

Index No.



**NAN HUA PRIMARY SCHOOL  
PRELIMINARY EXAMINATION – 2014  
PRIMARY 6**

**SCIENCE**

**BOOKLET A**

**30 Multiple Choice Questions (60 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.

<b>Booklet A</b>		/ 60
<b>Booklet B</b>		/ 40
<b>Total</b>		/100

**Name:** \_\_\_\_\_ (      )      **Class:** P 6 \_\_\_\_\_

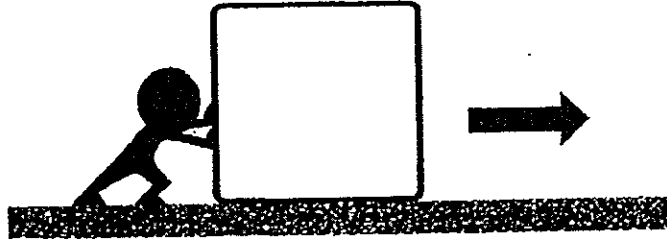
**Date:** 26 August 2014

**Parent's Signature:** \_\_\_\_\_

**Section A: (30 x 2 marks = 60 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 the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. Bob is having difficulty pushing a heavy box across a rough patch of ground in the direction represented by the arrow.

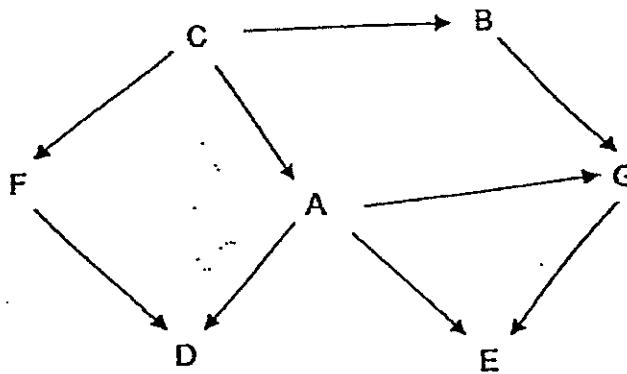


Which of the following way(s) will help Bob push the box across the ground with a smaller effort?

- A Add rollers to the bottom of the box.
- B Lay a big piece of plastic on the floor.
- C Apply some oil on the soles of Bob's shoes.
- D Ask a friend to push the box harder in the opposite direction.

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

2. Study the food web below carefully. It shows the feeding relationships among organisms A, B, C, D, E, F and G.



How many organism(s) is/are both a prey and predator in the food web above?

- (1) 1
- (2) 2
- (3) 6
- (4) 4

3. The following are <sup>adaptations</sup> adaptations of some organisms to help them survive in extreme environmental conditions.

Organism	Adaptation
P	Has fishing rod-like structure that emits light attached to its head that is used for luring preys.
Q	Has webbed feet to aid it in swimming and strong hind legs to help it to jump far to escape from danger.
R	Stay in extremely cold, deep water during the day and come to the surface at night to avoid predators.
S	Fly south during the winter to avoid the cold and harsh weather.
T	Has a root system covering a large surface area and that is close to the surface of the desert.
U	Breed during the Antarctic winter so the chicks would be large enough to become independent during the summer to look for food.

Which of the above adaptations are structural adaptations and which of them are behavioural adaptations?

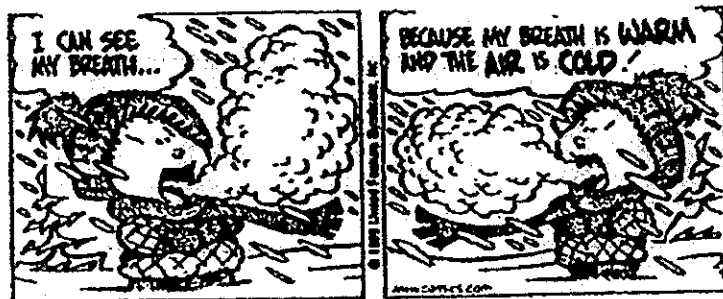
	Structural adaptations	Behavioural adaptations
(1)	P, T and U	Q, R and S
(2)	Q, S and T	P, R and U
(3)	R, S and U	P, Q and T
(4)	P, Q and T	R, S and U

4. What are the possible effects of global warming?

- A Acid rain
- B Burning of fossil fuels
- C Melting of polar ice caps
- D Increased deforestation activities.
- E More severe droughts and floods

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

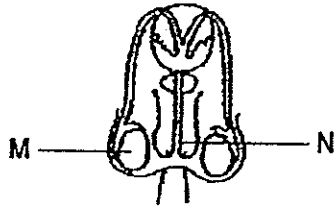
5. The diagram below shows part of a cartoon strip on a scientific phenomenon.



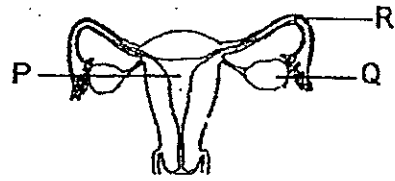
What process is occurring that makes the child's breath become visible?

- (1) Boiling
- (2) Melting
- (3) Evaporation
- (4) Condensation

6. Study the reproductive systems of humans below carefully.



Male reproductive system



Female reproductive system

In which parts of the reproductive systems are the reproductive cells produced?

- (1) M and Q only
- (2) M and P only
- (3) N and Q only
- (4) N and R only

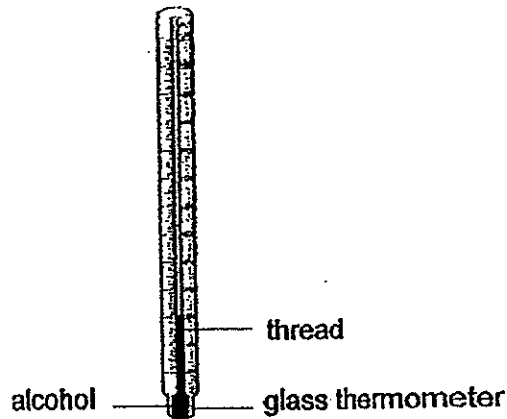
7. Ben collected cell samples from different parts of plants and animals and studied them under a microscope. He recorded his observations of the different cells in the table below. A tick (✓) indicates the presence of the cell part in the different samples.

	Cell A	Cell B	Cell C	Cell D
Nucleus		✓	✓	✓
Cell wall		✓	✓	
Cytoplasm	✓	✓	✓	✓
Chloroplast		✓		
Cell membrane	✓	✓	✓	✓

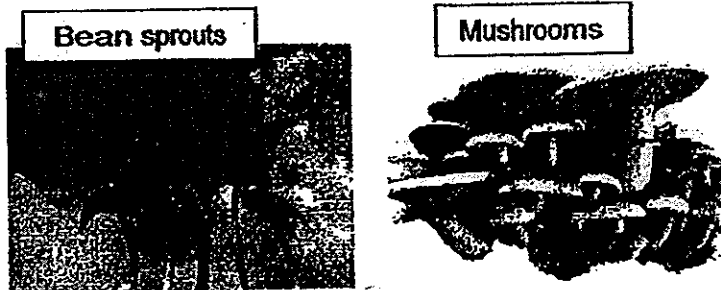
Based on the table above, Ben then grouped the cells. Which of the following cells are grouped correctly?

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

8. Coloured alcohol is used in some glass thermometers. When placed in surroundings of different temperatures, the thread of alcohol rises or falls in the glass thermometer.  
Which of the following best explains why the height of the thread of alcohol changes?



- (1) The glass contracts when heated.
  - (2) The glass contracts while the alcohol expands.
  - (3) The alcohol expands more than the glass when heated.
  - (4) The glass expands more than the alcohol when heated.
9. Anson and her classmates visited a farm that grows both bean sprouts and mushrooms. They made a comparison between the two organisms and listed their comparisons in the table below.

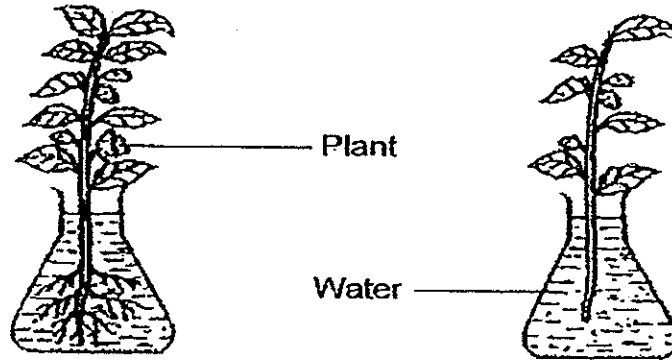


Who has made the correct comparison?

Pupil	Bean sprouts	Mushrooms
Anson	Reproduce from seeds	Reproduce from spores
Ben	Need oxygen to survive	Do not need oxygen to survive
Caine	Develop leaves	Do not develop leaves
Dan	Can make its own food	Cannot make its own food

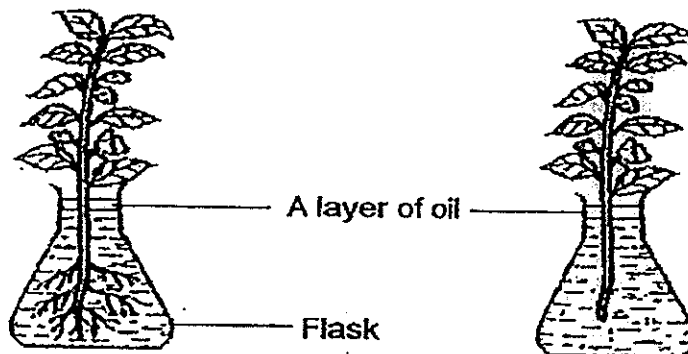
- (1) Ben and Caine only
- (2) Caine and Dan only
- (3) Anson, Ben and Dan only
- (4) Anson, Caine and Dan only

10. Clara wanted to find out if root hairs are essential for plants to take in water. Which two set-ups should she use to conduct her experiment?



Set-up A

Set-up B

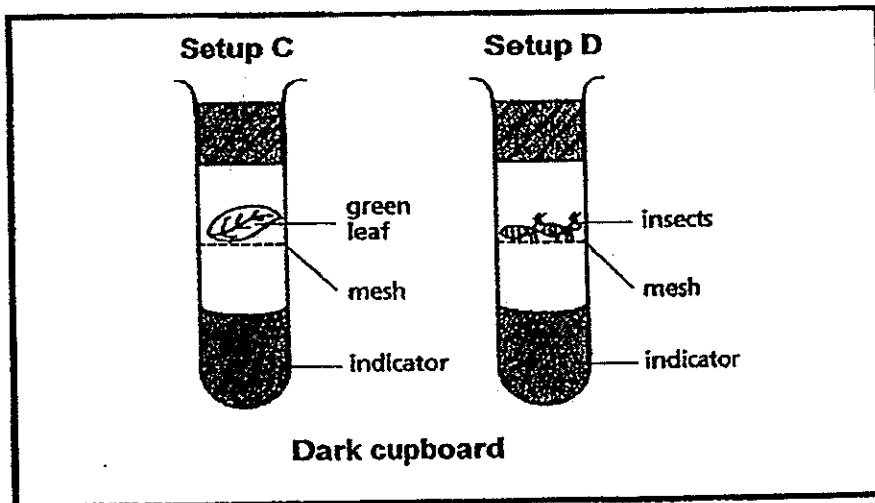
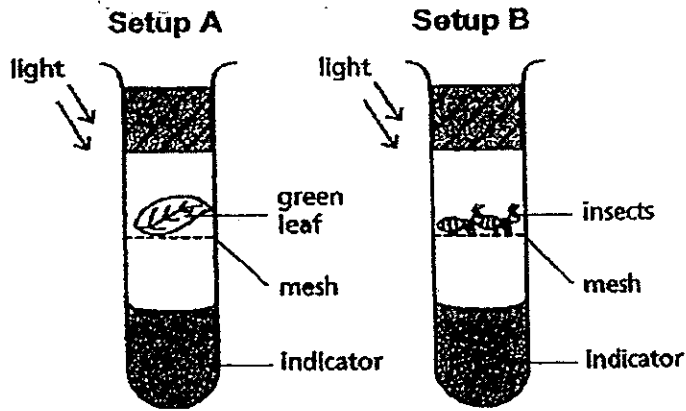


Set-up C

Set-up D

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

11. Four test tubes were set up in an experiment as shown below. At the start of the experiment, the indicator in each test tube was purple in colour. The indicator changes colour from purple to red as it interacts with more carbon dioxide. It changes from purple to yellow when it interacts with more oxygen.

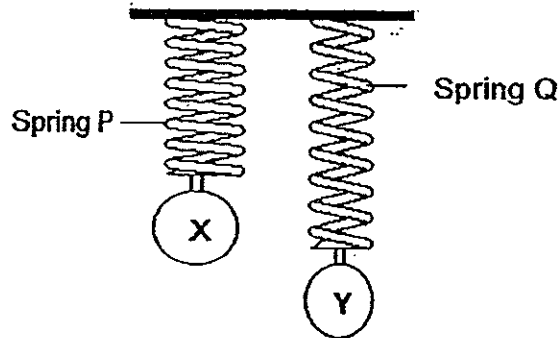


What will be the colour of the indicator in each test tube after two hours?

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



12. Two objects, X and Y, of the same material, shape and size are hung onto two different springs, P and Q, which have the same original length.



After some observations, Jamie wrote down four statements in her notebook.

- A Spring Q is overstretched.
- B Spring P is less stretchable than Q.
- C Object X has less mass than Object Y.
- D Spring Q has a longer extension than Spring P.

Which of the above statements made by Jamie are definitely correct?

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

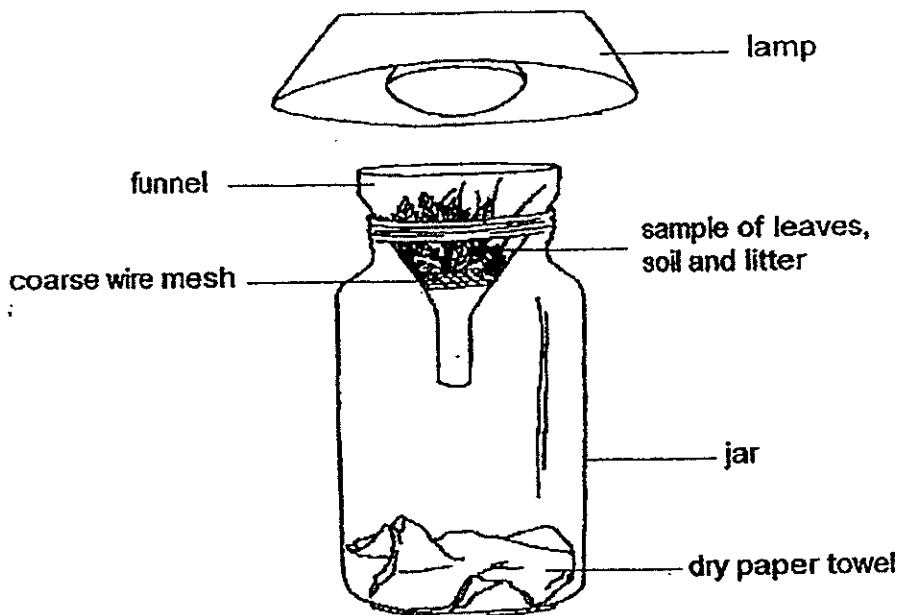
13. The following table compares two different objects.

	Similarities	Differences
X	Possesses potential energy	Potential energy can be converted to electrical energy
Y	Possesses potential energy	Potential energy can be converted to kinetic energy

What could Objects X and Y be?

	X	Y
(1)	Bar of chocolate	Stretched rubber band
(2)	Candle	Compressed spring
(3)	Spinning wheel	Moving bicycle
(4)	Battery	Coconut on a tree

14. Amy collected a sample of leaves, soil and litter from a leaf litter community near her school. She then set up the following experiment as shown below. She turned on the lamp for 12 hours.



Throughout the experiment, she saw some organisms climbing down the funnel towards the piece of dry paper towel. At the end of the experiment, most of the organisms that climbed down the funnel were underneath the paper towel. Why are the organisms there?

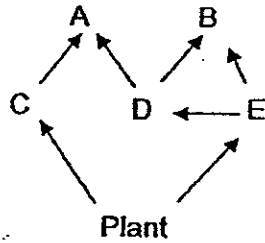
- (1) The organisms were searching for water.
- (2) The paper towel was a food source for the organisms.
- (3) The organisms were moving away from the light source.
- (4) There was not enough air in the funnel for the organisms.

15. Organisms A, B, C, D and E are interdependent on each other for food. The table below shows the food relationships among the 5 organisms.

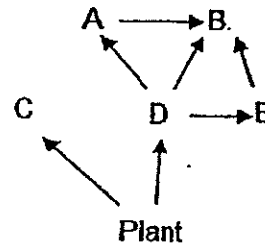
Organisms	Feed on
A	D
B	A, D and E
C	Plant
D	C
E	Plant

Based on the table above, which of the following food web correctly shows the food relationships among the 5 organisms?

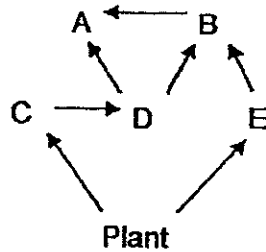
(1)



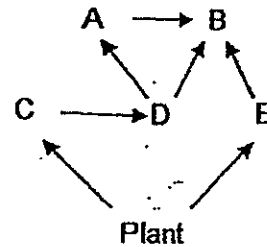
(2)



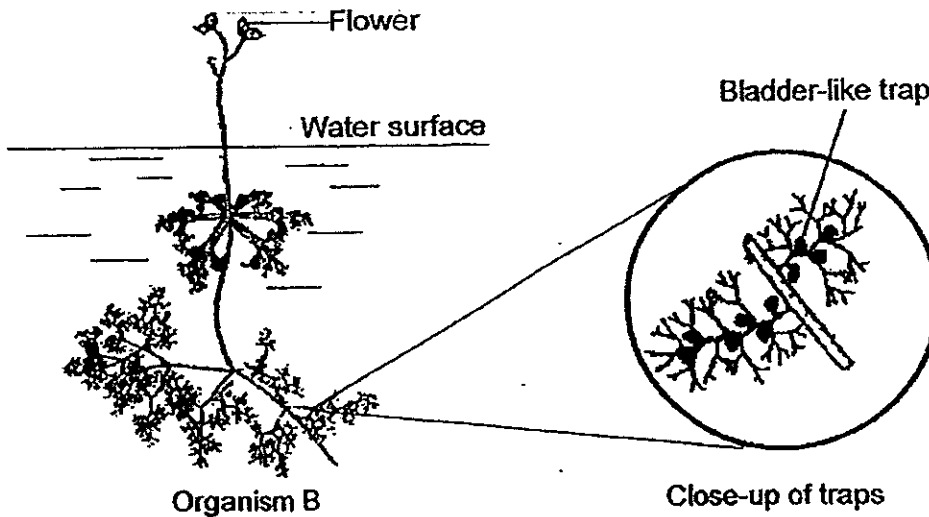
(3)



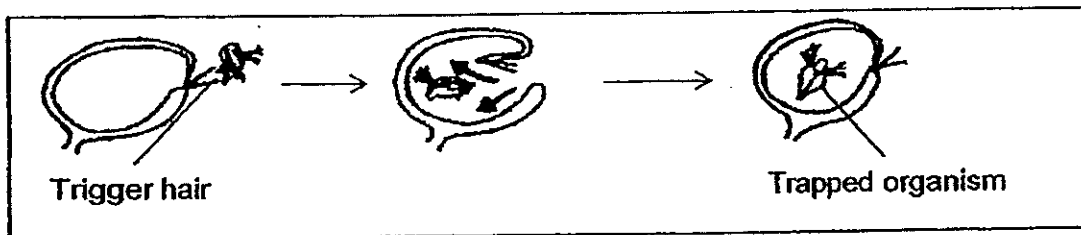
(4)



16. Organism B is a carnivorous plant and captures small organisms by means of vacuum-driven bladder-like traps. They grow mostly in swamps which has soil that is poor in nutrients. Most of the plant is found underneath the water surface. Only the flower will grow above the water surface as shown in the diagram below.



Once an organism touches the trigger hair at the entrance of the trap, the bladder-like trap will suck the organism into the trap as shown in the diagram below.



Bladder-like trap mechanism

Which of following adaptation(s) help(s) Organism B obtain the nutrients it needs to survive?

- A It has stems that contain air spaces to help it float in water.
- B It has flowers that stick out of the water surface to aid in pollination.
- C It has special traps to trap tiny organisms once they touch the trigger hair at the entrance.

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

17. Organism S is an organism that lives in the sea. It has a long circular snout to help it to catch its prey. It also has a long curly tail that allows it to grab hold of things around it. Its two eyes have the ability to move and focus in different directions at the same time. It can also change its colour to match the surroundings.



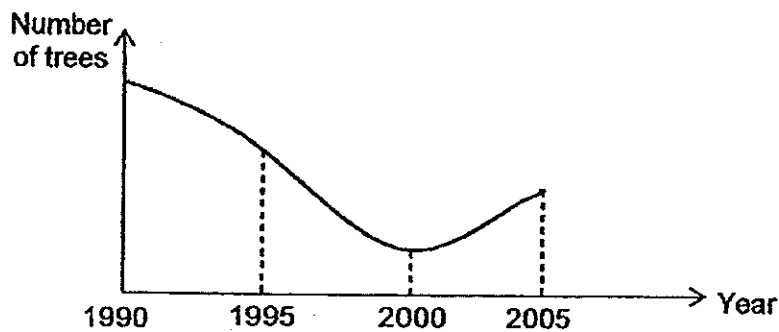
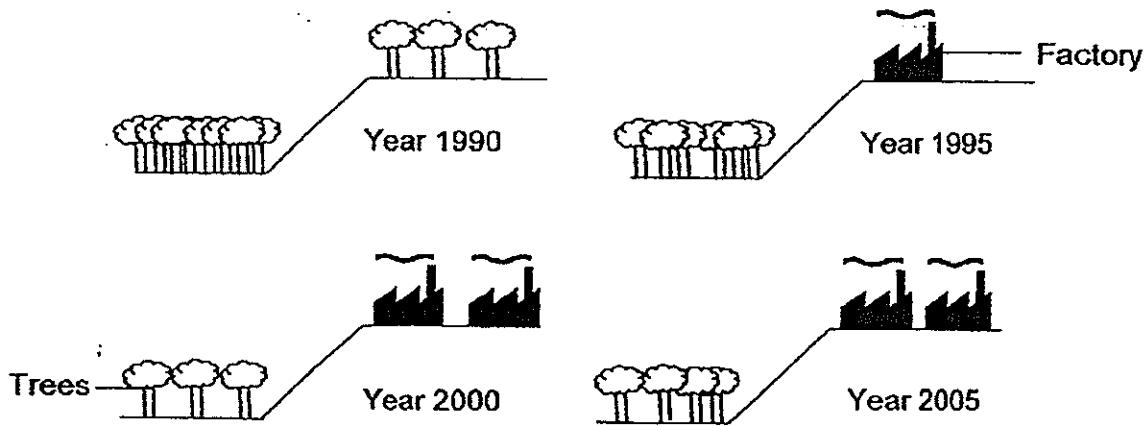
Organism S

Based on the information given above, which of the following statements describe(s) how the adaptations of Organism S enhance its survival?

- A It can camouflage with its surroundings by changing its colour.
- B Its two eyes allow it to better watch out for predators in its surroundings.
- C Its long snout allows it to capture its prey without its body getting too close to it.
- D Its tail allows it to grab hold of coral and sea grasses in its surroundings to prevent it from being washed away by sea currents.

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

18. The diagram below shows the development of an area as well as the number of trees in the forest nearby. The wastes discharged by the factories were washed down the slope during rain.

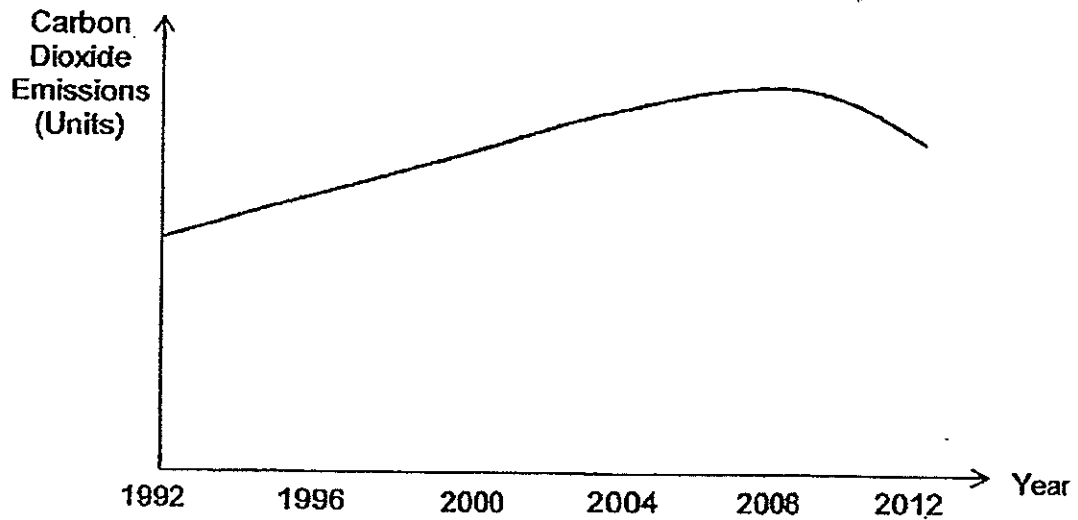


Based on the information above, which of the following statements are true?

- A As the number of factories built increases, the number of trees decreases until Year 2000.
- B Improper industrial waste disposal gets washed down the slope and affected the number of the trees.
- C The building of the factories on the top of the slope does not affect the number of trees between the years 1995 and 2005.
- D Between the years 2000 and 2005, the factories in the region have improved on their waste disposal technique which allows the trees to start to thrive again.

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

19. The diagram below shows the amount of carbon dioxide that is released into the atmosphere in Country X from years 1992 to 2012.



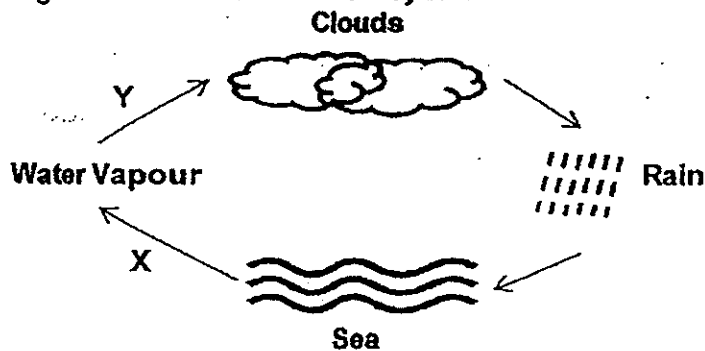
Carbon dioxide emissions in Country X

Based on the chart above, what could possibly cause the slight dip in the emission of carbon dioxide from Year 2008 onwards?

- A Greater reforestation efforts by the government.
- B More people making use of renewable sources of energy in their daily lives.
- C Invention of more fuel-efficient vehicles to reduce fuel consumption.
- D Invention of a better technology to reduce carbon dioxide emission when coal is burnt.

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

20. The diagram below shows a water cycle.

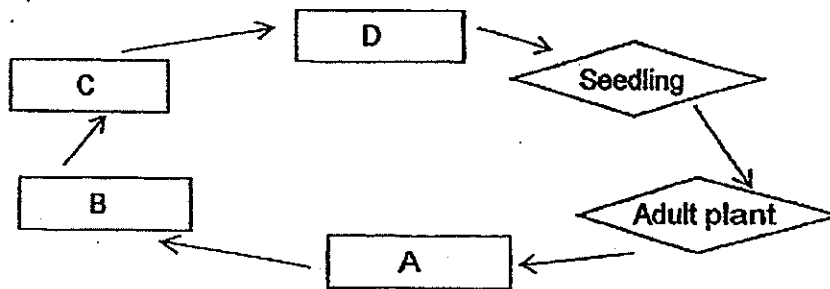


Processes X and Y are two processes taking place in the water cycle above. Which of the following goes through the same process as X or Y in the diagram above?

- A Leaving an ice cube on a table.
- B Drying wet hair using a hairdryer.
- C Adding sugar in a cup of hot coffee.
- D A boy shivering in cold after stepping out of a pool with water dripping down his body.
- E An old woman's spectacles turning misty when she alights from an air-conditioned bus.

	Process X	Process Y
(1)	A	B
(2)	A	C
(3)	B	E
(4)	C	D

21. A, B, C and D below represent different processes that a plant undergoes at different stages of its life cycle.

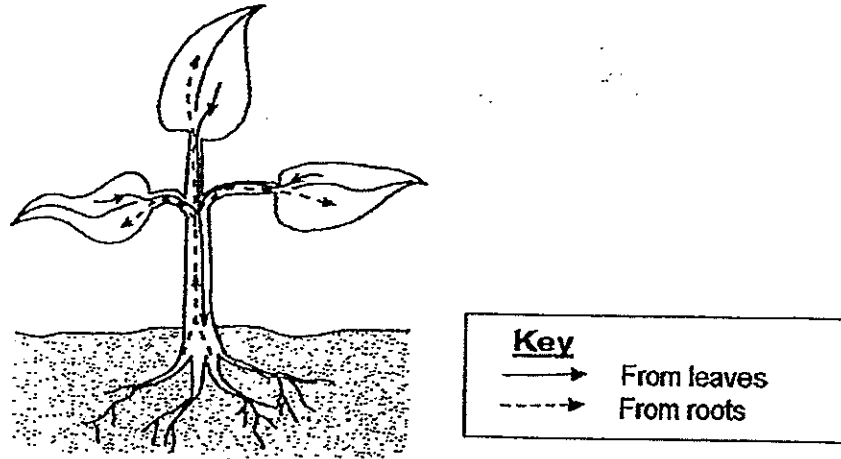


What do A, B, C and D represent?

	A	B	C	D
(1)	Seed Dispersal	Germination	Pollination	Fertilisation
(2)	Germination	Pollination	Fertilisation	Seed Dispersal
(3)	Pollination	Fertilisation	Seed Dispersal	Germination
(4)	Germination	Fertilisation	Pollination	Seed Dispersal

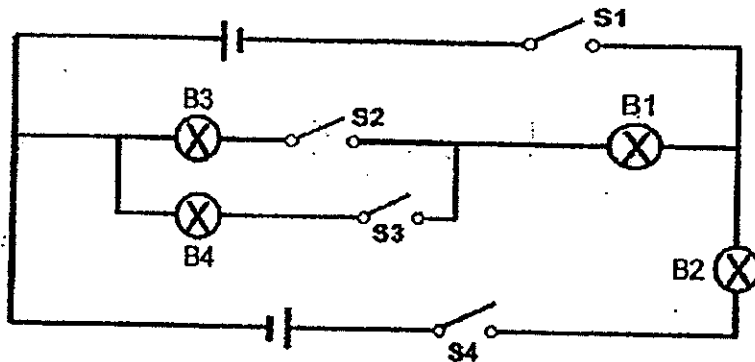


22. The diagram below shows materials which are needed for survival being transported inside a plant.



Which body system performs this function in humans?

- (1) Skeletal system
  - (2) Digestive system
  - (3) Circulatory system
  - (4) Respiratory system
23. The diagram below shows an electric circuit.



Which of the following correctly shows the bulbs that would be lit when the switches mentioned are closed?

	Switches closed	Bulbs that would light up
(1)	S1 and S4 only	B1 and B2 only
(2)	S2 and S3 only	B3 and B4 only
(3)	S1, S2 and S3 only	B1, B2 and B3 only
(4)	S2, S3 and S4 only	All the bulbs

24. A person in a dark room looking through a clear glass window can see a person outside in the daylight clearly. However, the person outside cannot see the person inside the room. What is the reason for this?

- (1) Light rays cannot pass through a window twice.
- (2) The light from outside cannot pass through the window.
- (3) There is not enough light being reflected off the person in the room.
- (4) The light from outside passes through the window which is then reflected off the person in the room.

25. The diagram below shows a cockroach and a dragonfly.

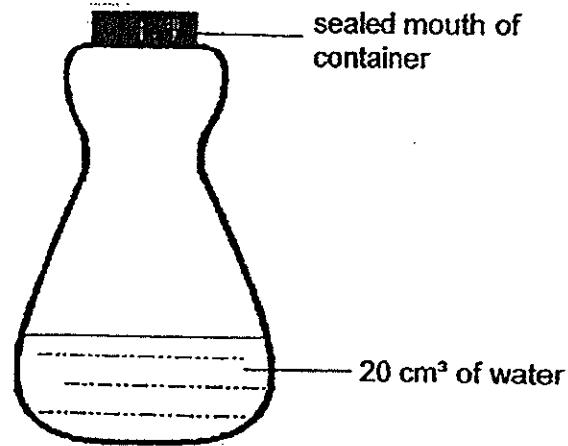


Which of the following statement(s) about their life cycles is/are correct?

- A Both their young do not resemble their parents.
- B Both their young hatch from fertilised eggs.
- C The dragonfly spends part of its life in the water but the cockroach does not.
- D There are four stages in the life cycle of the dragonfly while the cockroach has three stages in its life cycle.

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

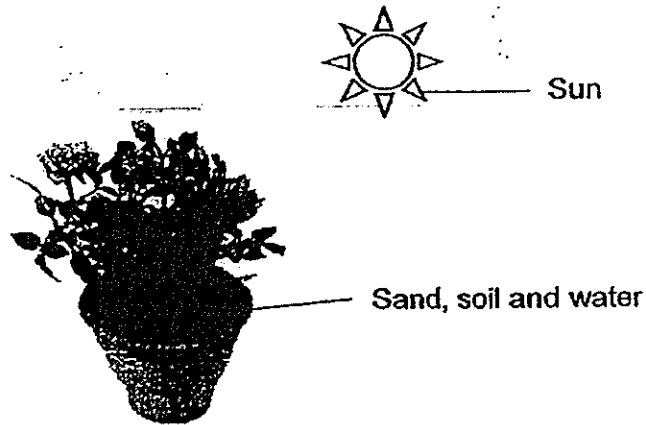
26. The container below had a capacity of  $200 \text{ cm}^3$ . It contained  $20 \text{ cm}^3$  of water. Melvin pumped  $100 \text{ cm}^3$  of oxygen into the container below and sealed it up.



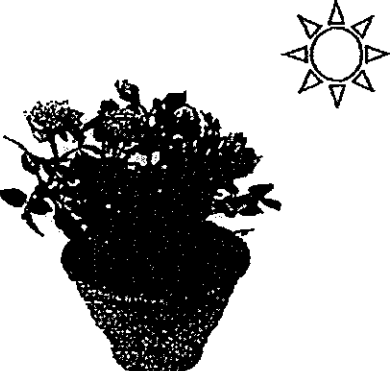



What was the final volume of oxygen in the container?

- (1)  $80 \text{ cm}^3$
- (2)  $100 \text{ cm}^3$
- (3)  $180 \text{ cm}^3$
- (4)  $200 \text{ cm}^3$

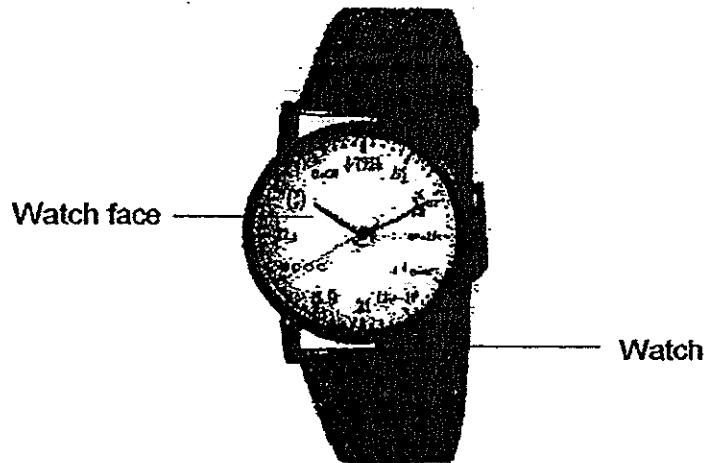
27. Ben had an idea that green plants need sand in the soil for healthy plant growth. He conducted an experiment using two pots of plants to investigate his idea. He set up one pot of plants as shown below.



Which one of the following should Ben use for the second pot of plants?

<p>(1)</p>  <p>Sand and soil</p>	<p>(2)</p>  <p>Soil and Water</p>
<p>(3)</p>  <p>Sand and water</p>	<p>(4)</p> <p>Dark cupboard</p>  <p>Soil and water</p>

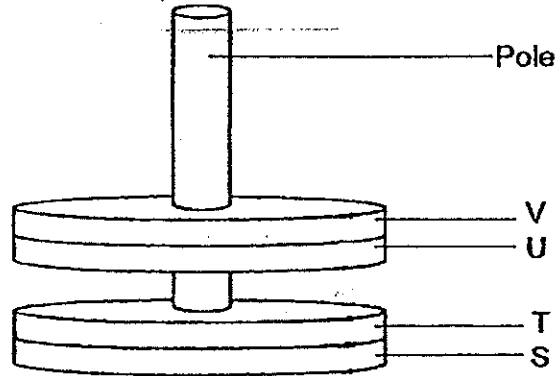
28. The picture below shows a watch.



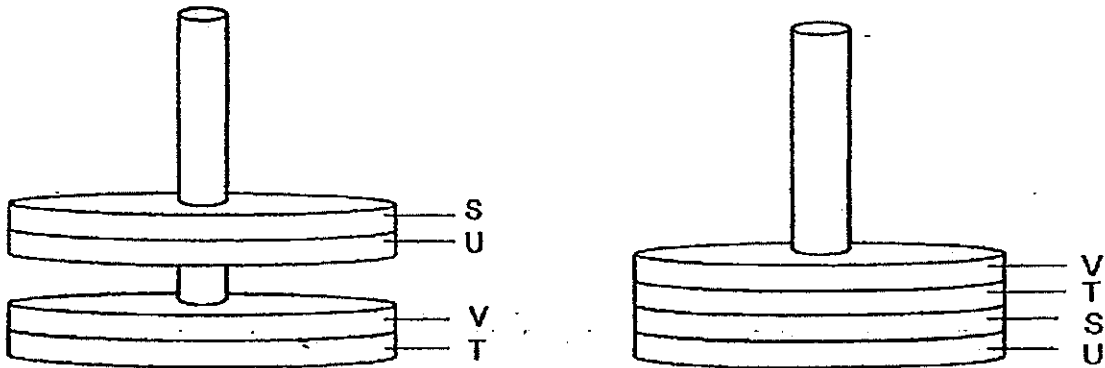
Which of the following properties must the manufacturer consider during the design and manufacturing of the glass covering the watch face?

- A Strength
  - B Hardness
  - C Flexibility
  - D Ability to float
- 
- (1) A and B only
  - (2) C and D only
  - (3) A, B and D only
  - (4) B, C and D only

29. The diagram below shows 4 rings being slotted through a pole. Out of the 4 rings, S, T, U and V, 3 of them are ring magnets and 1 of them is an iron ring.



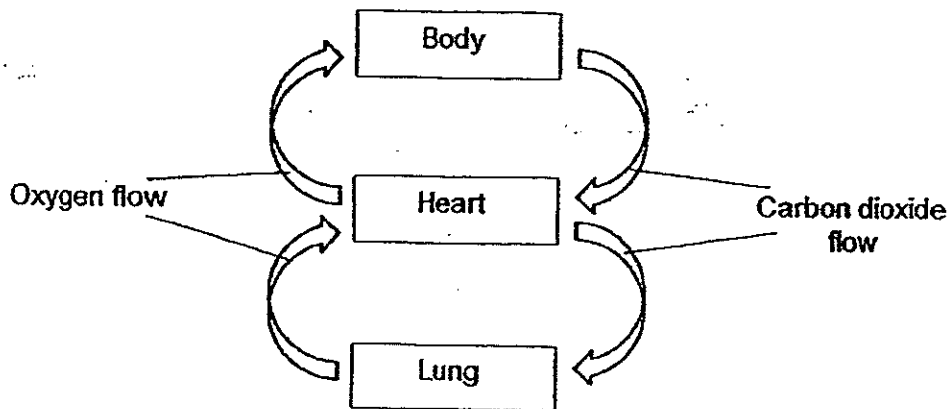
The 4 rings are then rearranged into the following 2 different arrangements.



Based on the 3 arrangements, which one of the rings is the iron ring?

- (1) S
- (2) T
- (3) U
- (4) V

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



Which of the following correctly depicts the change in the amount of oxygen and carbon dioxide in the blood immediately after a person has exercised for one hour?

	Oxygen level in the blood	Carbon dioxide level in the blood
(1)	Increase	Increase
(2)	Increase	Decrease
(3)	Decrease	Increase
(4)	Decrease	Decrease

Index No.



**NAN HUA PRIMARY SCHOOL  
PRELIMINARY EXAMINATION – 2014  
PRIMARY 6**

**SCIENCE**

**BOOKLET B**

**14 Open-ended questions (40 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.

**Section B**

	<b>/40</b>
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**Name:** \_\_\_\_\_ (      )      **Class:** P 6 \_\_\_\_\_

**Date:** 26 August 2014

**Parent's Signature:** \_\_\_\_\_

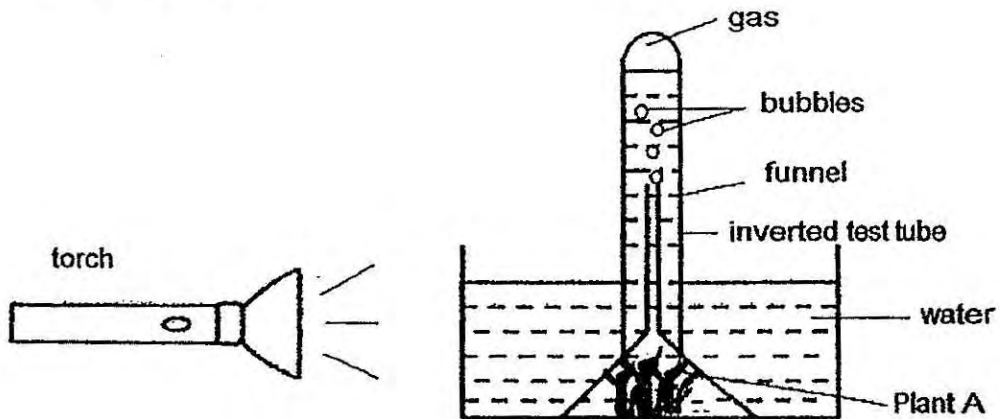


**Section B: (40 marks)**

Write your answers to questions 31 to 44.

The number of marks available is shown in brackets [ ] at the end of each question or part question.

31. Samantha conducted an investigation to find out how the intensity of a light source affects the rate of photosynthesis of 2 different types of garden plants, A and B. She set up the experiment as shown in the diagram below.



After 1 hour, she noticed that a gas was collected in the inverted test tube.

- (a) Name the gas that was collected in the test tube. [1]

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- (b) She exposed the two different garden plants, Plant A and Plant B, over a range of light intensities. She then plucked a leaf from each of the plant after each light exposure and tested the amount of starch in each leaf. Her results are shown in the table below.

Light intensity (lux)	Milligrams of starch in the leaf	
	Plant A	Plant B
50	2	4
100	5	8
150	9	15
200	12	17

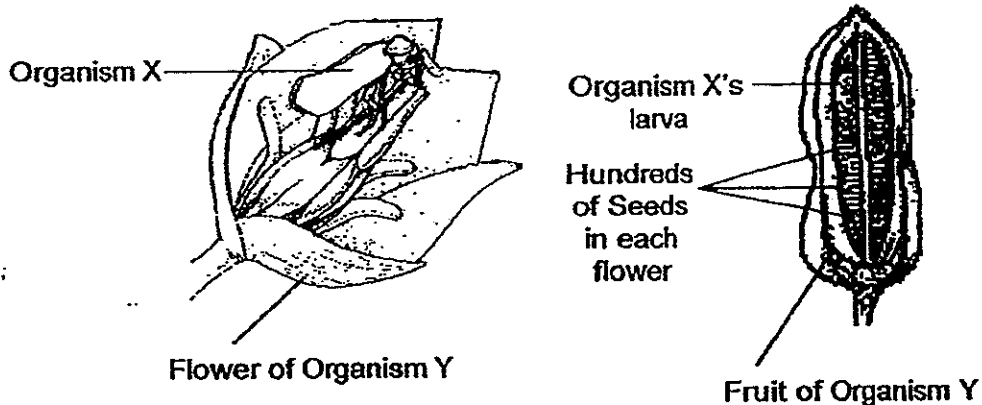
Based on the results, which plant grows better in an area with very poor light condition? Give a reason for your answer. [1]

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Score	2
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32. Organism Y is a plant found mainly in deserts. Organism X has a specialised mouth part that enables it to collect the pollen grains of Organism Y, roll them into a ball and deposit them on the stigma of Organism Y. Organism X will also lay its eggs in the ovary of the flower of Organism Y. When the eggs hatch, the larvae will feed on some of the seeds of Organism Y before leaving the fruit.



Explain clearly how the two organisms depend on each other for survival. [2]

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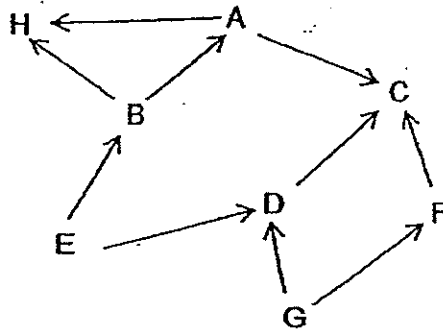
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Score	2
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33. The diagram below shows a food web found in a community.



(a) Construct 2 food chains based on the food web above. [2]

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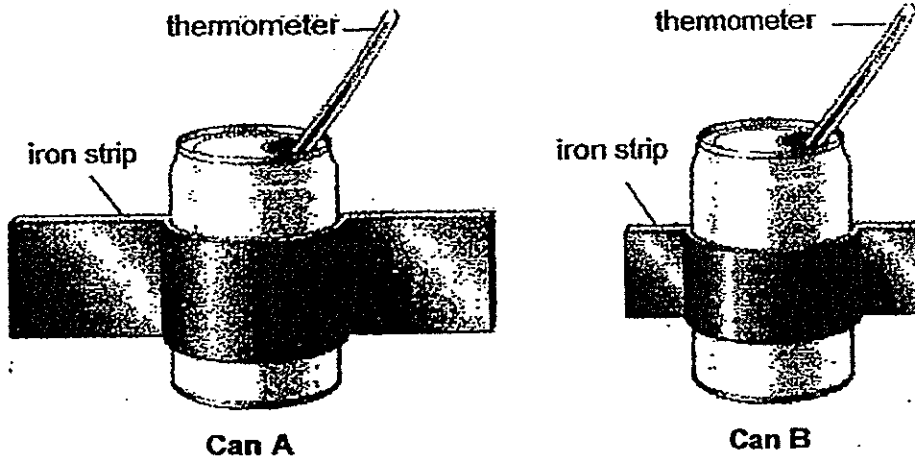
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(b) Classify the organisms in the above food web into the classification chart below. [1]

Organisms			
Producer	Plant eater	Plant and animal eater	Animal eater
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Score	3
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34. Aisha filled 2 identical cans with  $250 \text{ cm}^3$  of hot water. She wrapped strips of iron of different sizes around them as shown in the diagram below.



She recorded the temperature of the water in each can after every 5 minutes. The table below shows her results.

Time (minutes)	Temperature ( $^{\circ}\text{C}$ )	
	Can A	Can B
0	80	80
5	74	77
10	62	70
15	50	63

- (a) Based on the results given, which can, A or B, allows the water to cool down faster? Give a reason for your answer. [2]

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Score	2
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**Fox A**



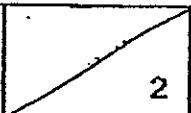
**Fox B**

- (b) The pictures above show two types of foxes. Examine the pictures carefully and predict which fox will be able to survive better in the hot desert. Give a reason for your answer. [2]

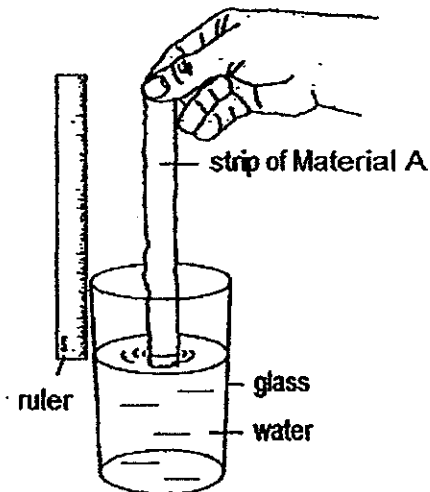
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Score	
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35. An experiment was done to study how absorbent 2 materials were. A strip of Material A was held with one end in a glass of water. The water height in the material was recorded every five seconds. Two trials were done using the same type of material. Then, the experiment was repeated using Material B. The diagram shows the experimental setup and the data table shows the results of the experiment.



Time material is dipped in the water (seconds)	Water Height in Material (cm)				Average Water Height in Material (cm)	
	Material A		Material B		Material A	Material B
	Trial 1	Trial 2	Trial 1	Trial 2	Average	Average
5	4	3	5	6	3.5	5.5
10	5	4	7	9	4.5	8.0
15	5	6	8	10	5.5	9.0
20	6	6	9	10	6.0	9.5

- (a) Identify one other variable that should remain constant in the experiment. [1]

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- (b) Which material is more suitable for making babies' diapers? Give a reason for your answer. [1]

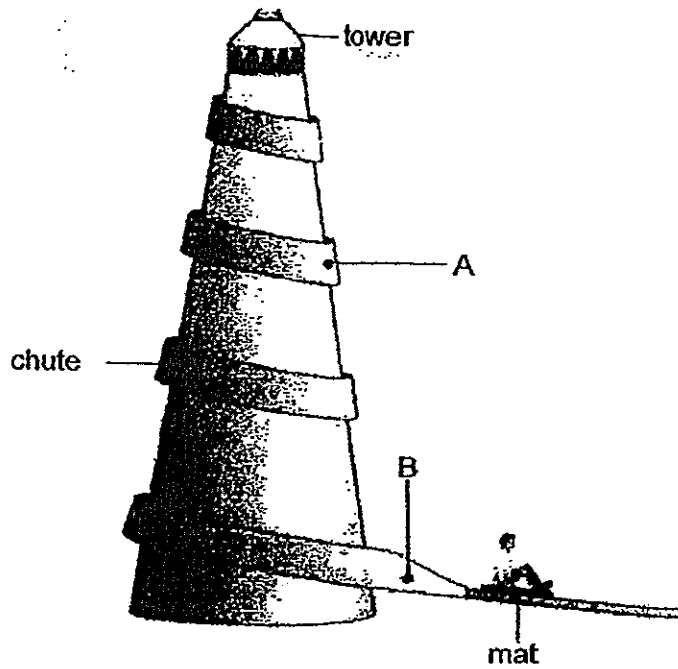
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Score	2
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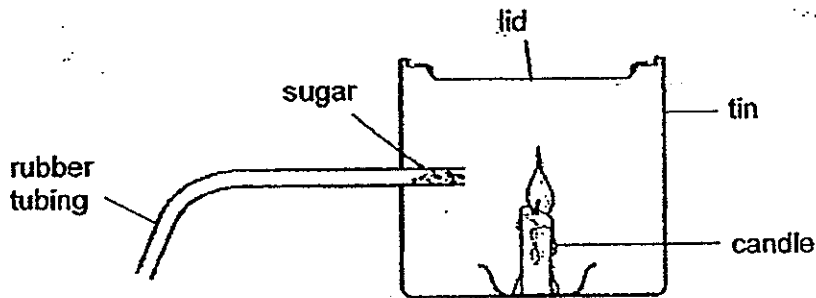
36. Chun Ming sits on a mat at the top of a tower and then slides down a chute around the outside of the tower.



- (a) Name two forces that are acting on Chun Ming as he slides down from Point A to Point B. [1]
- 
- (b) Chun Ming goes back for a second round. This time he sits on a smooth cushion instead of a mat. He goes much faster on the cushion as he comes down the chute. Give a reason for your answer. [1]
- 
- (c) On his third round, Chun Ming lies back on the cushion with his arms on his side and legs straightened in front of him. What happens to his speed as he moves down the chute? Give a reason for your answer. [1]
- 

Score	3
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37. A teacher set up the following experiment behind a safety screen. She placed 1g of sugar at the end of the rubber tubing inside the tin as shown below.



The teacher blew through the other end of the rubber tubing. When the sugar came into contact with the flame, there was a loud explosion and the lid was blown off the tin.

- (a) When the sugar is burned in the experiment, the gas used and the gas produced are the same as when energy is released from sugar in the cells of the body during respiration. Name the gas that is used and produced. [1]

Gas used: \_\_\_\_\_ Gas produced: \_\_\_\_\_

- (b) The table below shows the energy values of 3 food substances.

Food substance	Energy value, in KJ (Kilojoules) per 100g
Sugar	2120
Almond powder	1718
Flour	1468

The teacher repeated the experiment with 1g of flour. Describe one difference that might be observed during the experiment. [1]

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Score	2
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38. Wayne bought 3 aquatic organisms, P, Q and R and placed them in 3 separate tanks in the combination as shown below.

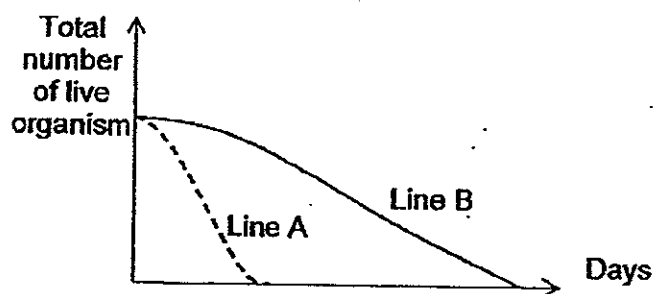
Tank 1	Tank 2	Tank 3
P and Q	P and R	Q and R

He left the organisms in the 3 tanks for 1 week and kept a record of the number of live organisms at the start and end of the 1 week in the table below. R is a carnivore.

Tank	Organism	Number of live organisms	
		Start	End
Tank 1	P	10	8
	Q	10	13
Tank 2	P	10	10
	R	10	0
Tank 3	Q	10	0
	R	10	12

- (a) Which organism will most likely be a food producer? [1]

- (b) At the end of 1 week, a disease killed off all of the food producers. Wayne then charted the total number of live organisms for the other 2 organisms in the graph below.



Based on the graph above, which line most likely represent the plant eater? Explain your answer clearly. [1]

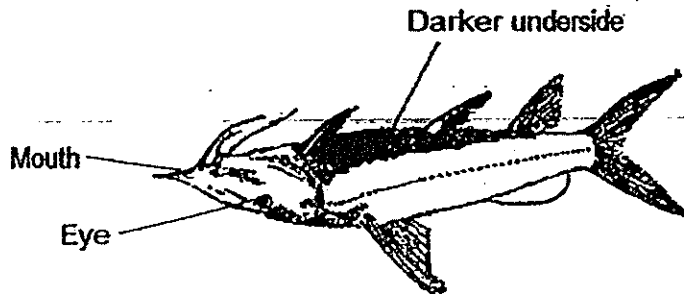
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Score	2
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39. The diagram below shows Organism U, which frequently swims upside down in a pond as shown below.



Organism U frequently swims upside down, especially when it is looking for food. It feeds mainly on small insects and sometimes grazes on algae. It has a mouth that faces downwards when it is swimming normally. The underside of its body is darker in colour compared to the top of its body.

- (a) Based on the information provided of Organism U, which part of a pond do you think it will look for food? [1]

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- (b) Give a reason for your answer in (a). [1]

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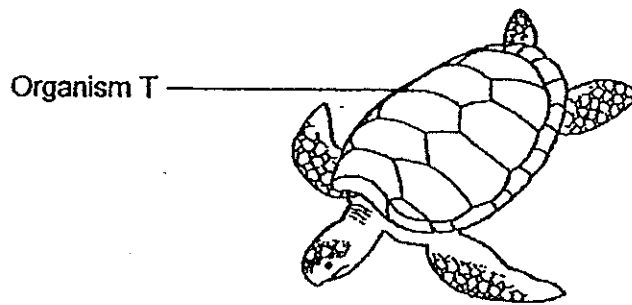
- (c) Explain how the darker underside of its body increases its chance of catching its prey. [1]

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Score	3
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40. Oil spills in the sea are disastrous to all the marine organisms in the area. Organism T, as shown below, is especially at risk as it does not avoid oil slicks purposely. Organism T needs to come to the surface for air. It feeds on small marine creatures and sometimes floating seaweeds. The young of Organism T also hides among the floating seaweeds to escape from their predators.



- (a) Explain clearly the 2 ways in which the oil spills will affect Organism T directly. [2]

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- (b) Explain how the oil spill might affect the floating seaweed and how that will indirectly reduce the survival rate of the young of Organism T. [2]

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Score	4
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41. An experiment was conducted using three insect-pollinated flowers, A, B and C in a field. For each flower, one or more parts of the flower were removed as shown in the table below. Insects were allowed to visit the flowers freely.

Flower	Stigma	Anther	Brightly coloured petals
A	Not removed	Removed	Not removed
B	Not removed	Not removed	Removed
C	Removed	Not removed	Removed

- (a) Which flower would most likely develop into a fruit? Explain your answer. [1]

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- (b) The Bee Orchid, a type of plant, as shown below, has the colour and shape that looks like the furry body of a female bee.



- Explain how this can help the Bee Orchid in its pollination. [2]

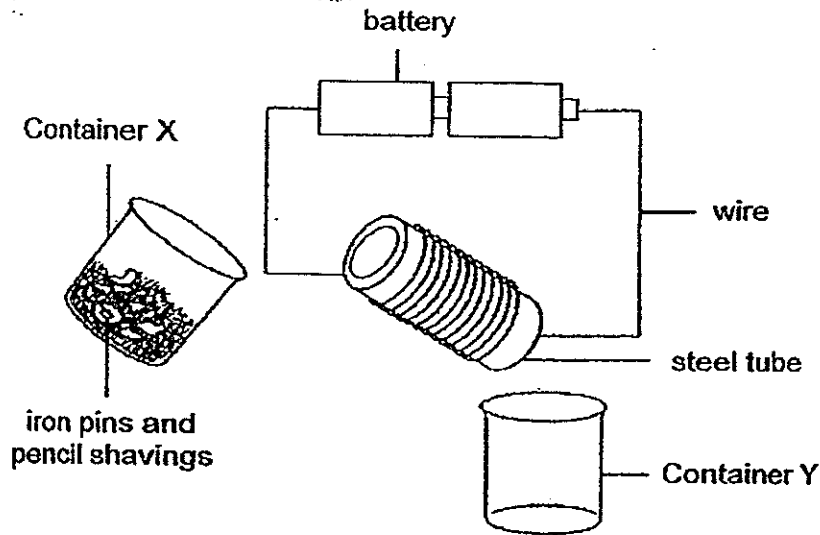
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Score	3
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42. Shane accidentally mixed some iron pins of different sizes with pencil shavings in container X. He tried to separate the iron pins and pencil shavings using the following set-up.



He poured the mixture of iron pins and pencil shavings through the steel tube. He found that only the smaller pieces of iron pins were stuck on the inner surface of the steel tube, while the larger pieces of iron pins and pencil shavings fell through the steel tube into container Y.

- (a) Explain why only the smaller pieces of iron pins were stuck to the inner surface of the steel tube? [2]

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- (b) Why did all the pencil shavings fall into Container Y? [1]

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- (c) State 2 ways which Shane can improve on his setup to ensure that the larger pieces of iron pins would be stuck to the inner surface of the steel tube. [1]

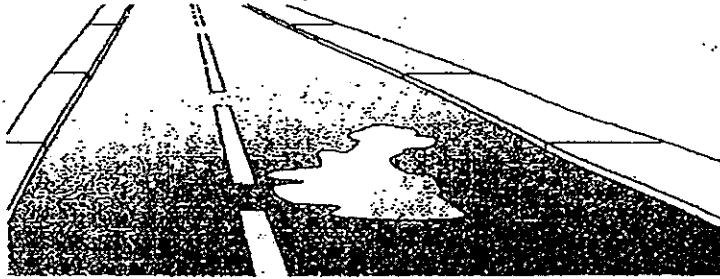
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Score	4
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43. The picture shows a puddle of water on a road, after a rain shower.

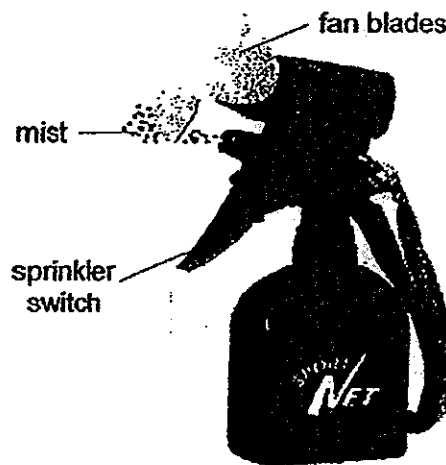


- (a) During the day, the puddle of water dries up and disappears.  
Explain the process that causes the puddle of water to disappear. [1]

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- (b) The picture below shows a battery-operated mist spray fan.



When the sprinkler switch is squeezed, mist is sprayed out. Explain clearly how using the mist-spray fan will help to cool a person down on a hot day. [2]

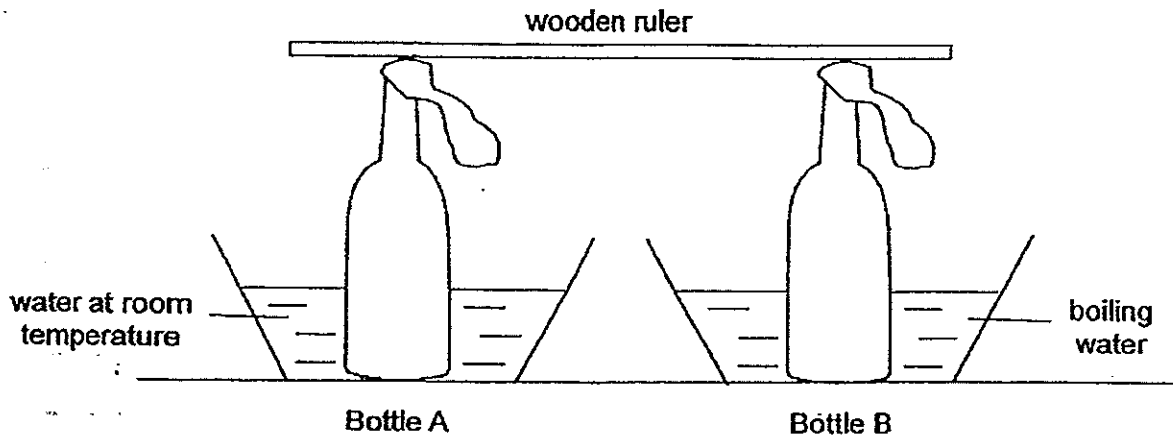
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Score	3
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44. A wooden ruler is balanced on two bottles, A and B. The opening of each bottle is covered with a deflated balloon as shown in the diagram below. Water at room temperature is poured into the container with bottle A and boiling water is poured into the container with bottle B.



- (a) Describe what would happen to the wooden ruler after 2 minutes. [1]
- 
- (b) Give a reason for your answer in (a). [1]
- 
- (c) A sky lantern is a small hot air balloon made of paper, with an opening at the bottom where a small flame is suspended.



The lantern is able to float in the air until the flame dies out. Explain why the lantern is able to float for the period of time. [1]

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End of Paper

Score	3
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1. The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that proper record-keeping is essential for the integrity of the financial system and for the ability to detect and prevent fraud.

2. The second part of the document outlines the various methods used to collect and analyze data. It describes the use of statistical techniques to identify trends and anomalies in the data, and the importance of using reliable sources of information.

3. The third part of the document discusses the role of the auditor in the process. It describes the various types of audits that are conducted, and the importance of the auditor's independence and objectivity in the process.

4. The fourth part of the document discusses the various factors that can affect the accuracy of the data. It describes the importance of using reliable sources of information, and the need to be aware of potential biases and errors in the data.

5. The fifth part of the document discusses the various methods used to analyze the data. It describes the use of statistical techniques to identify trends and anomalies in the data, and the importance of using reliable sources of information.

6. The sixth part of the document discusses the various factors that can affect the accuracy of the data. It describes the importance of using reliable sources of information, and the need to be aware of potential biases and errors in the data.

7. The seventh part of the document discusses the various methods used to analyze the data. It describes the use of statistical techniques to identify trends and anomalies in the data, and the importance of using reliable sources of information.



Nan Hua Primary School  
P6 Prelims Science 2014  
Answer Key

**Section A (30 x 2 m)**

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

**Section B (30 x 2 m)**

Qn	Answer	Marks	Remarks
31a.	Oxygen	1m	
31b.	Plant B. Under the <b>same light condition</b> Plant B <b>produces more glucose</b> / It has a <b>higher rate of photosynthesis</b> under the <b>same light condition</b> .	1m	With a light intensity of 50 lux, Plant B produces more glucose [1m]
32.	Organism X helps to <b>pollinate</b> the flowers of Organism Y to <b>ensure the survival of the species</b> [1m]. In return, the <b>larva of Organism X is provided with food</b> [1m] once it is hatched by feeding on the seeds of Organism Y's fruit.	2m	Helps to pollinate [1m] Ensure continuity [1m] Ensure survival of species [1m]
33a	E → B → A → H E → B → A → C E → B → H E → D → C G → D → C G → F → C	2m (Any 2)	E → B → A (0m) Incomplete food chain
33b	Producer – E, G Plant eater – B, D, F Plant and Animal eater – NIL Animal eater – A, C, H	1m or 0m	
34a	Can A. Can A has a bigger drop in temperature (1/2) at the end of the experiment. It has a <b>bigger/wider/longer iron strip</b> (1/2) around it which allows <b>heat</b> from the <b>hot water</b> to be <b>conducted away</b> to the surroundings <b>more quickly</b> (1).	2m	

34b	Fox A. Its ears have a <b>bigger surface area in contact with air (1)</b> , hence it will be able to <b>lose more heat (1)</b> through its ears.	2m	Bigger ears (1/2)
35a.	Size of the strip / Thickness of the strip / Amount of water in the glass / temperature of the water / etc.	1m	
35b.	Material B. The average <b>height of water absorbed is higher (1/2)</b> , hence it is <b>more absorbent (1/2)</b> . OR It is <b>more absorbent (1/2)</b> as it <b>absorbs more water / absorbs water faster (1/2)</b> than A.	1m	Time/duration each strip is in the water (0m)
36a.	Gravity / Friction / Air resistance	1/2m each	Any two
36b.	The cushion is <b>smoother (1/2)</b> than the mat, hence there is <b>less friction between cushion and the chute than the friction between the mat and the chute (1/2)</b> , hence he is able to move down faster.	1m	
36c.	His speed increases. With a <b>more streamlined (1/2)</b> body shape, he will encounter <b>less air resistance (1/2)</b> .	1m	
37a.	Used: Oxygen Produced: Carbon dioxide	1/2m each	
37b.	The lid does not move / The lid is not pushed off / The explosion is not as loud as before	1m	Less energy is released – 0m (cannot be observed)
38a	P	1m	
38b	Line A. When there is no more food producers, plant-eaters should be the first one to die out as evident from the sharper dip in Line A.	1m	
39a	Near the surface of the pond	1m	
39b	Its mouth will face upwards when it is looking for food.	1m	
39c	The darker underside helps to <b>camouflage it / blend in with the bottom of the pond [1/2m]</b> when it is swimming upside down so that it is <b>more difficult for its prey to detect</b>	1m	

	its presence [1/2m].		
40a	When Organism T comes to the surface for air, some of the <b>oil slicks may enter its respiratory system</b> [1m] and harms it. When it feeds on <b>floating seaweeds covered with the oil slick, it may get poisoned</b> [1m].	2m	
40b	When the floating seaweed gets covered with the oil slicks, it <b>may not be able to receive enough sunlight to photosynthesize and may die off</b> / Oil will block the stomata and thus the seaweed cannot take in and give out oxygen and carbon dioxide and thus cannot respire and photosynthesize and may die off [1m]. The young of Organism T will then <b>lose its hiding place and thus predators may be able to spot it more easily</b> [1m].	2m	
41a.	Flower A. It has a <b>stigma to receive pollen grains (1/2)</b> and there are <b>petals to attract the insects (1/2)</b> to the flower.	1m	
41b.	The male bee will be attracted to the flower for <b>mating (1)</b> and <b>pollen grains will be stuck to its legs or body and be carried by the male bee to other flowers (1)</b> .	2m	
42a.	The steel tube becomes an <b>electromagnet (1/2)</b> when the electricity flows through the circuit. The iron pins which are made of magnetic materials are <b>attracted (1/2)</b> to the electromagnet. The magnetised steel tube is <b>not strong enough to overcome the weight (1)</b> of the <b>larger pieces of iron pins</b> . Thus the larger pieces of iron pins will not be stuck to the inner surface of the steel tube as gravity will pull them into Container Y.	2m	

42b.	The pencil shavings are <b>not made of magnetic materials</b> , hence they will <b>not be attracted (1/2)</b> to the magnetised steel tube and <b>gravity will pull them down (1/2)</b> into Container Y.	1m	
42c.	Have more batteries in the circuit. Make more coils around the steel tube.	1/2m each	
43a.	The puddle of water <b>gained heat (1/2)</b> from the surrounding air and <b>evaporated (1/2)</b> .	1m	
43b.	The mist that is sprayed out will land on the person. When the mist <b>evaporates</b> , it will <b>gain heat from the person's body (1m)</b> . The wind from the spinning blades also causes the mist to <b>evaporate faster (1m)</b> .	2m	
44a	The ruler on the side of Bottle B moved upwards / The ruler dropped.	1m	Dependent marking
44b.	<b>Air inside the bottle B expanded when heated (1/2)</b> causing the balloon on Bottle B to <b>inflate/become bigger (1/2)</b> .	1m	
44c	The air inside the sky lantern <b>gains heat and expands/rises</b> , pushing the lantern up.	1m	Hot air inside the sky lantern rises (1m)