Index No. | | | | | | |

NAN HUA PRIMARY SCHOOL
PRELIMINARY ASSESSMENT – 2018
PRIMARY 6

SCIENCE

BOOKLET A

28 Multiple Choice Questions (56 marks)

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

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the space provided.
2. Do not turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answers in the Optical Answer Sheet (OAS) provided.

Marks Obtained

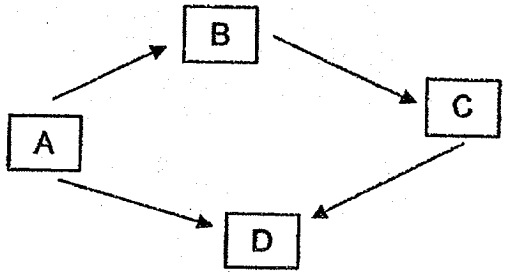
Booklet A		**/ 56**
Booklet B		**/ 44**
Total		**/ 100**

Name: _____ **(** **)** **Class: P 6** _____

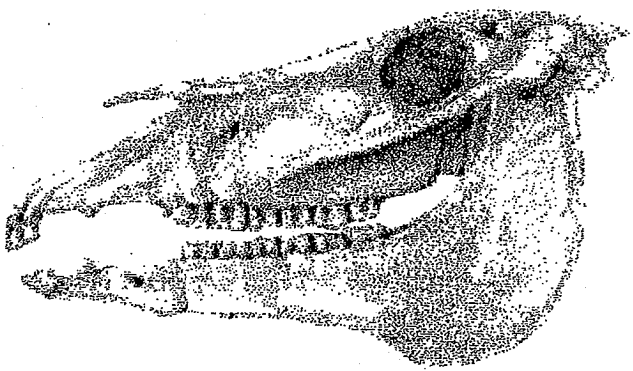
Date : 28 August 2018 **Parent's Signature:** _____

Section A: **(28 x 2 marks = 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 food web below.



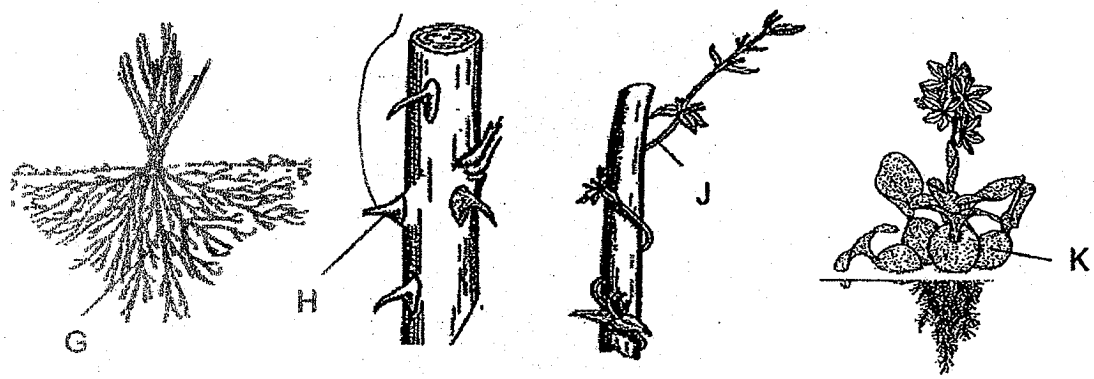
The diagram below shows the set of teeth of an organism in the above food web.



Which organism in the food web would have this set of teeth?

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

2. The diagram below shows examples of adaptations of plants G, H, J and K.



Which adaptation(s) help(s) the plant to receive more water?

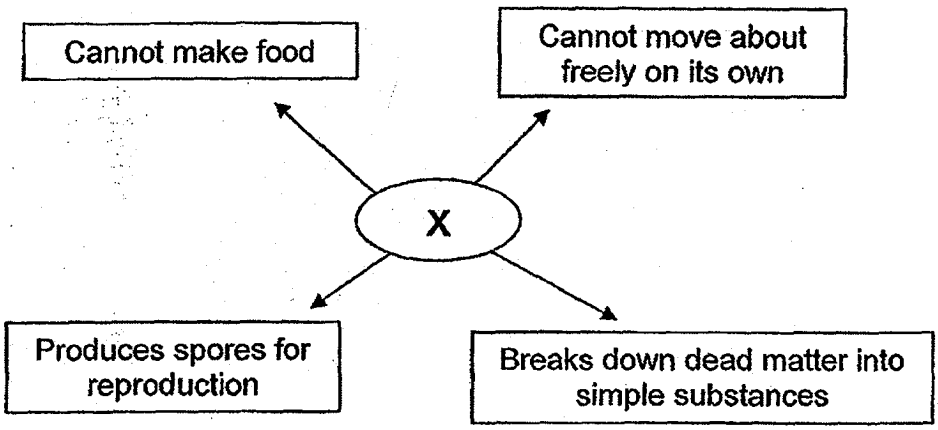
(1) G only
(2) G and K only
(3) H and J only
(4) H, J and K only

3. What are the possible effects of global warming?

A Acid rain
B Burning of fossil fuels
C Depletion of ozone layer
D Melting of polar ice caps
E Increased deforestation activities
F More severe droughts and floods

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

4. Study the diagram below which shows some characteristics of Organism X.

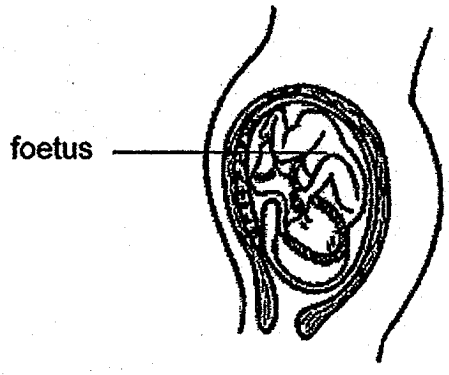


What can Organism X be?

A Mould
B Mushroom
C Earthworms
D Bird's nest fern

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

5. The diagram below shows a developing human foetus in a mother's womb.



Which of the following statements about the developing foetus are correct?

A It is formed from one fertilised egg cell.
B As it develops and grows bigger, the cells need to grow larger in size.
C The genetic information of the father can be passed on to the foetus only when it is fully formed.
D The fertilised egg divides to form many cells and they form the different parts of the developing baby.

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

6. Jerry found an egg of animal X. After the egg had hatched, he observed the animal over a period of time and recorded his observations in the table below.

Observation	Yes/No
The young resembles the adult	No
It is a pest in one or more stages in its life cycle	Yes
It lives in water at one or more stages in the life cycle	No

What is animal X?

(1) Frog
(2) Butterfly
(3) Mosquito
(4) Cockroach

7. Susan observed three cells under a microscope and made the following observations. A tick (✓) indicates that the cell part is present.

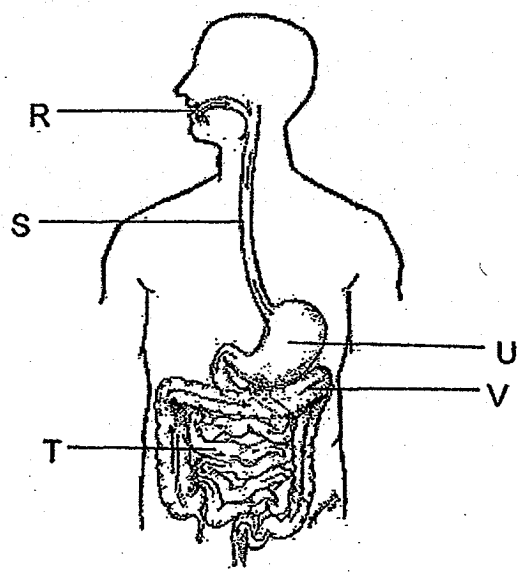
Cell part	Cell X	Cell Y	Cell Z
Nucleus	✓	✓	✓
Cell wall	✓		✓
Cytoplasm	✓	✓	✓
Cell membrane	✓	✓	✓
Chloroplast	✓		

Which of the following statements is/are correct?

A Both Cell X and Cell Z are plant cells.
B Cell Y and Z cannot trap light but Cell X can.
C Cell Z does not have a regular shape but Cell X has.
D Cell Y is the only cell that cannot make its own food.

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

8. The diagram below shows the human digestive system.

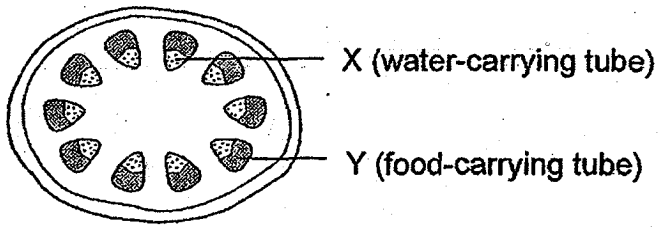


Which of the following statements is/are correct?

A Digestion of food takes place in R, S, T and U.
B Water is removed from the undigested food in V.
C Digested food in T is absorbed into the blood and then transported to all parts of the body.

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

9. The diagram below shows the cross-section of the stem of a plant.



Fatimah made the following statements about the parts labelled 'X' and 'Y'.

A Without Y, the plant is not able to make food.
B X and Y are fine tubes that run through the leaves, stem and roots. ✓
C The movement of food in Y can be both upwards and downwards.
D Both X and Y ensure that water, food and mineral salts are transported to the different parts of the plant.

Which of the statements are correct?

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

10. Jeremy counted the number of organisms in his school pond and recorded his results in the table below.

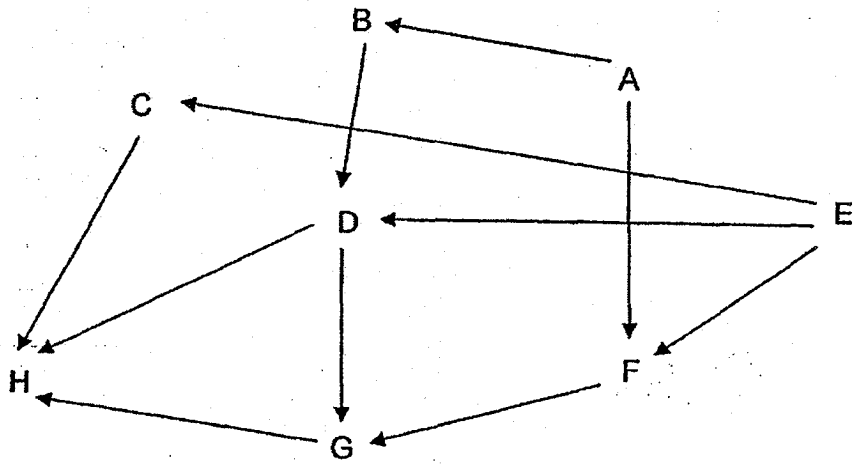
Type of organisms	Number of organisms
Tadpole	7
Dragonfly nymph	8
Pond skater	2
Frog	3
Water lily	6
Snail	4

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

A There are 30 organisms in the community.
B Dragonfly nymph forms the largest population.
C There are 5 populations of organisms altogether.
D There is only 1 population of plants in the school pond.

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

11. The food web below shows the food relationships among some organisms in a pond community.

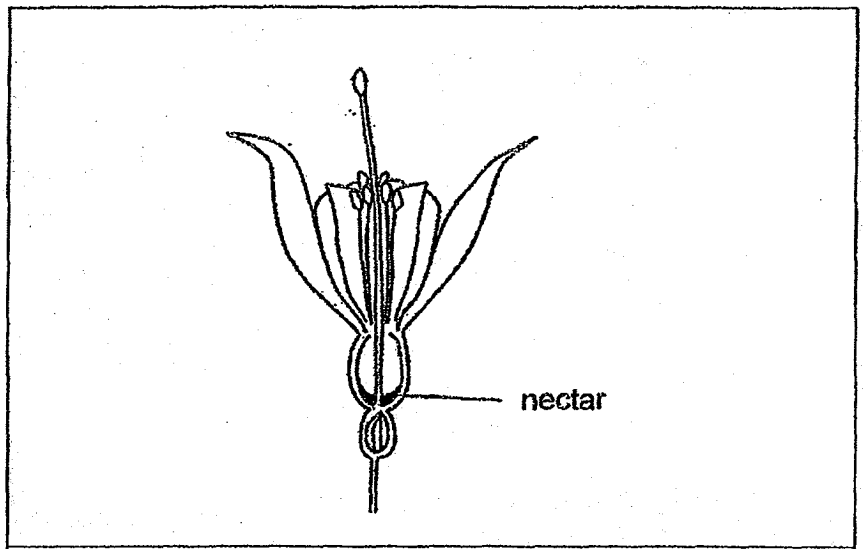


Based on the information provided, which of the following statements are correct for the above food web?

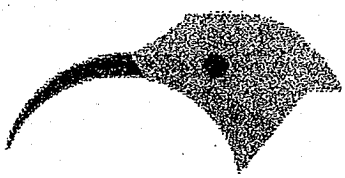
A There are two omnivores in the food web.
B There are six food chains in the food web.
C There are three predators in the food web.
D There are three herbivores in the food web.

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

12. The diagrams below show a flower containing nectar of plant X and two birds, A and B, with different types of beaks.



Flower of plant X



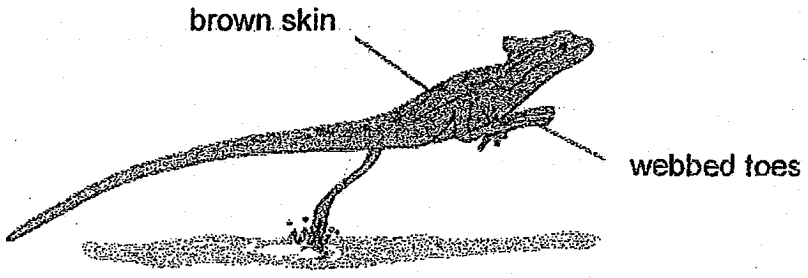
A

B

Which bird, A or B, is more likely to feed on the nectar of this flower and how is this bird important to plant X?

	Bird	The bird helps the plant to:
(1)	A	pollinate the flower
(2)	B	pollinate the flower
(3)	A	disperse the fruit
(4)	B	disperse the fruit

13. The picture below shows a basilisk lizard.



Basilisk lizards are often found on branches of trees that grow next to water. They can run across the surface of the water.

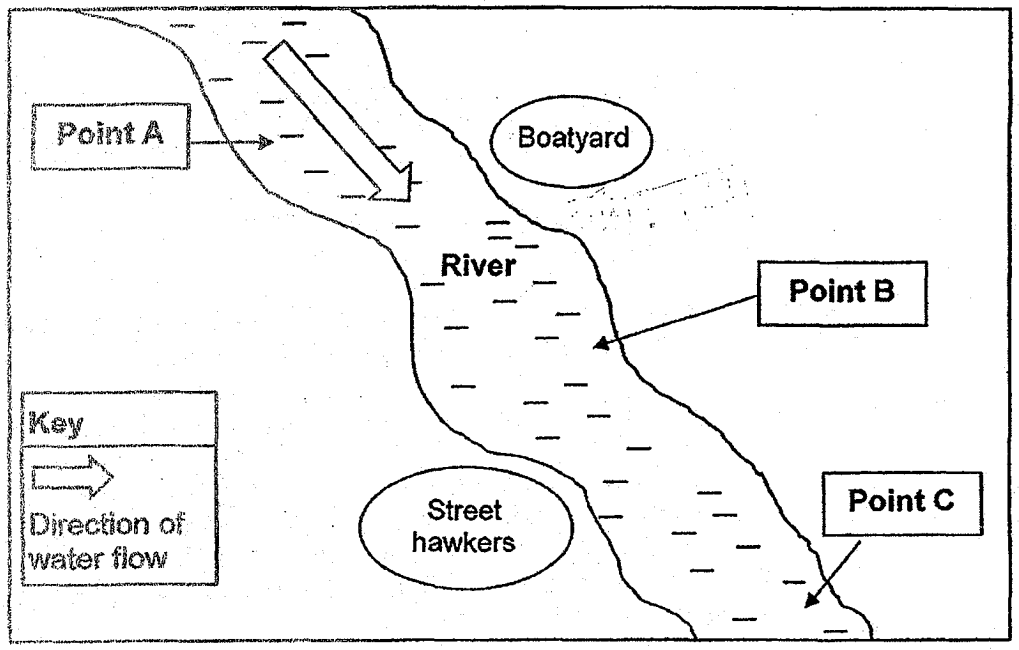
The statements below describe some adaptations of the basilisk lizard.

A It drops out of the tree branch when it senses danger.
B It can run very quickly across water to escape from its predators.
C It has brown skin to help it blend in with the branches of the tree.
D It has webbed toes to help it swim quickly across water to escape from its predators.

Which of the statements above show the behavioural adaptations of the basilisk lizard that can enhance its survival?

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

14. The diagram below shows part of a river that flows downstream. Both the boatyard and street hawkers discharge waste into the river.



Based on the given information, which of the following statements are definitely true?

A The river at Point A is the least polluted.
B The river at Point C is more polluted than Point B.
C The source of pollution at Point C comes from the activities of the street hawkers only
D The activities from the street hawkers polluted the river more than the activities from the boatyard.

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

15. Compare a sperm and a pollen grain.
Which of the following comparisons is/ are **incorrect?**

	Sperm	**Pollen grain**
A	It cannot move by itself	It can move by itself
B	It is produced in the testis	It is produced in the anther ✓
C	It contains hereditary information	It does not contain hereditary information

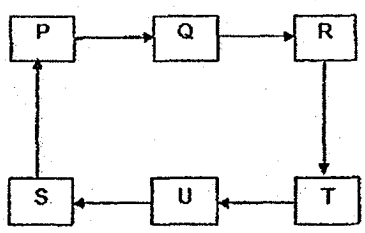
(1) A only
(2) B only
(3) A and C only
(4) B and C only

16. The following statements describe how the human circulatory system works.

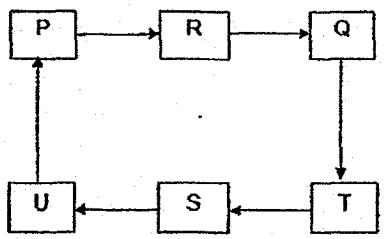
Representative letter	Statement
P	The heart pumps blood to the lungs.
Q	The blood that is rich in oxygen flows to the heart.
R	Carbon dioxide in the blood is exchanged for oxygen.
S	Oxygen in the blood is exchanged for carbon dioxide.
T	The heart pumps blood rich in oxygen to the rest of the body.
U	The blood that is rich in carbon dioxide flows to the heart.

Which of the following shows the correct order of how the human circulatory system works?

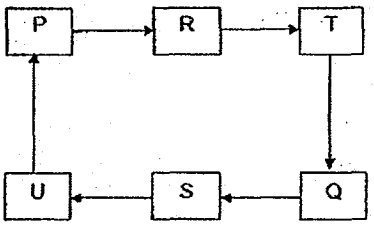
(1)



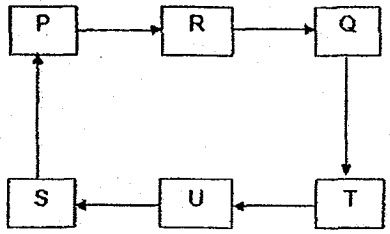
(2)



(3)

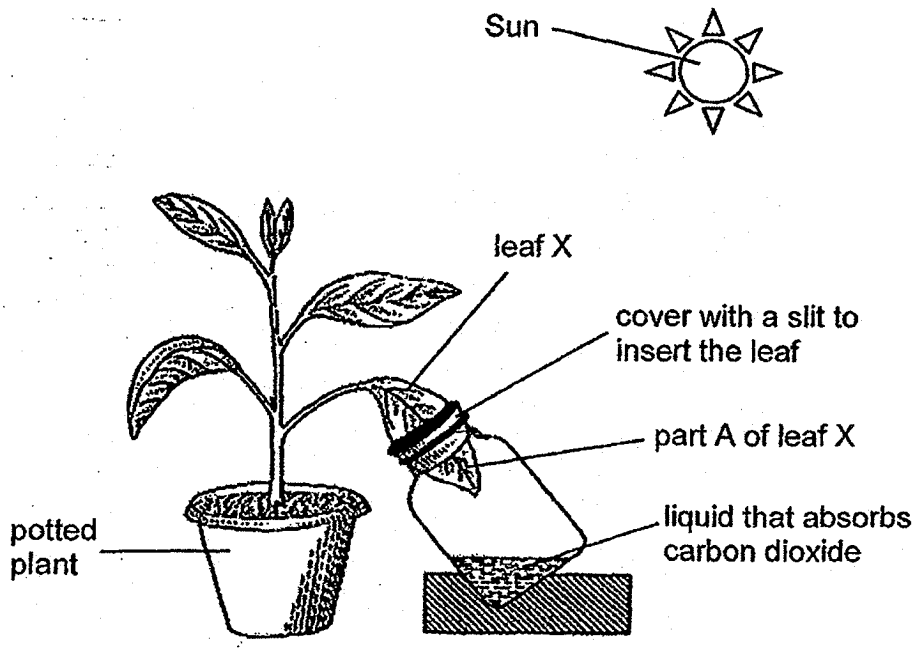


(4)



17. Devi set up an experiment as shown below. She inserted part of leaf X into a sealed container through a slit in the cover as shown. She then placed the plant in a dark room for two days to destarch the plant.

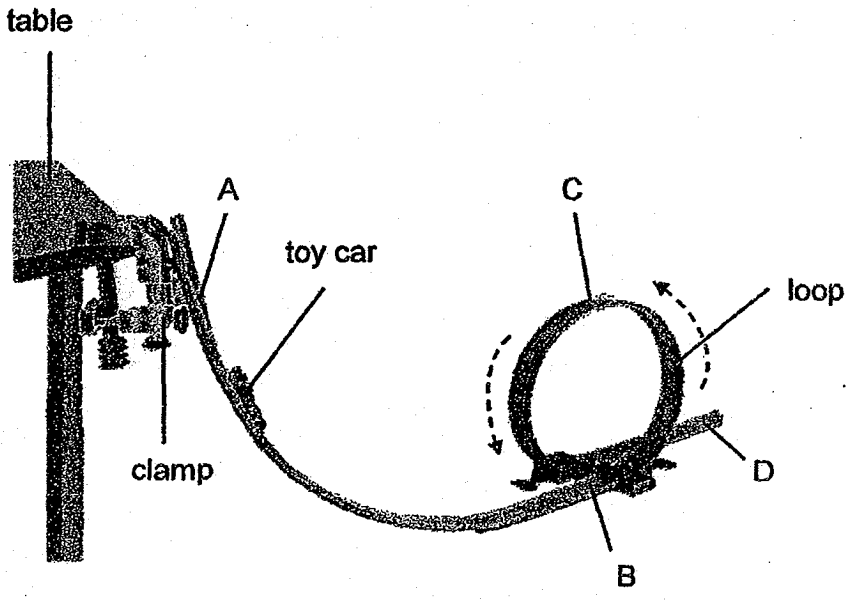
After two days, she placed the plant under the Sun for one day before testing leaf X for the presence of starch using iodine solution. Iodine solution will turn dark blue in the presence of starch.



What was Devi trying to find out and what would be the corresponding results for part A of leaf X?

	Aim of experiment	Result of iodine test on part A
(1)	To find out if plants need light to make food .	Iodine solution remained yellowish brown as starch was absent
(2)	To find out if plants need light to make food	Iodine solution turned dark blue as starch was present
(3)	To find out if plants need carbon dioxide to make food	Iodine solution remained yellowish brown as starch was absent
(4)	To find out if plants need carbon dioxide to make food	Iodine solution turned dark blue as starch was present

18. Ken clamped a toy car track to a table as shown in the diagram below. He let go of the toy car at point A. The toy car then travelled to point B, round the loop, passing by C and then finally reaching D.



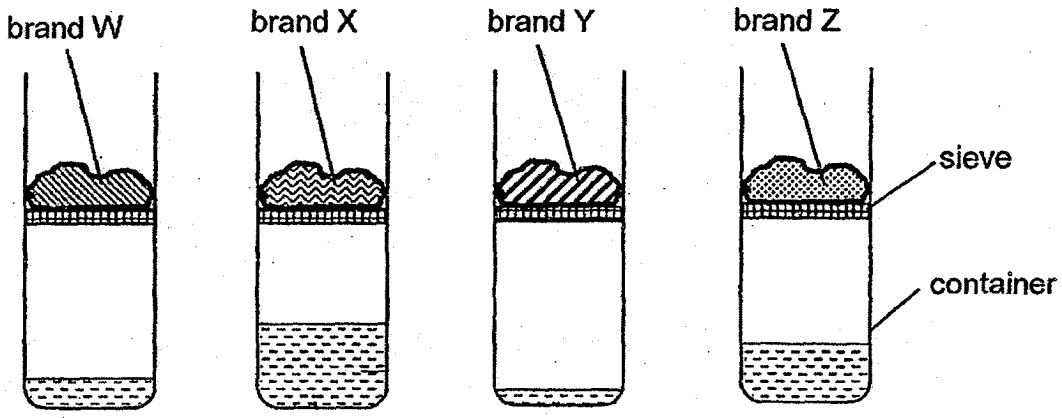
Which of the following statements about the four points, A, B, C and D is/are correct?

A The toy car has the greatest kinetic energy at C.
B The toy car has the greatest potential energy at A.
C The toy car has more kinetic energy at B than at A.
D The toy car has more potential energy at C than at D.

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

19. Henry conducted an experiment on four different brands of rabbit litter, W, X, Y and Z, using the set-ups below. Rabbit litter is used to absorb the urine of rabbits to keep the cage dry for the rabbits.

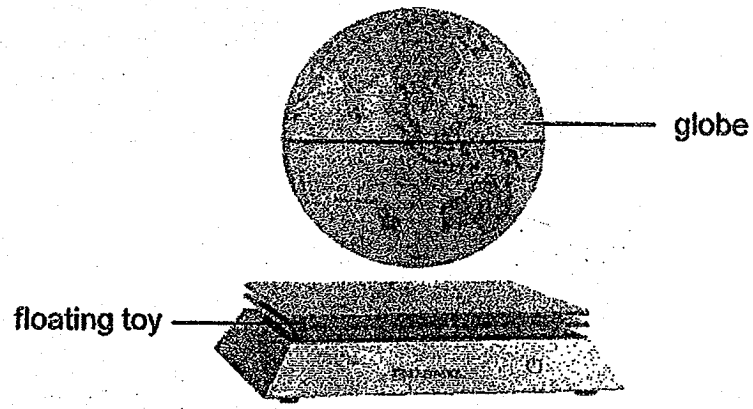
He placed the different brands of litter into a container that is fitted with a sieve. He then poured 100 ml of water into each container and noted the amount of water collected at the bottom of the container after 15 minutes.



Which brand should Henry buy if he wanted to keep his rabbit's cage as dry as possible?

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

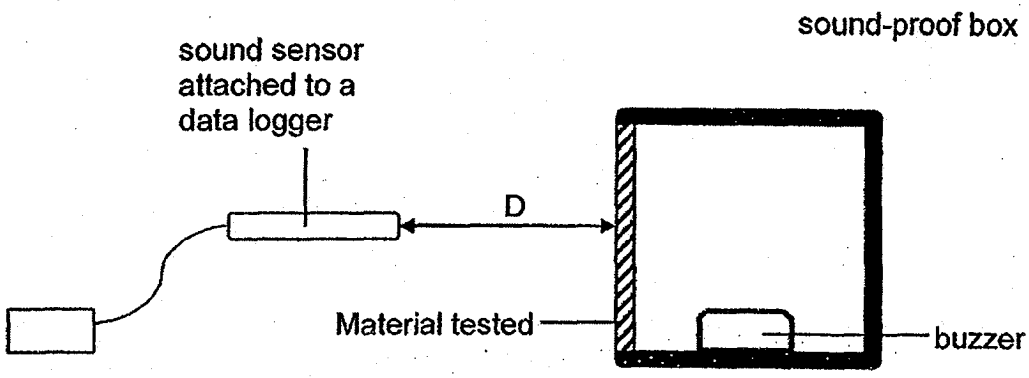
20. The diagram below shows a floating toy. The globe is floating in the middle of the toy. The globe is not moving while in mid-air.



What are the forces acting on the globe?

(1) Magnetic force only
(2) Magnetic force and air resistance only
(3) Magnetic force and gravitational force only
(4) Magnetic force, air resistance and gravitational force

21. Larry wanted to find out the effect of the thickness of a material on the loudness of sound. He set up an experiment as shown below. He covered the open side of a sound-proof box with the material that he wanted to test.



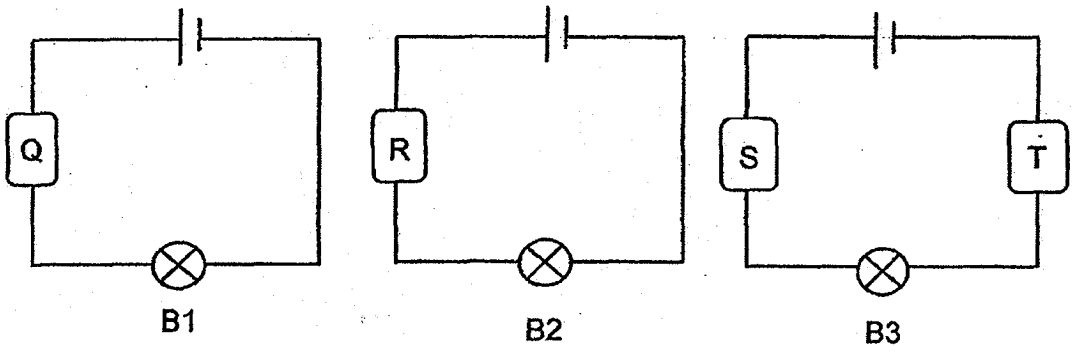
The buzzer was set to ring at a fixed loudness.

Which two set-ups should he use in the experiment in order to have a fair test?

Set-up	A	B	C	D	E
Type of material	cotton	silk	nylon	cotton	nylon
Thickness of material (mm)	1	1	2	2	2
Distance, D (cm)	10	5	10	10	5

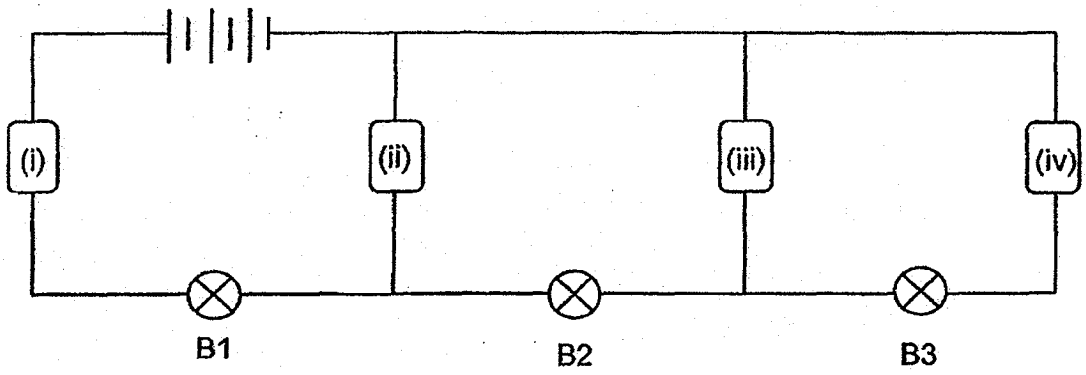
(1) A and C
(2) A and D
(3) C and D
(4) C and E

22. Mary set up three circuits as shown in the diagram below. Q, R, S and T were objects used in the circuit. She discovered that bulbs B1 and B2 did not light up and bulb B3 lighted up.



She then combined the three circuits to form a single circuit after rearranging the objects as shown in the diagram below.

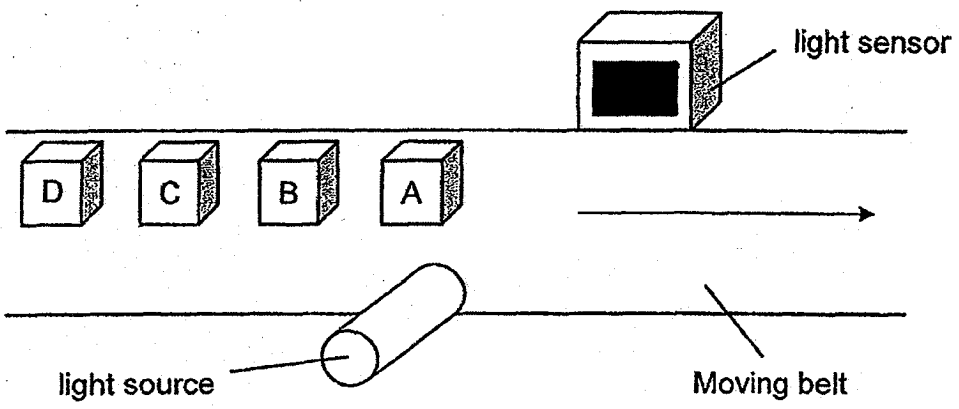
She discovered that bulbs B1 and B2 lighted up in the new circuit. However, bulb B3 did not light up.



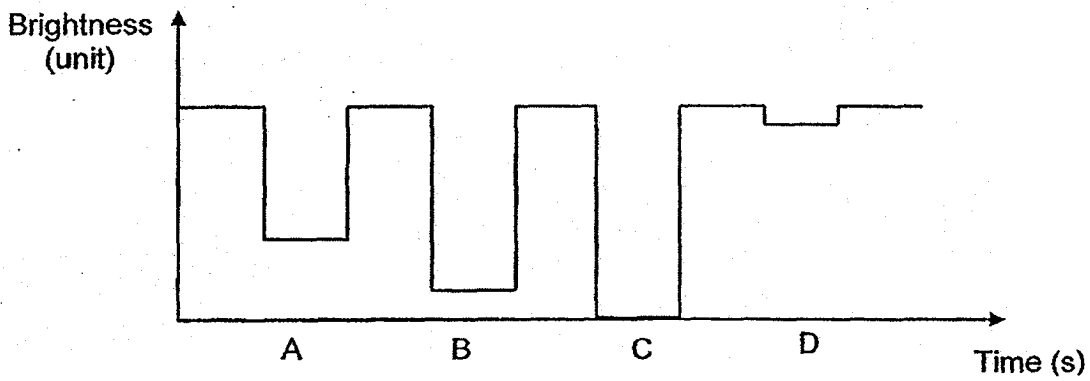
From her observations, which of the following correctly shows the position of Q, R, S and T in the circuit shown above?

	Position of object			
	(i)	(ii)	(iii)	(iv)
(1)	Q	R	S	T
(2)	S	Q	T	R
(3)	S	T	R	Q
(4)	R	Q	T	S

23. The set-up below showed how a light source and a light sensor could be used to determine the transparency of an object. Four cubes, A, B, C and D, were placed on a moving belt which moved at a constant speed. The four cubes were made of different materials.



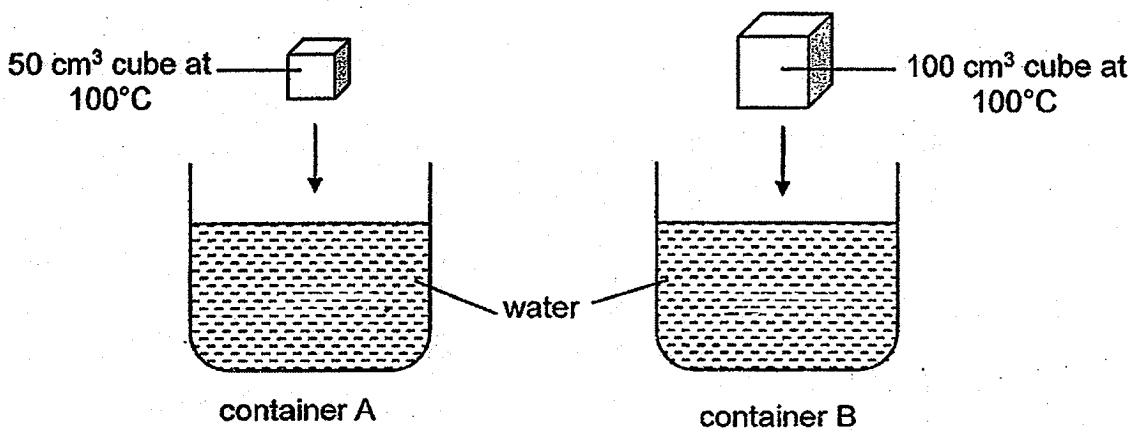
The data from the light sensor was plotted on a graph shown below.



Based on the graph above, which of the materials is best for making a safe to keep a person's valuables?

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

24. Ginny placed two metal cubes of the same temperature but different volumes into two containers, A and B, as shown below. Each container contains 500 ml of water at 25°C at the start of the experiment.

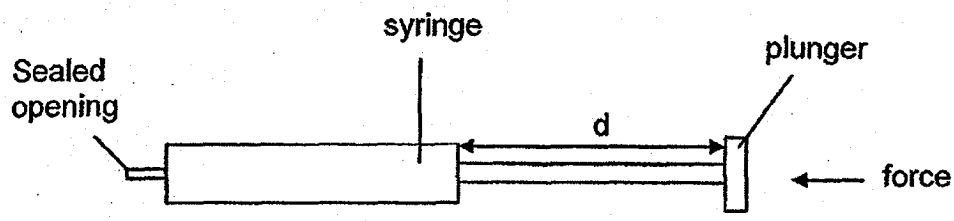


After 5 minutes, Ginny measured the temperature of water in each container.

Which of the following would most likely be the observation that Ginny will make?

	Observation
(1)	Water in container A had a lower temperature than B.
(2)	Water in container A had a higher temperature than B.
(3)	Water in both containers had the same increase in the temperature.
(4)	Water in both containers had the same decrease in the temperature.

25. Mike conducted an experiment with the set-up shown below. The initial distance of d is 10 cm.



He filled the syringe completely with different objects and pushed the plunger as hard as he could. He then measured the distance, d, and recorded the following results.

Object	Distance d (cm)
P	10
Q	9.5
R	10
S	5

What could objects P, Q, R and S be?

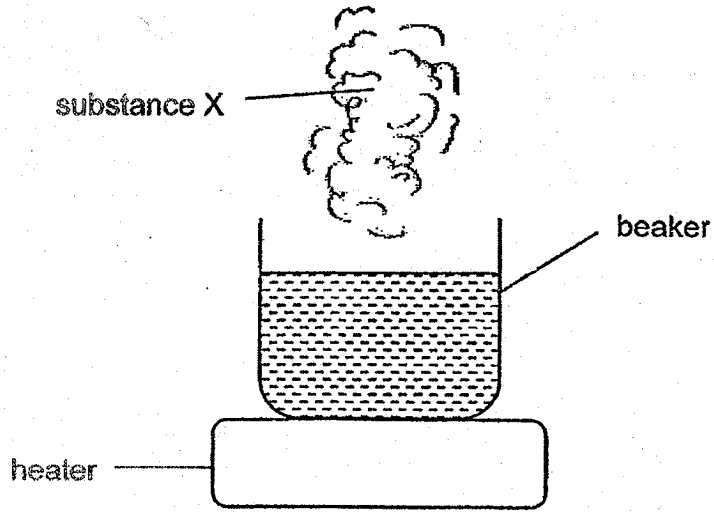
	P	Q	R	S
(1)	clay	water	rice	air
(2)	rice	air	clay	water
(3)	clay	air	water	rice
(4)	water	rice	clay	air

26. The table below shows the melting and boiling points of four substances, A, B, C and D.

Substance	Melting point (°C)	Boiling point (°C)
A	15	75
B	55	160
C	185	283
D	85	230

Owen heated up one of the substances above in a beaker and observed a substance, X, above the beaker.

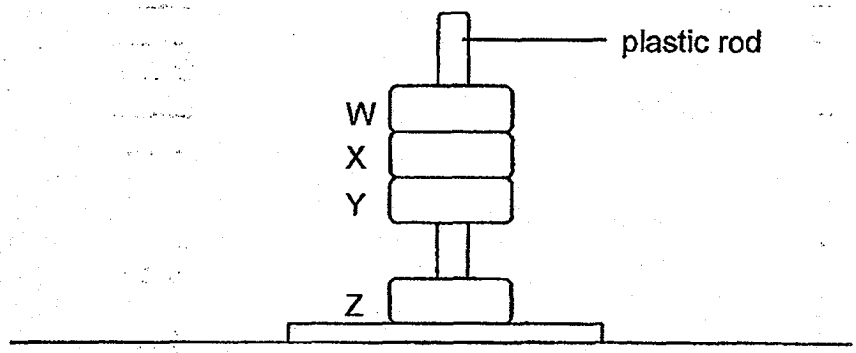
He tested the temperature of substance X and noted that the temperature was 170°C. He also noted that substance X cannot be compressed and does not have a fixed shape.



Which one of the substances did Owen heat up?

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

27. The set-up below consists of four rings, W, X, Y and Z, which pass through a plastic rod in the middle.

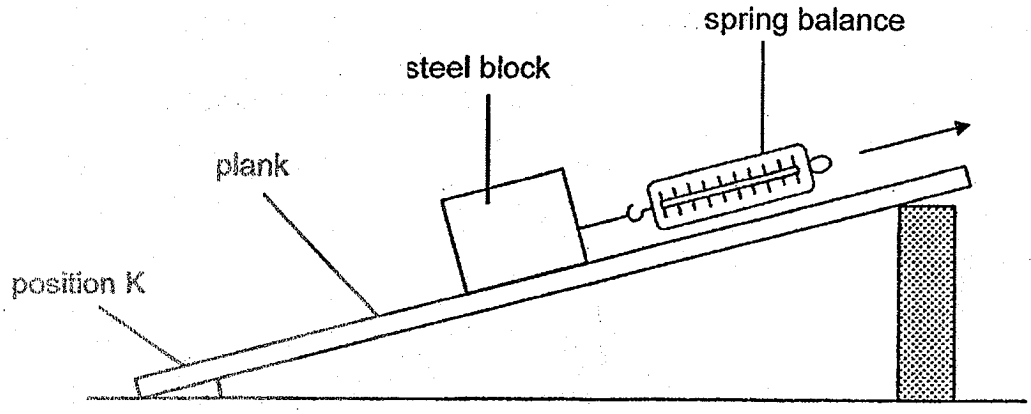


Which of the following arrangements is/are **not** possible?

Arrangement	W	X	Y	Z
A	rubber	rubber	magnet	iron
B	magnet	magnet	iron	magnet
C	rubber	magnet	magnet	magnet
D	magnet	rubber	magnet	magnet

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

28. Camille set up an experiment as shown below.



She pulled the steel block up a plank using a spring balance and the spring balance displayed a reading of 10 units. Camille wanted to increase the reading displayed on the spring balance.

Which of the following will help her to increase the reading on the spring balance?

A Put a magnet at position K
B Apply a lubricant on the surface of the plank
C Change the steel block to a plastic block of the same size

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

End of Booklet A

Index No. | | | | | | |

NAN HUA PRIMARY SCHOOL
PRELIMINARY ASSESSMENT – 2018
PRIMARY 6

SCIENCE

BOOKLET B

13 Structured / Open-ended questions (44 marks)

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

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the space provided.
2. Do not turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write your answers in this booklet.

Marks Obtained

Section B		**/ 44**

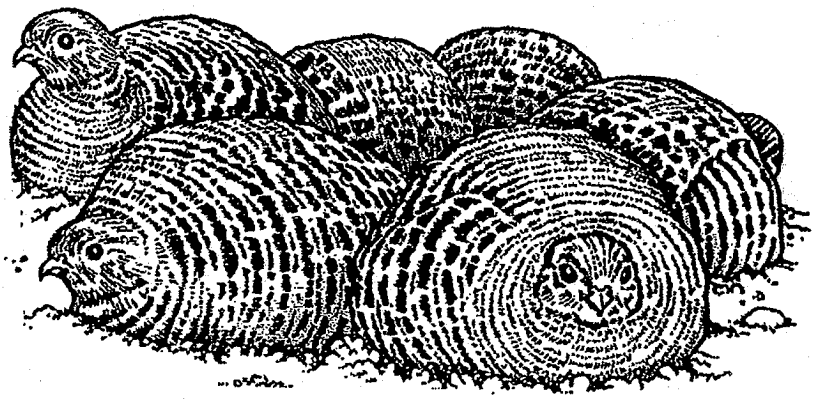
Name: _____ ( ) **Class: P 6** _____

Date : 28 August 2018 **Parent's Signature:** _____

Section B: (44 marks)
Write your answers to questions 29 to 41.
The number of marks available is shown in brackets [ ] at the end of each question or part question.

29. Partridges are non-migratory birds. They live in large groups. In the month of summer, partridges feed on insects and green leaves. In winter, they feed on grains, sunflower and wheat. Their main predators are foxes and dogs.

The diagram below shows how the partridges sit close together and all of them are facing outwards.



(a) Give two reasons why sitting close together like this helps the partridges to survive better. [2]

Reason 1:

_____

_____

Reason 2:

_____

_____

(b) Partridges lay their eggs in nests on the ground. Explain why laying eggs on the ground could result in fewer partridge chicks. [1]

_____

_____

Score	

30. The table below shows the concentration of carbon dioxide in Earth's atmosphere for a period of 250 years. The study was conducted by a group of scientists in Gotham City.

Atmospheric Concentration of Carbon Dioxide	
Year	**Carbon Dioxide Concentration (parts per million)**
1750	282
1800	283
1850	290
1900	297
1950	312
2000	378

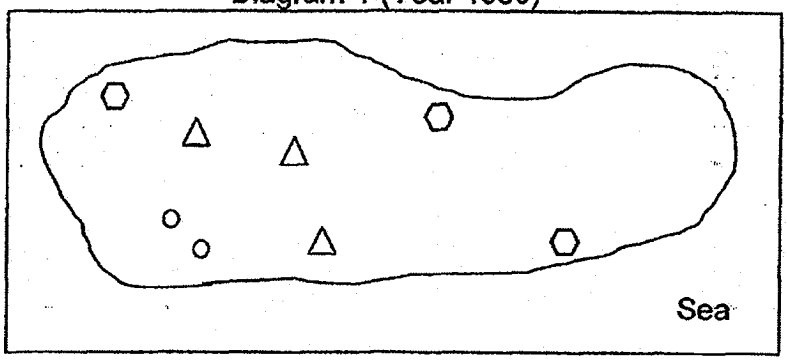
(a) Explain why the scientists in Gotham City are concerned about the increase in the concentration of carbon dioxide in Earth's atmosphere. [1]

(b) The Gotham City Power Station burns coal to generate electricity for the city. As the coal burns, sulfur that is present in the coal reacts with oxygen to form sulfur dioxide, which is given off as a gas.
How does this process result in acid rain? [1]

Score	
	2

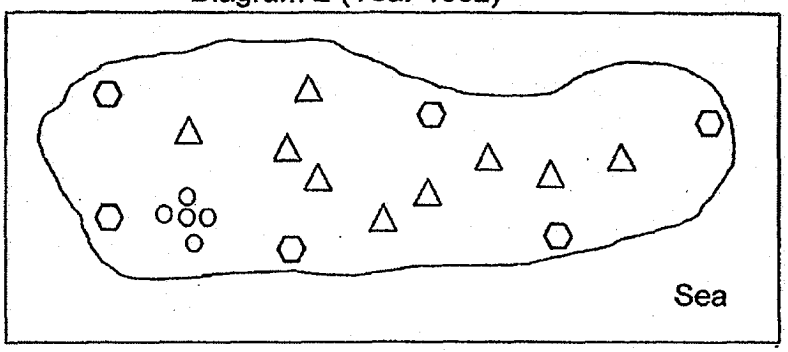
31. In year 1980, Shane discovered an uninhabited island. He found three types of plants on the island and noted their locations as shown in Diagram 1.

Diagram 1 (Year 1980)



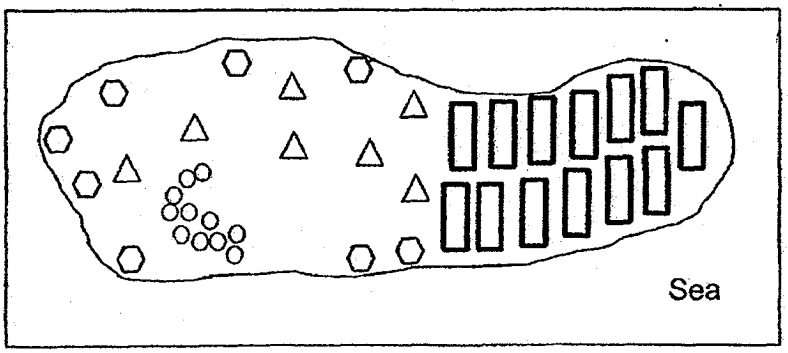
He returned to the same island in 1982 and noted the locations of the three types of plants. He recorded his observations in Diagram 2.

Diagram 2 (Year 1982)



When he returned to the same island again in 1984, he discovered that tall buildings were built on the island. Again, he noted the locations of the three types of plants and recorded his observations in Diagram 3.

Diagram 3 (Year 1984)



Key	
o	Plant X
△	Plant Y
⬡	Plant Z
▯	Tall building

(a) Identify the method of dispersal for each type of plant. [1]

Plant	Method of dispersal
X	
Y	
Z	

(b) State one possible feature of the fruit/seed of Plant Y that allow it to be dispersed in the method stated in part (a). [1]

_____

_____

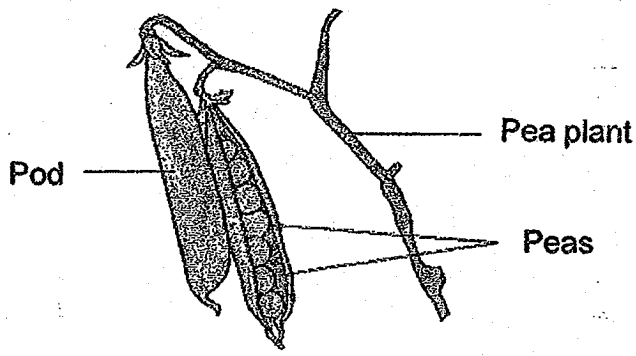
(c) Shane observed that Plant Y had not been reproducing as well as Plant X after the buildings were constructed on the island. Explain how the tall buildings could have affected the population of Plant Y on the island. [1]

_____

_____

Score	3

32. Peas grow in pods on pea plants.



Farmer Tan grew 4 varieties of pea plants, A, B, C and D, in his garden. He counted the number of peas in each pod growing on each plant.
The table below shows his results.

Variety	Average number of peas in each pod
A	4
B	5
C	6
D	7

(a) State one environmental factor and one other factor that might affect the number of peas in a pod. [2]

Environmental factor:

_____

Other factor:

_____

Score	/ 2

(b) Farmer Tan also grows rose plants in his garden. When he has guests over for dinner, he will decorate his dining hall with the cut roses from his garden. He heard from a friend that chemical X, a special substance, when added to water will help to keep flowers fresh for a longer time. He wanted to find out if it is true.

He used two similar vases for his experiment.

The table below shows how he set up his experimental set-up in Vase A.

Vase	Number of cut roses	Amount of tap water	Amount of chemical X	Location the vase was placed
A	10	500 ml	10 ml	At the window
B				

(bi) Complete the table to show how Farmer Tan should set up Vase B. [1]

(bii) Explain clearly why Farmer Tan has to set up a control for his experiment. [1]

_____

_____

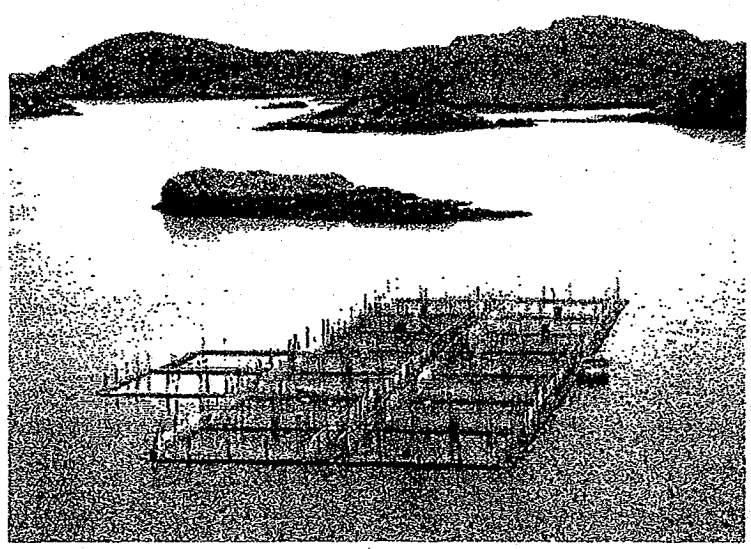
Score	/ 2

33. The table below shows the energy available to humans from two different food chains.

Food Chain	Energy transferred to last consumer per m^2 of wheat (unit)
wheat → human	1000
wheat → chicken → human	100

(a) Explain why there is a difference in the amount of energy transferred to humans in the two food chains. [2]

(b) The figure below shows a fish farm.



In a fish farm, large numbers of fish are grown in cages in the sea.

Why do fish in the cages grow faster than fish of the same species that are free in the sea? Explain in terms of energy. [1]

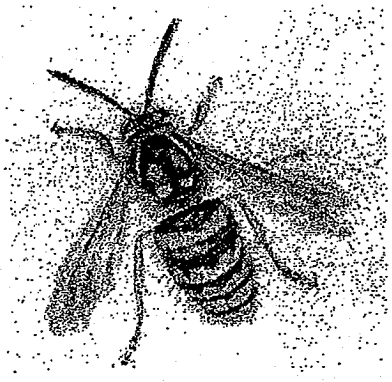
Score	
	3

34a. Some birds eat snails. A species of snail that lives in the forest has a dark shell. The same species of snail that lives in a field has a light-coloured shell. Explain how the difference in shell colours helps the snail to survive better.

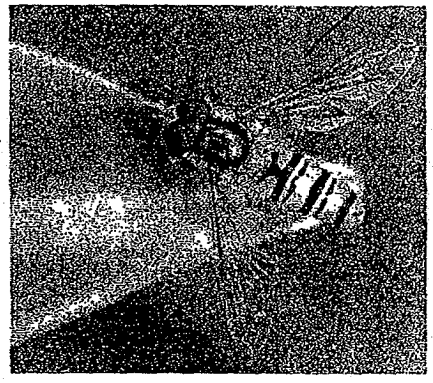
[2]

34b. The photographs below show a wasp and a hoverfly.
The wasp and the hoverfly look alike as both have black and yellow stripes.

Wasp



Hoverfly

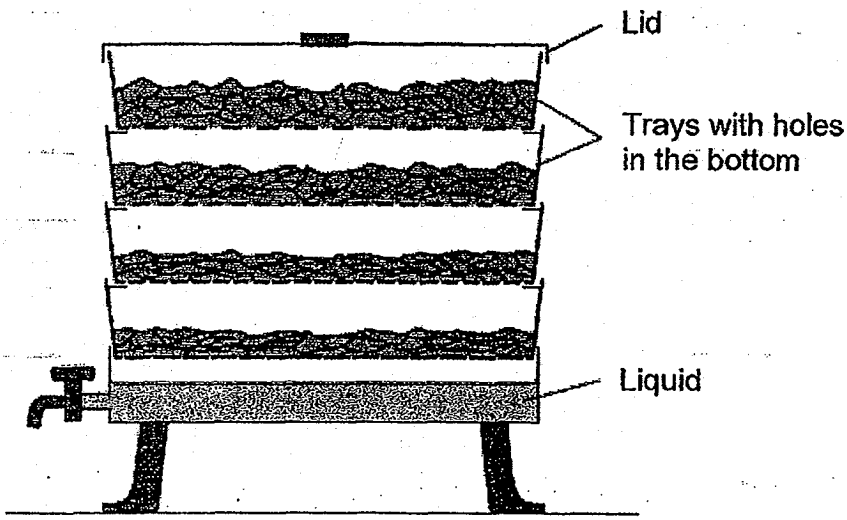


Wasps have stings, but hoverflies do not. The stripes on the hoverfly which look like the stripes on the wasp help the hoverfly to survive. Explain why.

[2]

Score	/ 4

35. The diagram below shows a garden composter.



- The composter has four trays, with holes at the bottom of each tray.
- Materials to be decomposed is put into the top tray.
- As the material breaks down, it drops through the holes.
- The holes get smaller from the top tray to the bottom tray.

(a) Suggest one type of material that could be put into the composter. [1]

_____

(b) The plants given the liquid from the composter will grow healthier than the plants given tap water. Explain why. [1]

_____

_____

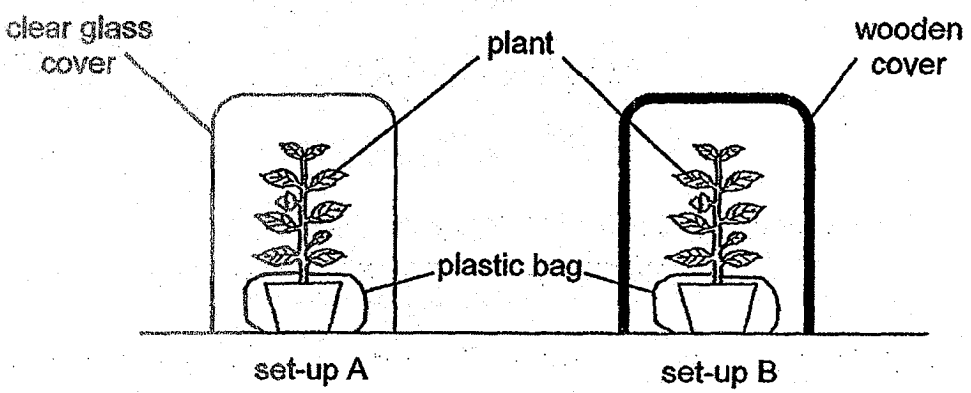
(c) Other than part (b), name one other environmental benefit of composting. Explain your answer. [1]

_____

_____

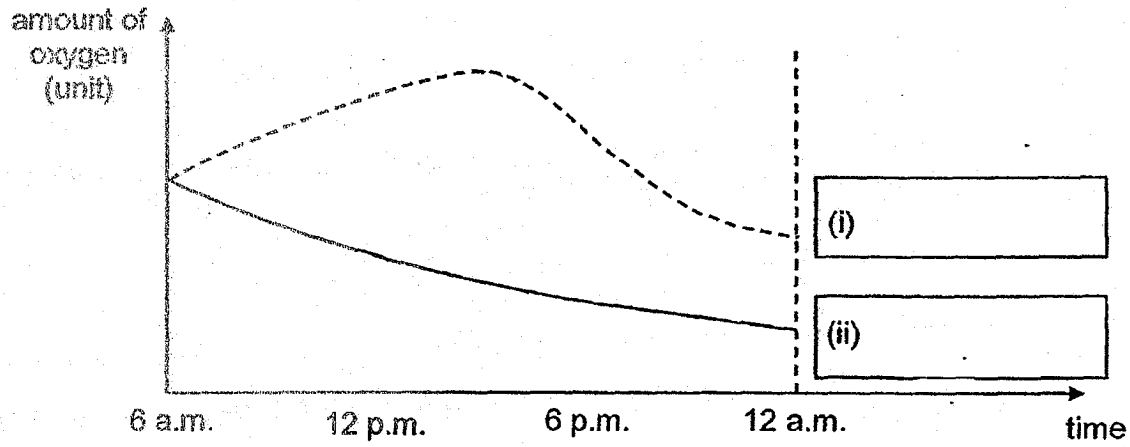
Score	/3

36. Olivia prepared two set-ups, A and B, as shown in the diagram below. She placed two identical plants under the covers. She gave both plants the same amount of water at the start of the experiment. Both set-ups were placed in the field from 7 a.m. to 12 midnight.



The graph below shows the changes in the amount of oxygen in set-ups A and B throughout the experiment.

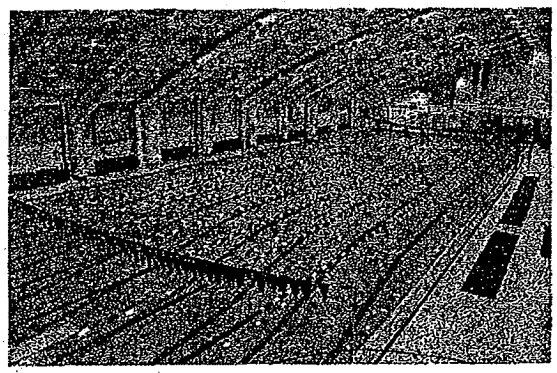
(a) Label the line graphs with the correct set-up, A or B, in the boxes provided.[1]



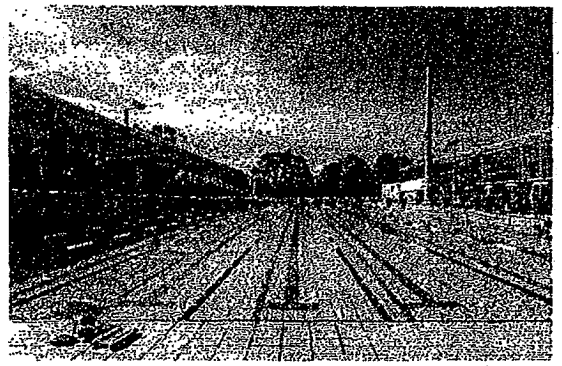
(b) Explain your answer for (a) (ii) clearly. [2]

Score	
	3

37. The diagrams below show two types of swimming pools. They are of the same size.



indoor pool
(with shelter and no fans)



outdoor pool
(without shelter)

(a) The temperature of the water in the outdoor pool tends to be higher than that of the indoor pool on a sunny day. Explain why. [2]

_____

_____

_____

(b) The water level in the swimming pool needs to be maintained for swimmers to use. The rate at which water needs to be pumped into the outdoor pool is usually higher than the indoor pool. Give two reasons to explain why. [2]

Reason 1:

_____

_____

Reason 2:

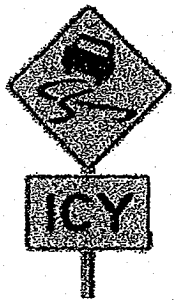
_____

_____

Score	
	4

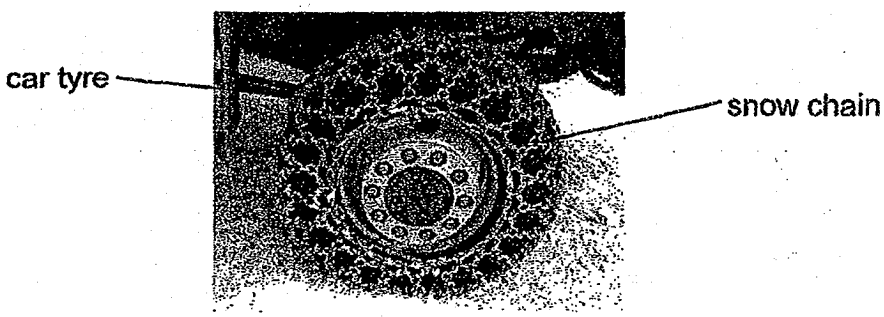
38. In some countries, a layer of ice may form on roads when it snows.

Drivers travelling in such weather conditions are often advised to slow down their car's speed especially in areas where the following road sign is displayed.



(a) Explain, in terms of forces, why it is necessary for cars to travel at a slower speed during such weather conditions. [2]

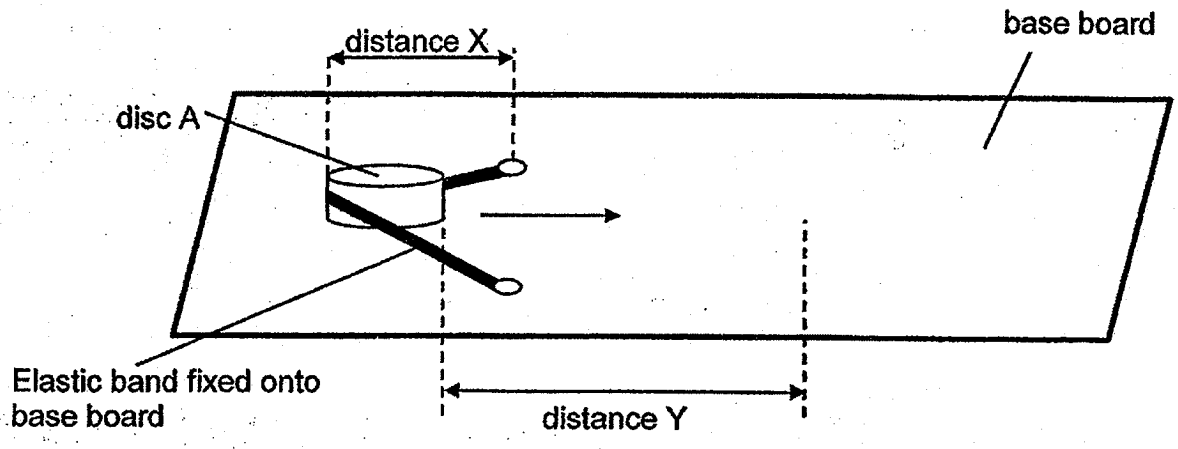
When it snows, drivers may be advised to put on snow chains on their wheels as shown in the diagram below. Snow chains are metal chains that are fitted around a car's tyres.



(b) Explain, in term of forces, how snow chains will help the car to travel more safely in snowy areas. [2]

Score	
	4

39. Kayley conducted an experiment with the set-up shown below.



She pulled disc A and the elastic band back for different distances (X) and released it to find out how far disc A will travel (Y). She then recorded her results in the table shown below.

Distance X (cm)	Distance Y (cm)
2	3.5
4	6
6	9.5
8	12

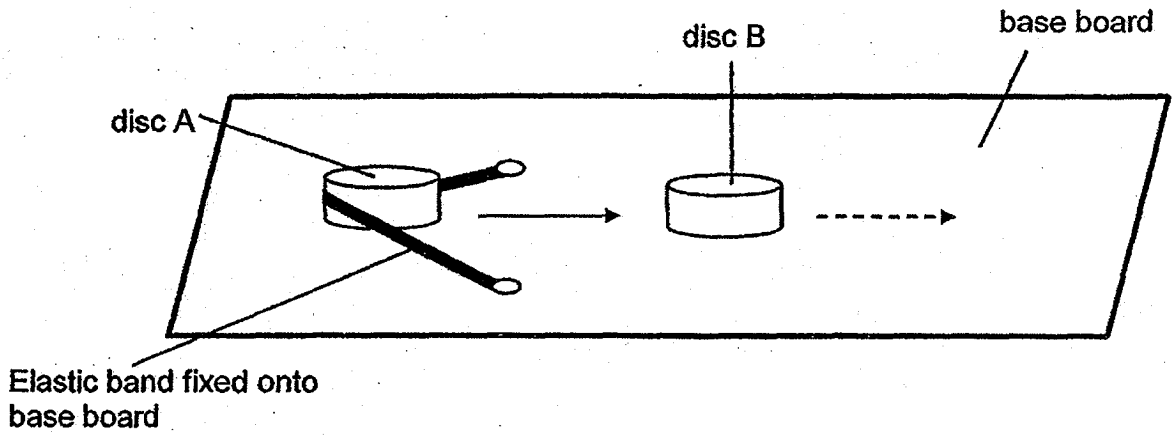
(a) Explain, in terms of energy, how distance Y is affected by distance X. [2]

_____

_____

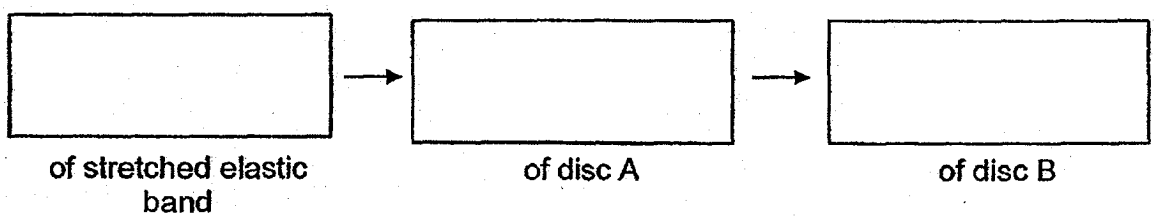
_____

Kayley then added disc B to the set-up as shown below.



She used disc A to hit disc B.

(b) Fill in the boxes to show the main energy changes during the experiment. [1]



(c) Kayley noticed that disc B travelled at a slower speed as compared to disc A. Explain, in terms of energy, why. [2]

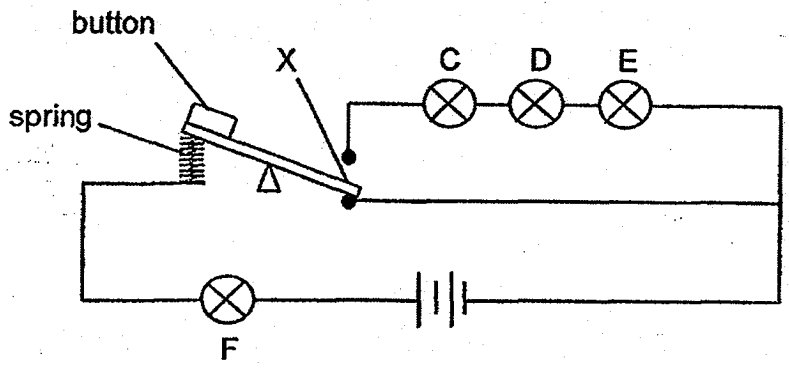
_____

_____

_____

Score	
	5

40. Mindy set up the following circuit as shown below. All the bulbs and batteries used are identical.



When Mindy pressed the button, the spring will be compressed and point X will move up.

(a) Put a tick (✓) in the correct box(es) to indicate that the light bulb has lit up. [1]

	Light bulb			
	C	D	E	F
Before button is pressed				
After button is pressed				

(b) Without changing the number of batteries and bulbs, what can Mindy do to the circuit to ensure that bulb F will be lit up as brightly as before the button is pressed? [1]

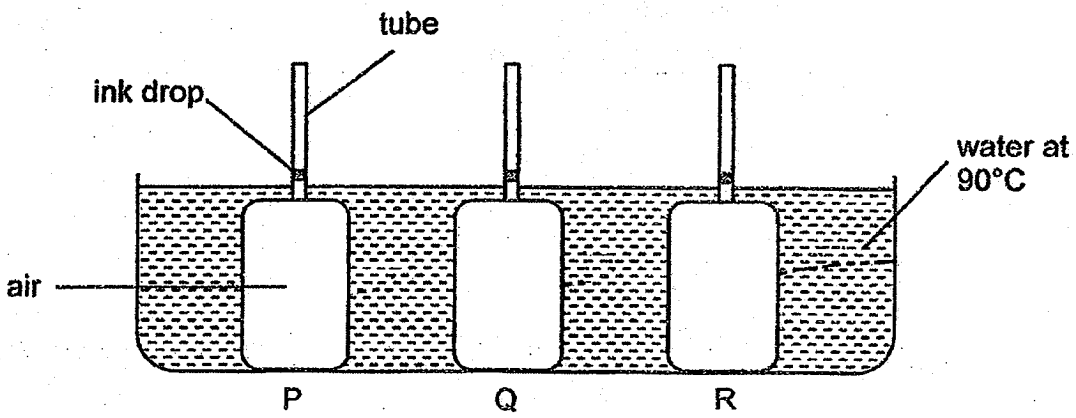
_____

_____

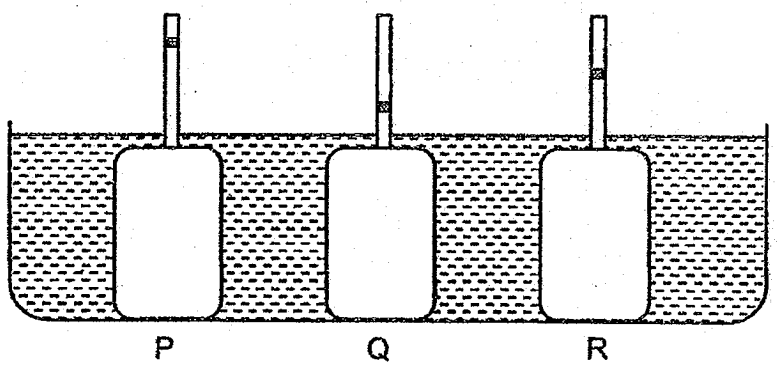
_____

Score	
	2

41. Elliot set up the experiment as shown below. Containers P, Q and R were of the same size and shape but they were made of three different materials. He filled each container with air at room temperature before inserting a tube with a drop of ink in it. Then, he placed all the three containers into a basin of water which has a temperature of 90°C.



15 minutes later, he noted the changes in the position of the ink drops as shown below.



(a) Explain clearly what caused the ink drop to rise in all containers. [2]

(b) Based on his observations, which is the best material for making a container to keep food warm for as long as possible? [2]

_____

_____

_____

- END OF PAPER -

Score	/4

SCHOOL : NAN HUA PRIMARY SCHOOL
LEVEL : PRIMARY 6
SUBJECT : SCIENCE
TERM : 2018 PRELIM

SECTION A

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

2018 Prelim Science

Name : _____ Class:P6____

Qn	Answer	Points to Note
29a.	Reason 1: *Sitting close together* help them to better **trap heat** given out by the birds. The heat will keep them **warmer**. OR ....transfer heat to one another...warmer	Evi – "sit close together" Comparative - "survive better" Use – better, warmer One of the reasons to adapt Light, Other organism, Water, Food, Air, Temperature, Soil Struct – Adaptation (behavioural) , how it helps (concept), helps to get which LOW FATS
	Reason 2 : *All of them sit facing outwards* to **better see in all directions** to **look out for predators bet**ter.	Evi – "facing outwards" Comparative, to struct same as reason 1
29b.	*Predators foxes and dogs* on the ground can **spot and eat the eggs easier**.	Comparative - "fewer chicks" Use - easier
30a.	Increase in carbon dioxide in atmosphere will trap more heat and the temperature rises. Then global warming occur.	Comparative - "increase in CO^{2}" Use – more heat More CO^2, more heat, temperature rise, GW , -More CO^2, more heat, increase temp, bigger hole in ozone (X) Hole in ozone layer cause by sprays
30b.	Sulphur dioxide will **dissolve** in rainwater.	- Sulphur dioxide is a gas. Just like CO^2 So it will not condense in the cloud and come down as rain (X)
31a.	X – splitting Y – Wind Z - water	Evi – X - Cluster around and near each other Y – in a particular direction Z – along the shore
31b.	Wing-like structure / hair-like structure / light / parachute like structure	- Small (X – can be small and heavy)
31c.	The tall buildings **block the wind** from **carrying the seeds**. So **fewer seeds were dispersed**.	Evi – "after buildings were constructed"

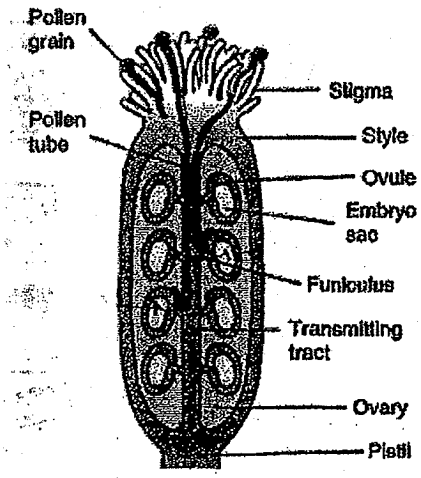
		Block sunlight (X – sun in the sky are at different position at different time)
32a.	Environmental factor / Non-living factors : LOW FATS Light / Oxygen / Water / Food / ~~Acidity~~ / Temperature / Soil Other factor : Genes / number of ovules in ovary / type of pea plant / number of pollen grain that land on stigma	- Living factor vs non-living factor Pls differentiate Living factors : Presence of other living things – bacteria / animal as predator / animals as prey / plants
32bi.	10, 500ml, 0 ml, At the window	
32bii.	Act as a control to compare with the results of experimental set-up to confirm that chemical X affects the length of time the flowers can stay fresh.	- Fair test : Repeat the experiment a few times - Why keep the CV same : Eg Why keep the amount of water the same? To ensure that only the IV (specify what it is given in qn) affects the DV (specify what it is given in qn). That amount of water used will not affect the DV. -Why use a pin to...? To get accurate results / the length of the spring.
33a.	Food chain that includes the chicken has less energy passed from plants to human, because the chicken used some of the energy passed down from plants for life processes. So less energy is passed to human. While food chain without the chicken, human gets the energy directly from the plant, so human gets more energy for life processes.	Concept: -Energy is used by the organism for life processes so very little amt of energy (abt 10%) is passed to the next organism/ consumer. [Food chain cannot be long] - Bigger organism/herbivore needs to eat more of its prey / plants. Bec very little energy is passed down from the previous organism so need to eat more to get more energy to carry out life processes. -Chicken used up some of the energy (X) Energy cannot be used up. -Living things + Energy + carry out life processes

33b.	Food is energy. Fish in cages are fed with more food/ food with more nutrients; so more energy for fish to grow faster.	-Food is needed for growth. Same concept of the qn on big strawberry. More food stored, bigger fruit.
34a.	The snails in the forest have **dark shell** to help it to camouflaged with the **dark colour forest.** The snail in the field is **light colour** and can camouflaged with the **light colour of the field.** So it is harder for predators to spot and catch them.	- state adaptation(evi) that helps or do not help....(expln - how it helps...help in which factor LOW FATS , PO)
34b.	The stripes on the hoverfly will mislead the predator into thinking that it is a wasp which can sting the predator. Predator will not try to attack the hoverfly.	- state adaptation (evi), expln – misled ...can sting, help in which factor – not attack
35a.	Dead leaves / banana peel	- Biodegradable materials That means can decompose because the material comes from organism that were once alive.
35b.	The liquid will provide nutrients to the plants to absorb, which help the plant to grow healthier.	-Dead matter decompose. into simpler substances and is return to soil as nutrients for the plants to take in to grow healthier.
35c.	The method reduces waste because organic waste is recycle. / The method reduces landfill space because organic waste is recycle.	-many missing explanation - how it helps
36a.	(i) A (ii) B	Has light, has photosynthesis , so Oxygen is given out during – set-up A No light, no photosynthesis, so plant take in oxygen for respiration – set-up B
36b.	Set-up B is covered in wooden cover . Plant will not be able to absorb light, so no photosynthesis take place and so no oxygen is produced. At the same time, the plant is taking in oxygen to carry out respiration. So oxygen decreases.	- Respiration is carrying out all the time, even when there is photosynthesis. -Pls answer directly. Some answer for set-up A. If doing that, also need to explain for set-up B.
37a.	The water in the outdoor pool is **more** exposed to the Sun. The water gained **more** heat from the Sun.	-"....higher than that of ...." need compv Answer for outdoor pool -"exposed to the sun directly" (not compV yet). Outdoor pool exposed to the sun

		directly while indoor not exposed to the sun directly. (√) - 2 objects - 3 phrases - if comparative / superlative
37b.	Reason 1 : The **temperature of the air** in the surrounding is higher compared to indoor pool. Then the rate of evaporation is higher, water loss is higher. Reason 2 : The **water** in outdoor pool is more exposed to **wind** compared to indoor pool. Then the rate of evaporation is higher, water loss is higher.	-"....usually higher than the ...". Use compV -Factors that affect rate of evaporation: Wind Temperature Humidity
38a.	Water that melted from the layer of ice will act as lubricant. The water will reduce the friction **between** the tyres and the ground, so car slow down to prevent skidding.	-"expl in forces" Frictional force Gravitational force Elastic spring force Magnetic force of attraction Magnetic force of repulsion -Speed slow : Frictional force Magnetic force of attraction
38b.	The chain will make the tyres rougher. There will be more friction **between** the tyres and the ground. This reduces the chances of car skidding.	-"travel more safely" – compV
39a.	As X increases, the band is stretched more, so more elastic potential energy stored **in the stretched band**. More elastic potential energy **in the stretched band** will be converted to more kinetic energy in the **moving disc**, so more distance can be moved.	-elastic band : Elastic spring force **acting on** Elastic potential energy **stored in** - converted to vs transfer to
39b.	Elastic spring energy – kinetic energy – kinetic energy	
39c.	When A hits B, some of the kinetic energy is **converted** to heat and sound. So less kinetic energy of A is **transfer** to B, so B moves slower.	-Use labelling -focus is B now, expl B slower speed compared to A. -Slower speed : Less kinetic energy More frictional force

		Difference – previous is 1 disc, now 2 disc
40a.	Before : √ F After : √ C, D, E and F	
40b.	Arrange each of the bulb C, D and E in parallel arrangement.	- requirement : 1 battery for 1 bulb -parallel circuit (X) Parallel arrangement of
41a.	The **air** in the containers will gain heat from the hot water. The air gain heat and expand. The expanded air take up more space and pushing the ink drop up.	-Matter gain heat and expand vs Good or poor conductor of heat Rate of expansion
41b.	Q. The ink drop rose the least. Q is a poorest conductor of heat. The **food** in container Q will lose heat slowest to the surrounding air outside container.	-Property of material Revise notes.

Picture of many seeds developing



2 seeds will be formed