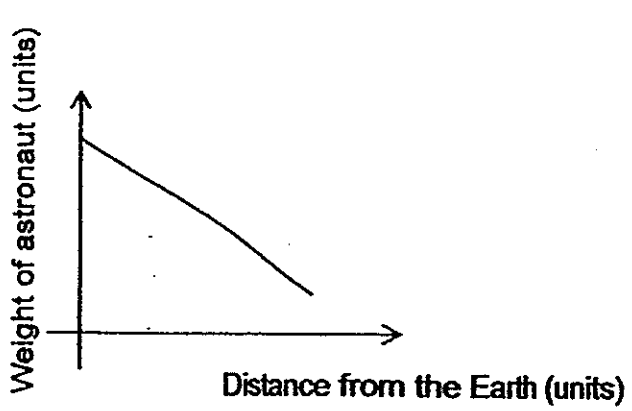
(1)



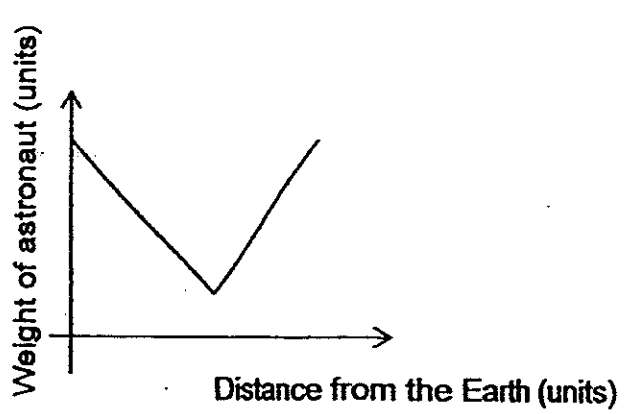
(2)



(3)

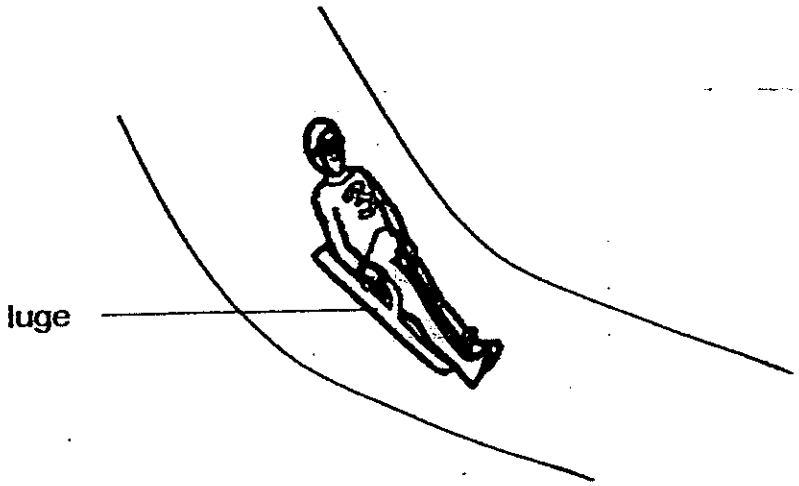


(4)



27 A luge is a small one-or-two-person sled on which one sleds facing up and feet first.

The diagram below shows a luge athlete on a luge going down a slope.



Which one of the following statements is true about how gravitational force acting on the athlete changes while he sleds down the slope?

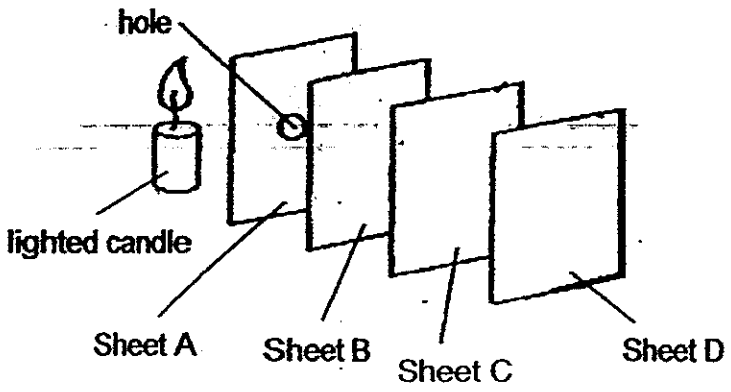
(1) The gravitational force acting on the athlete increases while he sleds down the slope.

(2) The gravitational force acting on the athlete decreases while he sleds down the slope.

(3) The gravitational force acting on the athlete remains the same while he sleds down the slope.

(4) The gravitational force acting on the athlete first increases then decreases while he sleds down the slope.

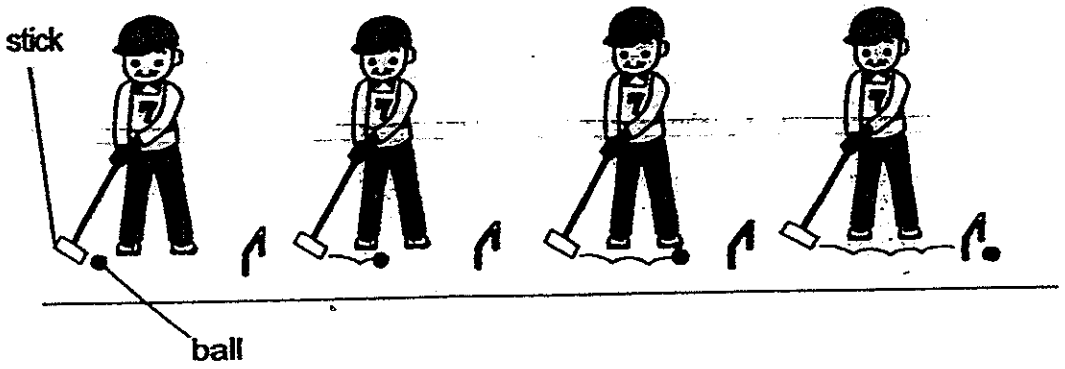
28 The experiment shown below is carried out in a dark room. Sheets A, B, C and D are arranged in a straight line. When the candle is lighted, a bright circular patch of light is seen on sheet C only



Which one of the following correctly describes the properties of the materials that sheets A, B, C and D are made of?

	Allows light to pass through	Does not allow light to pass through	Unable to tell
(1)	B	C	A and D
(2)	B	A and C	D
(3)	A and B	D	C
(4)	A and D	C	B

29 The diagrams below show the process of how james plays a game of gateball.



Which one of the following best shows the energy conversions when james uses the stick to hit the ball?

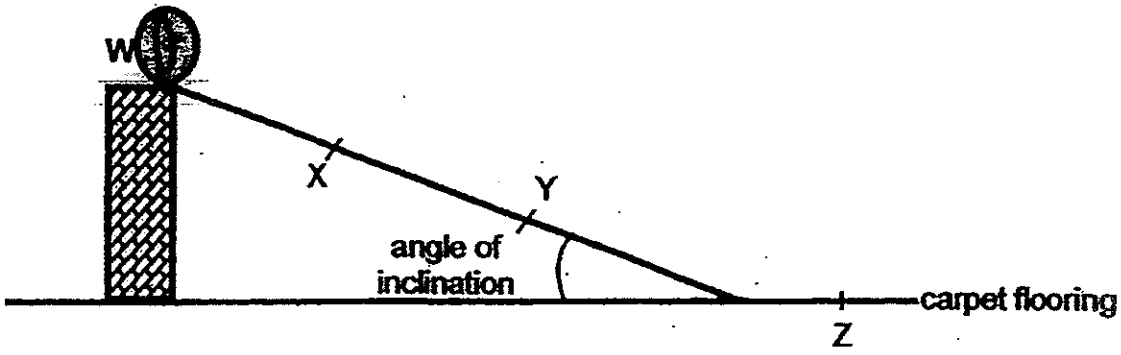
(1) kinetic energy (stick) → kinetic energy (ball) → sound energy (ball)

(2) kinetic energy (stick) → kinetic energy (ball) + sound energy (ball)

(3) chemical potential energy (James) → kinetic energy (stick) + kinetic energy (ball) + sound energy (ball)

(4) chemical potential energy (James) → kinetic energy (stick) → kinetic energy (ball) + sound energy (ball) + heat energy (ball)

30 Alice, Bryan, Calvin and Davy took turns to release a marble from Point W as shown in the diagram below. It rolled down the slope, moved along the carpeted floor and stopped at Point Z.



The following statements were made by the four pupils.

Alice	At Points X and Y, the ball only has kinetic energy.
Bryan	The ball has the greatest amount of gravitational potential energy at Point W.
Calvin	The ball would have rolled further if the experiment had been done on a marbled floor.
Davy	The ball would have rolled faster if the angle of inclination had been greater

Who had made the correct

(1) Alice and Bryan only

(2) Bryan and Calvin only

(3) Alice, Calvin and Davy only

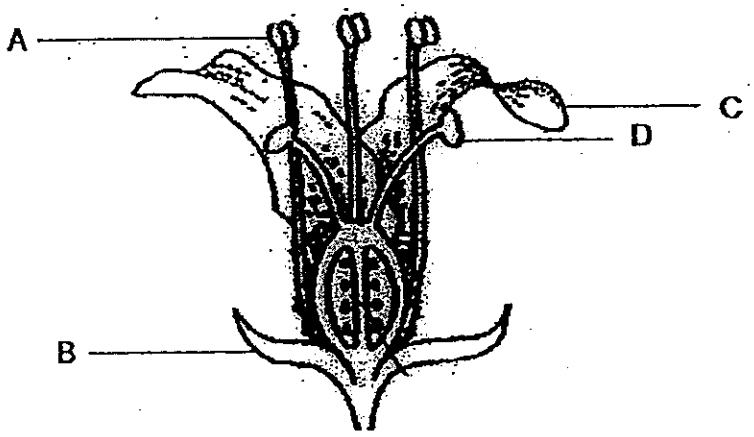
(4) Bryan, Calvin and Davy only

End of Booklet A

Booklet B (40 marks)

For questions 31 to 44, write your answers in this booklet.
The number of marks available is shown in brackets [ ] at the end of each question or part question. **(40 marks)**

31 Melissa conducted an experiment with a flower on plant H as shown in the diagram below.



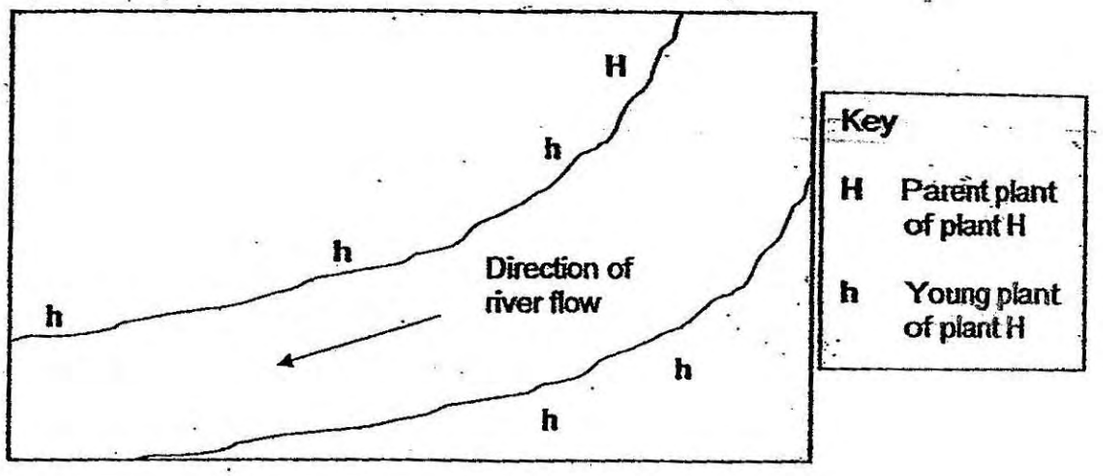
(a) Which parts of the flower would be involved when pollination occurs? [1]

_____

(b) Which part of the flower would develop into a fruit after fertilisation? Label that part of the flower in the diagram above using the letter, 'F'. [1]

Continue from Q31

(c) The diagram below shows the location of the young of plant H over a period of six months



(i) How does plant H disperse its fruits? [1]

_____

_____

(ii) State one characteristic of the fruits of plant H that enabled it to be dispersed away from the parent plant by the method mentioned in (c)(i). [1]

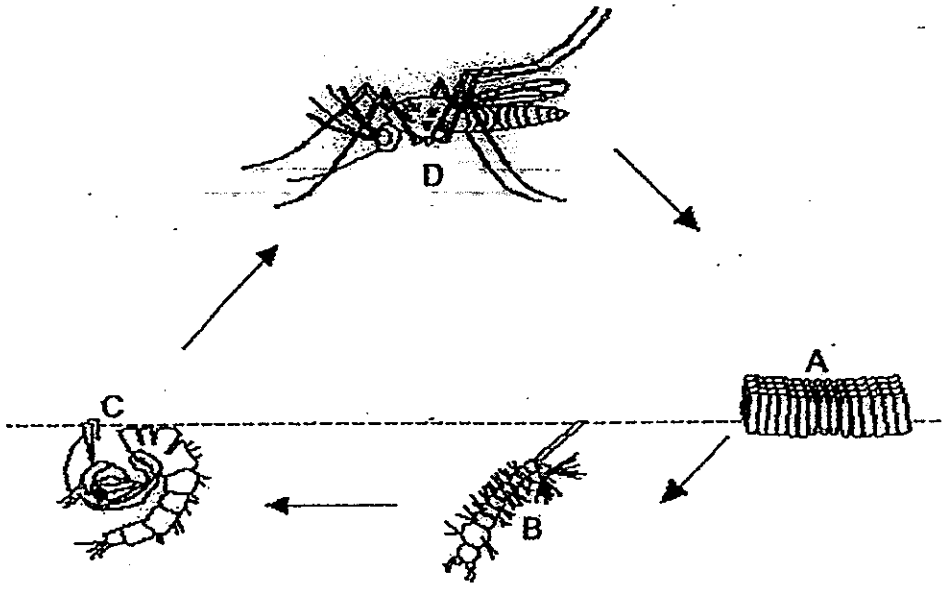
_____

_____

(Go on to the next page)

SCORE 2

32 The diagram below shows the life cycle of a mosquito.



(a) How does laying many eggs each time help the mosquitoes in their survival? [1]

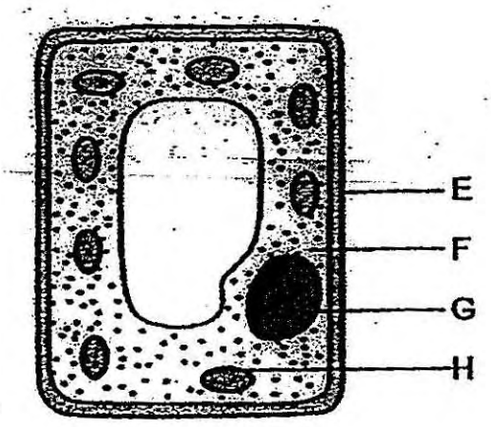
(b) Suggest an advantage for the young and the adult to live in different surroundings. [1]

(c) At which stage of the life cycle, A, B, C or D, is the mosquito most difficult to kill? Why? [1]

(Go on to the next page)

SCORE 3

33 The diagram below shows a typical plant cell



(a) Which part of the cell, E, F, G or H, controls all the activities in the cell? [1]

_____

(b) State another function of the part mentioned in (a). [1]

_____

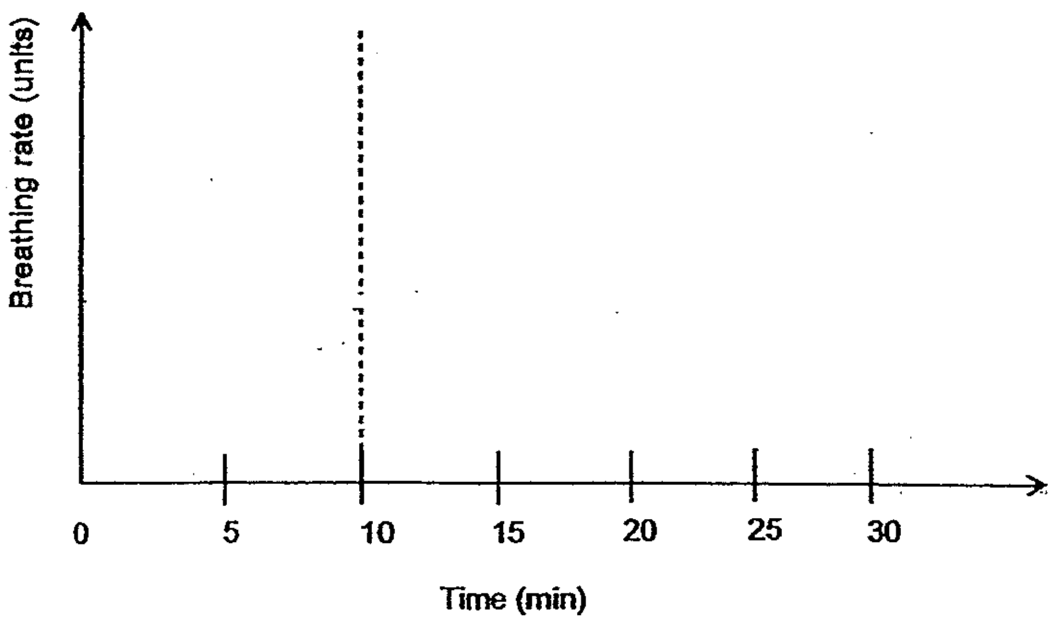
_____

(Go on to the next page)

SCORE 2

34 During a physical education lesson, Jessica remained seated for the first 10 minutes to listen to her teacher's instruction. She then played frisbee with her friends for the next 15 minutes before resting immediately on a bench for 5 minutes.

(a) Complete the graph below to show how Jessica's breathing rate changed over the period of 30 minutes. [1]



(b) Jessica's pulse rate increased while playing frisbee with her friends. Explain why this happened. [2]

____

____

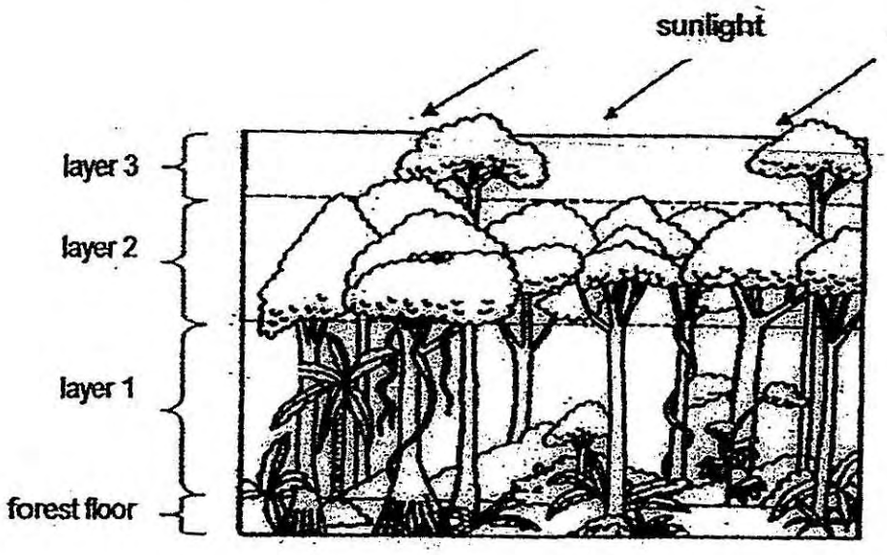
____

____

(Go on to the next page)

SCORE	3

35 The diagram below shows four different layers in a typical rainforest.



(a) How would the level of intensity of light and temperature in the rainforest change as you move upwards from the forest floor? [1]

_____

_____

(b) It is observed that very little light reaches the forest floor in the rainforest.
State one way how the plants found on the forest floor adapt themselves for survival. [1]

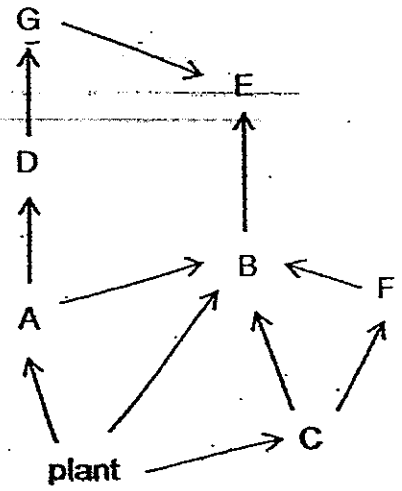
_____

_____

(Go on to the next page)

SCORE	/ 2

36 The diagram below shows the relationship of organisms A to G in a food web.



(a) Which organisms are both a prey and predator in the food web above? [2]

_____

(b) Fungi and bacteria are decomposers.

In what way are decomposers important to the plant when organisms A to G die? [1]

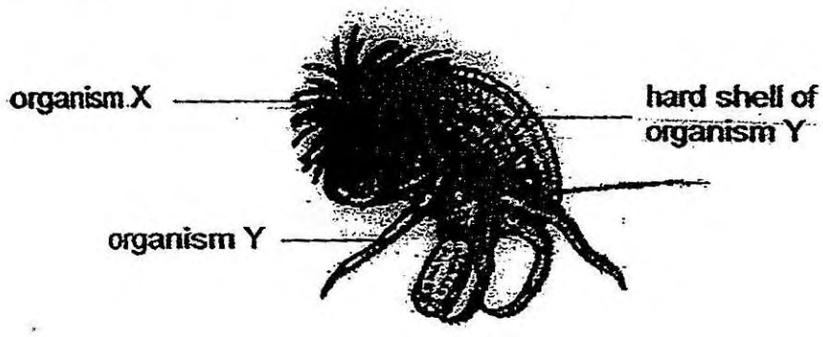
_____

_____

(Go on to the next page)

SCORE 3

37 Organism X which has long stinging tentacles attaches itself to the hard shell of organism Y as shown in the diagram below.



(a) The long stinging tentacles of organism X dangle over organism Y, covering much of the hard shell of organism Y.

How does this benefit organism Y? [1]

_____

_____

(b) Organism X moves very little on its own. However, it gets to be carried to many places when organism Y moves around.

How does organism X benefit from this? [1]

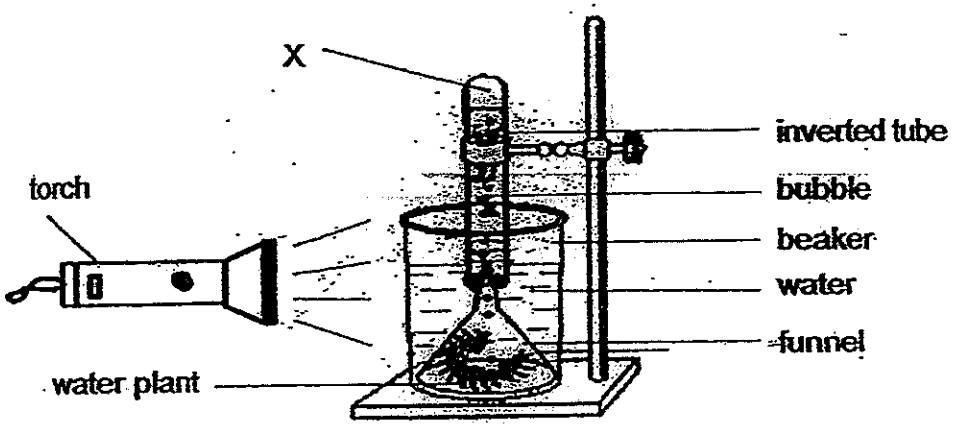
_____

_____

(Go on to the next page)

SCORE / 2

38 Evelyn set up an experiment as shown in the diagram below.



She placed a clear filter in front of the torch and counted the number of bubbles produced in an hour. The plant produced 21 bubbles in an hour. She repeated the experiment by changing the colour of the filter. She recorded the results in the table below.

Type of filter	Number of bubbles per hour
A	19
B	15
C	0
D	10
E	19

(a) What was Evelyn trying to find out from her experiment? [1]

_____

_____

(b) Identify the gas collected at X.

_____

(c) After some time, Evelyn realised that fewer bubbles were produced for all the filters. Give a reason for her observation. [1]

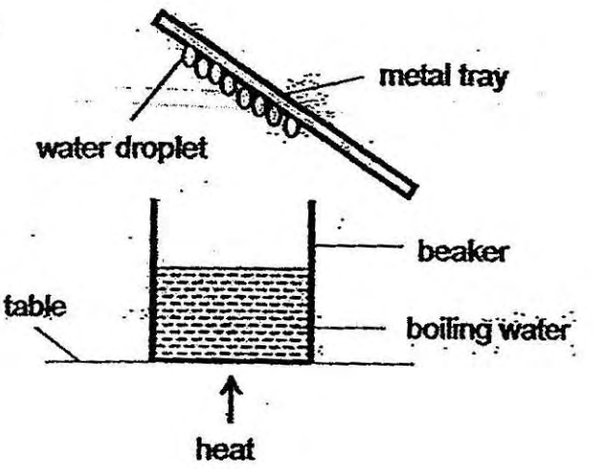
_____

_____

(Go on to the next page)

SCORE / 3

39 The diagram below shows a set-up that was placed on a table top in a room of surrounding temperature at 15°C.

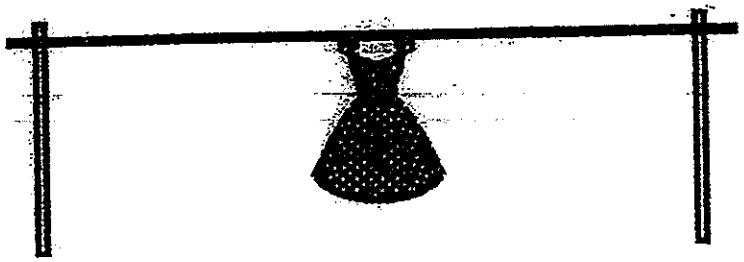


(a) After five minutes, water droplets were formed on the metal tray. Explain the observation. [2]

(b) When the set-up was placed in a room of surrounding temperature at 35°C, less water droplets were formed on the metal tray. Explain why this w

SCORE 3

40 Lynn washed her dress and hung it on a clothes line as shown in the diagram below.



After hanging her dress on a clothes line, Lynn weighed it every 15 minutes. She recorded her results in the table below.

Time (min)	Mass of dress (g)
0	850
15	600
30	520
45	480
60	420
75	380
90	350
105	320
120	320

(a) At the 105th minute, the mass of her dress was 320g. Based on her results above, how does she know that her dress was completely dry after the 105th minute? [1]

_____

_____

(b) Lynn repeated her experiment the next day. She discovered that her dress dried faster this time round. Besides leaving the dress out to dry under a windy and sunny place, suggest one other way she could do to dry the dress more quickly. [1]

_____

_____

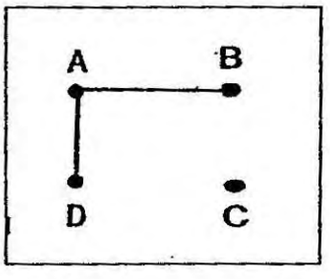
(Go on to the next page)

SCORE 2

41 Samuel tested a circuit card with a circuit tester. The results are recorded in the table below.

Clips tested	Did the bulb light up?
A and B	Yes
A and C	No
A and D	Yes
B and C	No
B and D	Yes
C and D	No

(a) Complete the circuit card below using only two lines to show how the wires are connected based on the results recorded in the table above. [1]



(b) Samuel set up another electrical circuit using two similar light bulbs and two batteries. The table below shows the results he obtained.

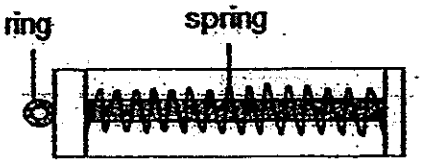
Switch P	Switch Q	Number of bulbs that lit up
closed	closed	2
closed	open	1
open	closed	2
open	open	0

Based on the results above, draw a circuit diagram of the electrical circuit that Samuel set up in the space below. [2]

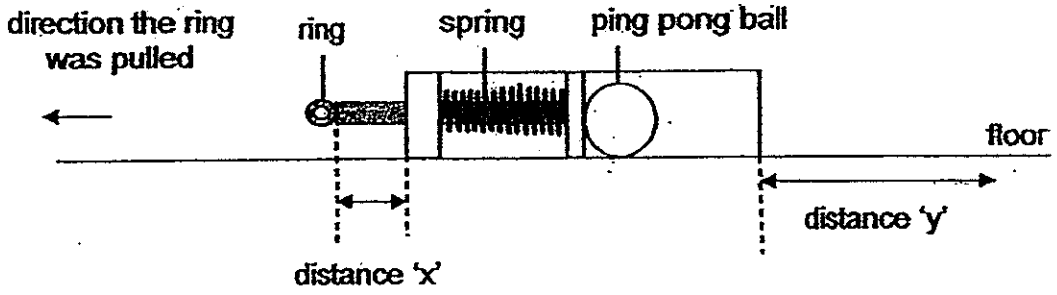
(Go on to the next page)

SCORE / 3

42 Lionel wanted to conduct an experiment using a toy he made as shown in the diagram below.



He placed the toy on the floor and pulled the ring back over a distance 'x' with a ping pong ball inserted as shown in the diagram below.



When he released the ring, he measured the distance 'y' travelled by the ping pong ball on the floor. He recorded the data as shown in the table below.

Distance 'x' (cm)	Distance 'y' (cm)
3	11
8	20
12	31

(a) Why did distance 'y' increase with increasing distance 'x'? [1]

_____

_____

(b) Lionel's Science teacher suggested that he should repeat his experiment a few more times. Why?

_____

_____

(Go on to the next page)

SCORE / 2

Continue from Q42

(c) Lionel conducted another experiment using a ping pong ball that was totally filled with plasticine. Each time when he pulled the ring back over the same distance 'x' as the previous experiment, he observed that the distance 'y' measured was always less than what he recorded previously.

Why was that so? [1]

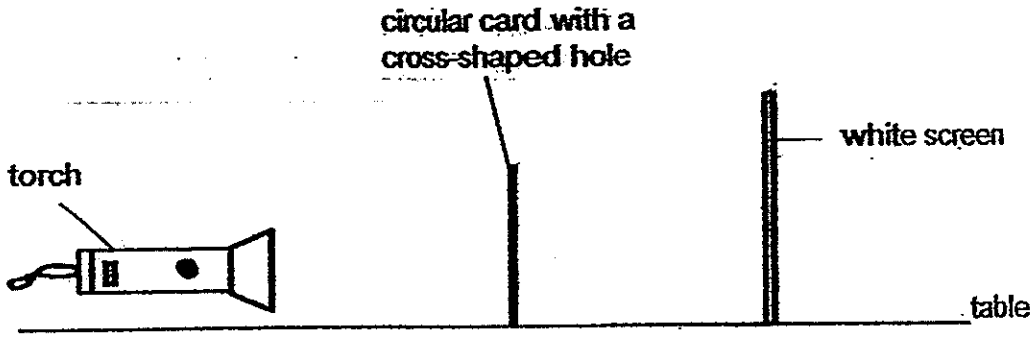
_____

_____

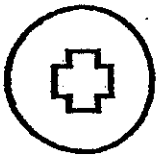
(Go on to the next page)

SCORE	/ 1

43 Janice carried out the following experiment using the set-up below. She shone the torch at the circular card.



The diagram below shows the circular card that was used in her set-up.



(a) Draw clearly what she would see on the white screen in the space provided below. [1]

(b) What property of light is shown in this experiment? [1]

_____

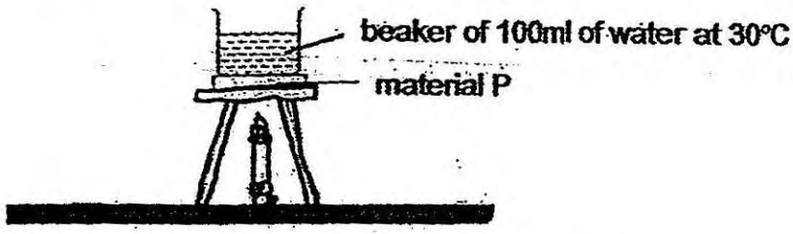
(c) If Janice were to move the circular card towards the torch, what change would she see in her observation on the white screen? [1]

_____

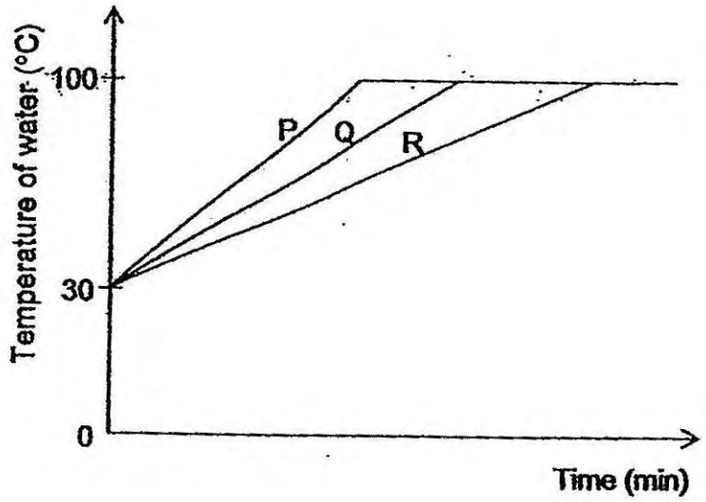
15

SCORE	/ 3

44 Matthew conducted an experiment to compare the heat conductivity of materials, P, Q and R. He placed material P below the beaker of water before heating it as shown in the diagram below. He then recorded the time taken for the water to boil.



He repeated the experiment using materials, Q and R. The graph below shows the results he collected.



(a) Give a reason why the thickness of materials, P, Q and R, must be kept the same. [1]

_____

_____

(b) What can you conclude about the heat conductivity of the three materials, P, Q and R? [1]

_____

_____

(Go on to the next page)

16

SCORE	2

Continue from Q44

(c) Matthew wanted to bring hot food and cold drinks for a picnic. He wanted to keep the food hot and the drinks cold.

(i) Which material(s) would be most suitable to make the containers? Write your answer in the boxes below. [1]

Material for container carrying hot food	
Material for container carrying cold drinks	

(ii) Explain your answer. [1]

_____

_____

End of Booklet B

SCORE	/ 2

Catholic High School P6 Preliminary Examination 2 Science 2014

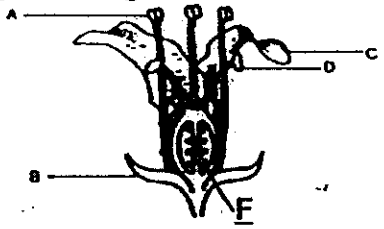
Booklet A

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

Booklet B

31 a A (stigma) and D (anther)

b label the ovary (F) in the diagram as shown:



c (i) It disperse its fruits through water.

(ii) It has fibrous husks.

32 a As some eggs may be eaten by predators, laying many eggs ensures that some eggs may hatch and grow into adults

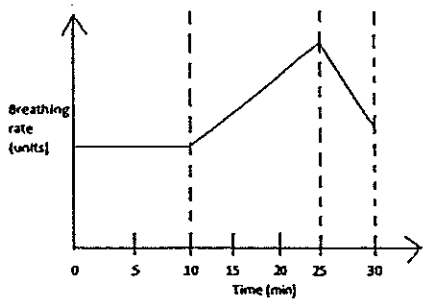
b Both the young and the adult will not compete for the same type of food.

c D. The mosquito has developed wings and can fly while the other 3 stages are spent in water.

33 a G (nucleus)

b It contains genetic materials to be passed down to the next generation (determines heredity).

34 a (Note: Breathing rate will slow down to almost the breathing rate at rest.)



b Her heart has to beat faster to pump blood faster to other parts of her body so that more oxygen and more digested food can be supplied to provide her body with more energy (via respiration) to support Jessica's more strenuous actions of playing frisbee.

35 a The intensity of light and temperature increases as one moves upwards from the forest floor.

b Their leaves have large surface area.

36 a B, D, F, G

b They break down dead matter into simple substances such as mineral salts or nutrients which is used to help the plants grow well.

37 a The stinging tentacles help to protect organism Y by acting as a protective mechanism that will sting predators of organism Y, deterring potential predators.

b X can obtain food easily as Y moves around.

38 a She was trying to find out if the colour of the filter affects the rate of photosynthesis.

b Oxygen

c The carbon dioxide in the water had almost been used up so rate of photosynthesis decreases, thus fewer air bubbles were produced.

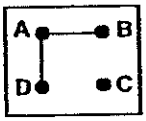
39 a The boiling water gained heat and evaporated to form steam that would come into contact with the cooler surface of the metal tray, lost heat and condensed on the metal tray.

b The tray was not as cold as before therefore the temperature difference between the water vapour and the tray decreased allowing lesser water vapour to condense on the metal tray.

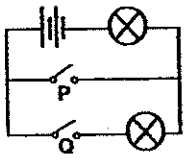
40 a The mass of the dress remained constant at 320 g which would be the mass of the dry dress as all the water must have completely evaporated off.

b Put the dress at a place that is less humid.

41 a



b



42 a When distance 'x' increases, the spring will be compressed more, so there will be more elastic spring force to push the ping pong ball across a greater distance 'y' when released.

b The experiment results will be more reliable.

c The ping pong ball filled with plasticine is heavier. Thus, there was more elastic spring force required to push it to the same distance 'y' measured previously.

43 a

b Light straights in a straight line.

c The shadow will become bigger and more faint/dimmer.

44 a This ensures that it is a fair test in which all the variables are kept the same except for the independent variable, materials used, that is investigated in this test. Hence any difference in the changes in the temperature of water is due to the different materials P, Q and R (independent variable) used and not the thickness of the materials.

b P is the best conductor of heat, followed by Q and R.

c (i)

Material for container carrying hot food	R
Material for container carrying cold drinks	R

(ii) When R was used, it took the longest time for the temperature of the water to rise hence R conducted heat from the Bunsen burner flame to the water the slowest. Thus, R is the poorest conductor of heat and can conduct heat from the surroundings to the cold drinks the slowest and conduct heat from the hot food to the surroundings the slowest.