Index	 -		<u> </u>	
No.				



## NAN HUA PRIMARY SCHOOL PRELIMINARY EXAMINATION 2008 PRIMARY 6

### SCIENCE (BOOKLET A)

	Booklet A	. 1
Name: ( )	Booklet B	
Class: Pr. 6	- DOORICE D	· 1
Date: 21 August 2008	TOTAL	1

Parent's Signature & Date

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

#### **INSTRUCTION TO CANDIDATES**

- 1. Write your Index Number in the boxes at the top right-hand corner.
- 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.

60

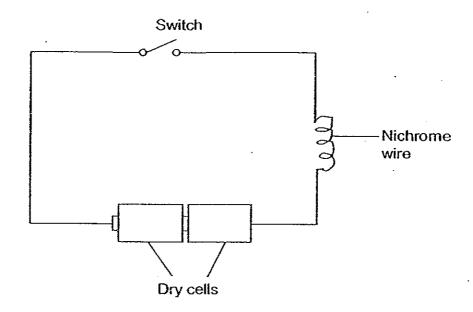
40

100

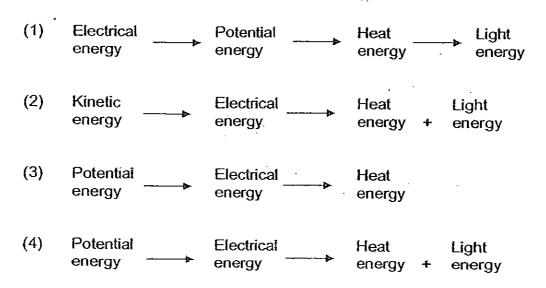
#### Section A: (30 x 2marks = 60marks)

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. An experiment was set up as shown in the diagram below. A coil of nichrome wire and a switch were connected to an electric circuit.

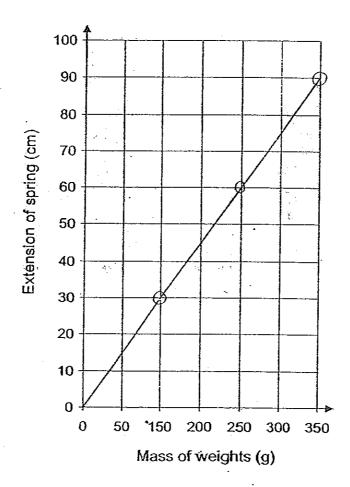


When the switch was closed, the nichrome wire turned hot and started to glow. Which one of the following shows the correct energy conversion?



2. Josephine used a spring with an original length of 14 cm to conduct an experiment to find out the relationship between the extension of the spring and different weights.

She hung different weights on the spring one at a time and measured its extension. She recorded the results and plotted the results on the graph below.



Based on the graph, what would be the length of the spring when a 250g weight was hung on it?

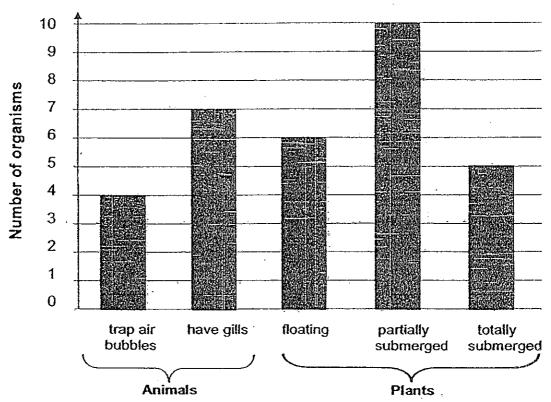
(1) 14 cm

(2) 60 cm

(3) 74 cm

(4) 104 cm

3. Pupils in Class 6N counted the aquatic plants and animals found in their school ecopond. They plotted a graph as shown below.

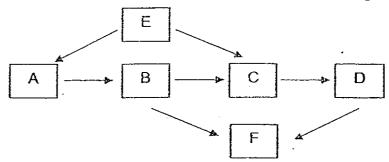


Which of the following statements about the plants and animals in the pond are definitely true?

- A: There are 11 animals.
- B: There are seven fish in the pond.
- C: There are 21 populations of plants.
- D: There are at least three populations of plants.
- (1) A and D only
- (2) B and C only
- (3) A, C and D only
- (4) A, B, C and D
- 4. Which of the following explain(s) why animals adapt for their survival?
  - A To find food.
  - B To find mates.
  - C To escape danger.
  - (1) A only

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

5. The food web below shows the relationship between six living organisms.



Which organism(s) play(s) the role of a prey and predator?

- (1) E and F only
- (2) B, C and D only
- (3) A, B, C, D only
- (4) B, C, D and F only
- 6. An oil spill from a tanker covered a large area of water near the seashore. The manne life in that area was affected badly. Some seabirds were also found dead on the beach.

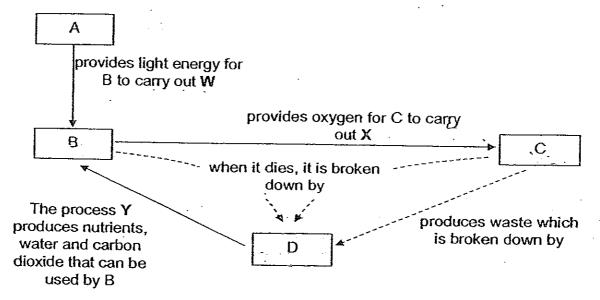
Which of the following statement(s) about the death of the seabirds is/are true?

- A They drank the water that was contaminated by the oil.
- B They ate the fish which had swallowed the oil and were poisoned.
- C They feathers got soaked with oil and they could not fly.
- D They were suffocated by the oil furnes.X
- (1) B only

- (2) A and D only
- (3) A, B and C only
- (4) A, B, C and D
- 7. Which of the statement(s) is/are true?
  - A The cell membrane gives the cell a regular shape.
  - B The chloroplasts contain chlorophyll which traps light energy.
  - C The cytoplasm controls substances that move in and out of the cell.
  - D The nucleus controls the activities of the cell.
  - (1) B only

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

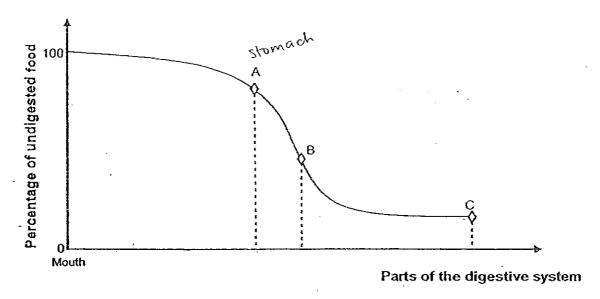
- 8. Which of the following statements about reproduction in animals are correct?
  - A The male animals produce sperms.
  - B One egg is fertilised by many sperms.
  - C Fertilisation always takes place inside the female body.
  - D Fertilisation takes place in the fallopian tube of the female human body.
  - (1) B and D only
- (2) A and D only
- (3) A, C and D only
- (4) A, B, C and D
- 9. Look at the concept map.



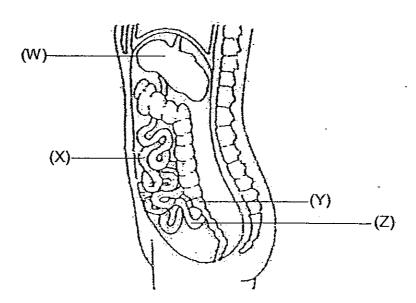
Which of the following processes corresponds to the letters W, X and Y?

	W	X	Υ
(1)	Respiration	Photosynthesis	Decomposition
(2)	Photosynthesis	Respiration	Decomposition
(3)	Decomposition	Photosynthesis	Respiration
(4)	Photosynthesis	Decomposition .	Respiration

The graph below shows the percentage of undigested food that passes through the 10. digestive system of an adult namely parts, A, B and C.

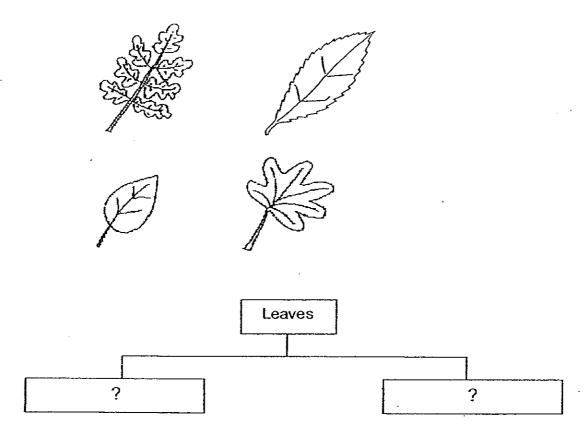


In the diagram of the human digestive system below, which letters, W, X, Y or Z correctly corresponds to part C?



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

11. The following diagram below shows the different types of leaves.

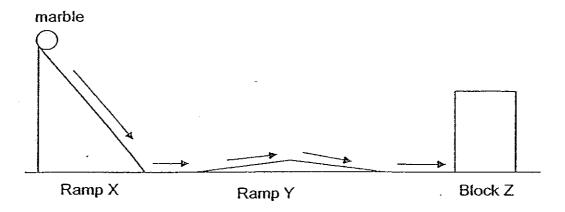


Which of the following headings can be used in a classification chart to group all the leaves above?

- A Simple leaves or Compound leaves
- B Parallel veins or branch veins
- C Oval shape or Lobed shape
- (1) A only

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

12. Sze Ling set up an experiment to study the energy changes which takes place when an object is moving.



She released a marble from the top of ramp X. It rolled downwards and along the floor before it travelled up ramp Y and rolled down again. It hit against wooden block Z with a soft thump and stopped moving.

Which of the following statements are true for the above experiment?

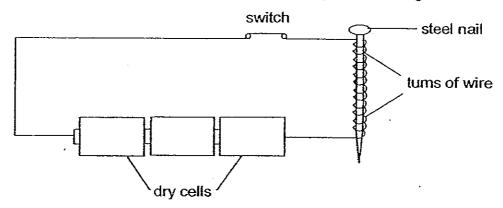
- A When the marble was released, it gained potential energy.
- B When the marble was travelling up ramp Y, kinetic energy was converted to potential energy.
- C When the marble hit weoden block Z, some of its energy was converted to heat energy and sound energy.
- D When the marble was moving along the floor, some of its energy was converted to kinetic energy.
- (1). A and C only

(2) B and C only

(3) B and D only

(4) C and D only

13. Aziz and Samuel conducted an experiment to find out how the number of tums of wire around a steel nail would affect the strength of the magnetised nail.



They measured the strength of the magnetised nail by the number of paper clips that it could pick up. They recorded the results in the table below.

Number of turns of wire around steel nail	Number of paper clips picked up
20	21
25	26
30	30
35	35
40	39
45	43
50	48
55	48
60	48

Based on the results, which of the following inference(s) could Aziz and Samuel make?

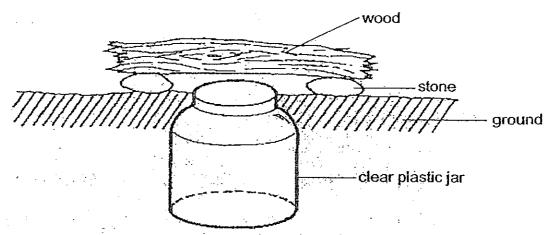
- A The maximum number of paper clips that can be picked up by the magnetised nail is 48.
- B The strength of the magnetised nail keeps increasing as the number of coils increases.
- C After 50 turns of wire, the number of turns of wire around the nail will not further increase the strength of the magnetised nail.
- (1) B only

(2) A and B only

(3) A and C only

(4) B and C only

14. Rahman dug a hole in his school garden and placed a clear plastic jar in it. He placed a piece of wood over the opening of the jar as shown in the diagram below.

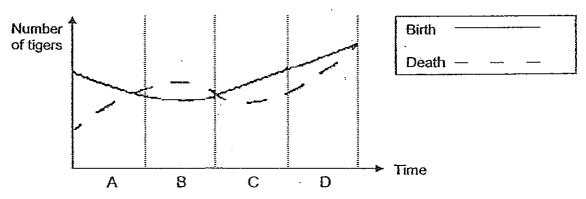


He left the open jar in the ground. When he checked the jar a few days later, he found some organisms in it.

Which of the following organisms would Rahman most likely find in the jar?

- A Ants
- B Spiders
- C Millipedes
- D Caterpillars
- (1) B and C only
- (3) A, C and D only

- (2) A, B and C only
- (4) B, C and D only
- 15. The graph below shows the number of births and deaths of tigers.



Which period (A, B, C or D) shows a decline in the population of tigers?

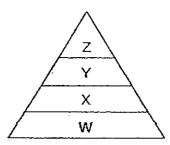
(1) A

(2) B

(3) C

(4) D

16. The diagram below shows the pyramid of numbers in an eco-system. W, X, Y and Z are organisms living in it.



Which organism(s) is/are likely to be a herbivore?

(1) W only

- (2) X only \*
- (3) W and X only
- (4) Y and Z only
- 17. Which of the following statement(s) describe(s) behavioural adaptation?
  - A Eats a lot to generate body heat.
  - B Bones of some organisms are hollow to reduce body weight.
  - C Streamlined body of some organism to reduce air or water resistance.
  - (1) A only

- (2) A and B only
- (3) B and C only
- (4) A, B and C
- 18. The floating aquatic plant, water hyacinth, has air spaces in its leaves stalk. How do these air spaces help the plant?
  - (1) To help the plant float on water.
  - (2) To enable water to roll off the plant.
  - (3) To help the plant to disperse its fruits.
  - (4) To help the plant to carry out transpiration.

19. The environmental information below was found on an aerosol spray can.

#### **ENVIRONMENTAL INFORMATION**

- Contains no Chlorofluorocarbon (CFC)
- Container is made from 27% recycled steel

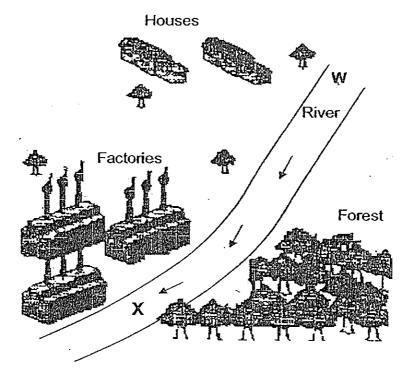
#### Which statement(s) is/are true?

- A Using the above aerosol spray is environmentally friendly.
- B Using aerosol spray which contains CFC should be encouraged.
- C Using the above aerosol spray will increase the destruction of the ozone layer.
- D Using the above aerosol spray helps to conserve natural resources because steel can be recycled.
- (1) B only

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

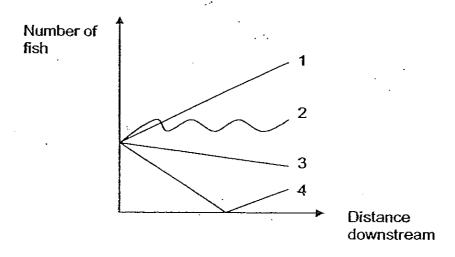
20. The picture shows a river flowing through a town.

The residence do their washing in the river and the factories dump chemical waste into the river.



A number of fish is released at location W. The fish are counted from W to X.

Which line graph correctly shows the change in the population of fish when they move from location W to location X?



21. The table below shows some facts and figures about the planets in our Solar system.

Name of planets	Distance from the sun (km)	Diameter (km)	Time taken to go around the sun once (Earth time)
Earth	150 million	12 756	365 days
Jupiter	778 million	142 984	12 years
Mars	228 million	6 796	: 688 days
Mercury	58 million	4 878	88 days
Neptune	4504 million	49 528	165 years
Saturn	1429 million	120 536	γ <sup>0</sup> √30 years
Uranus	2871 million	51 118	84 years
Venus	108 million	12 104	225 years hay

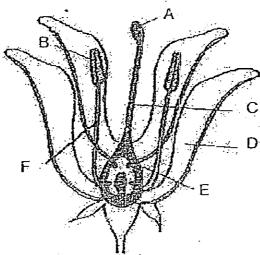
How many revolutions would <u>Jupiter</u> make approximately round the Sun in the time Venus takes to complete one revolution?

**(1)** 7

(2) 12

(3) 19

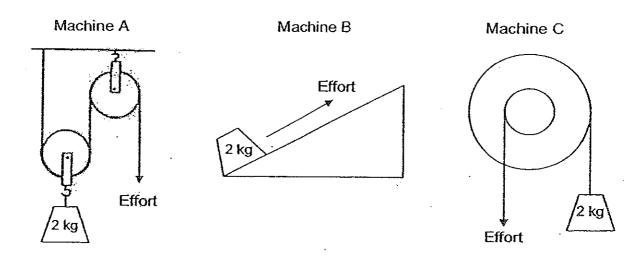
- (4) 31
- 22. Study the picture of a flower given below.



Which parts of the flower form the female reproductive system of the flower?

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

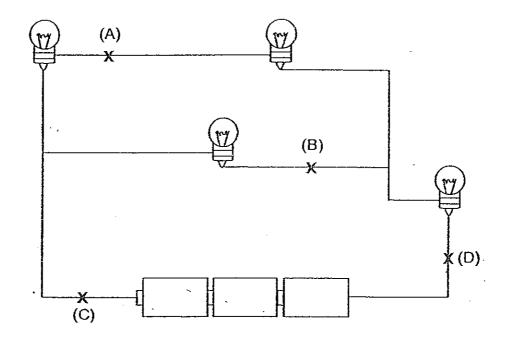
23. The diagram below shows three simple machines, A, B and C. Each of the simple machines was used to overcome an identical 2-kilograms load.



Which of the following statement(s) is/are true for the simple machines above?

- A The effort needed was lesser than the load for machines A, B and C.
- B The direction of the effort is opposite that of the load for machine A and C.
- In machines A and B, the distance moved by the effort was greater than the distance moved by the load.
- (1) B only
- (2) A and B only
- (3) A and C only.
- (4) B and C only

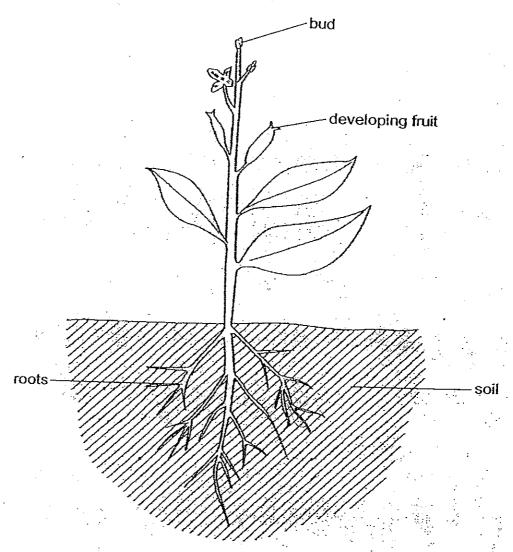
24. The diagram shows four lighted bulbs in a circuit. A switch is to be installed so that only a particular bulb is switched off, while the rest of the light bulbs will remain lighted.



At which position A, B, C or D should the switch X be connected?

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

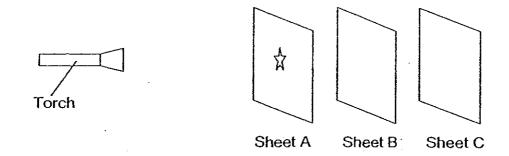
### 25. The diagram below shows some parts of a plant.



Which one of the following correctly identifies the substances that were transported from the roots to the leaves and from the leaves to the developing fruit?

	Roots to leaves	Leaves to developing fruit
(1)	Water	Охудеп
(2)	Dissolved mineral salts	Starch
(3)	Food	Dissolved mineral salts
(4)	Water	Glucose

#### 26. Jeremy carried out the following experiment in a dark room.



Sheets A, B and C were arranged in a straight line. When Jeremy switched on the torch, a faint star-shaped patch of light was seen on sheet C only. A dark shadow was formed behind sheet C.

Based on the information given above, which of the following materials best represent A, B and C respectively?

	Sheet A	Sheet B	Sheet C
(1)	Clear plastic	Wood <sup>-</sup>	Tracing paper
(2)	Cardboard	Frosted glass	Wood
(3)	Wood	Clear plastic	Cardboard
(4)	Clear glass	Tracing paper	Frosted glass

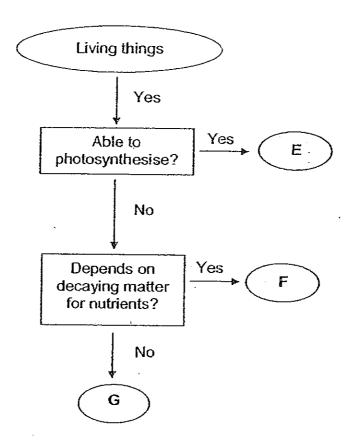
## 27. The table below shows the freezing point and boiling point of four different substances, W, X, Y and Z.

Substance	Freezing point (°C)	Boiling point (°C)
W.	10	112
X	-7	35
Ý	39	180
Z	-101	-35

Which of the following correctly represents the states of each of the substances W, X, Y and Z respectively at  $28^{\circ}\text{C}$ ?

	States of substances at 28°C			
	W	X	Y	Z
(1)	Liquid	Liquid	Solid	Liquid
(2)	Solid	Gas	Liquid	Gas
(3)	Gas	Solid	Liquid	Solid
(4)	Liquid	Liquid	Solid	Gas

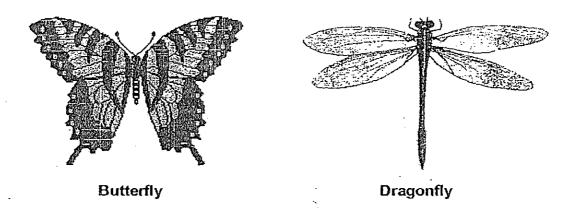
28. The flow chart below shows the characteristics of some living things.



Which of the living things can most likely be identified as E, F and G?

	E	F	G
(1)	Jew's ears	Termite	Moss
(2)	Grass	Woodlouse	Birds' nest fern
(3)	Balsam plant	Bracket fungus	Frog
(4)	Ladder fern	Moss	Chicken

#### The diagrams below shows a butterfly and a dragonfly. 29.



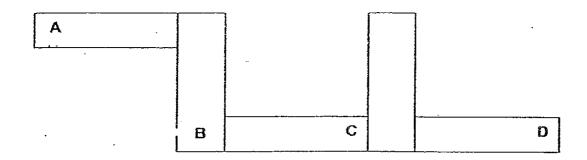
Which of the following statements about their life cycles are most likely correct?

- The dragonfly spends part of its life in the water but the butterfly does not. Α
- There are four stages in the life cylce of the butterfly while the dragonfly has В three stages in its life cycle...
- С The larva of the butterfly goes through the process of moulting while the larva of the dragonfly does not.
- D During one stage of its life cycle, the dragonfly stops feeding but the life cycle of the butterfly does not have such a stage.
- A and B only (1)

B and C only (3)

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

30. The diagram below shows how five bar magnets are placed together and the letters represent the poles of four of the magnets.



Which of the following most likely represents the poles of the four magnets correctly?

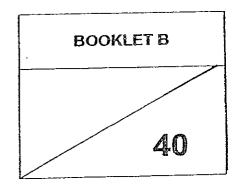
	Poles of the magnets			
***************************************	Α	В	С	D
(1)	South	South	North	South
(2)	North	South	South	North
(3)	South	North	South	South
(4)	North	South	North	North



# NAN HUA PRIMARY SCHOOL PRELIMINARY EXAMINATION 2008 PRIMARY 6

SCIENCE (BOOKLET B)

pam		
Name:	(	)
Class: Pr. 6		
Date: 21 August 2008		



Parent's Signature & Date

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

Section B: (40marks)

Write your answers to question 31 to 46.

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

31. The following table gives the condition of a certain habitat.

Temperature	Humidity	Amount of sunlight
20 °C	Damp	A little

(a) Name the type of community that can be found in the habitat above. [1]

(b)

Butterfly

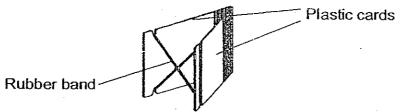
Woodlouse

Centipede

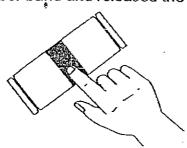
Which organism(s) will be found in the community mentioned in part (a)? [1]

Score 2

32. Yan Ning made a jumping toy using two pieces of strong plastic cards and a rubber band as shown in the diagram below.



She stretched the rubber band and released the toy.

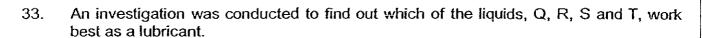


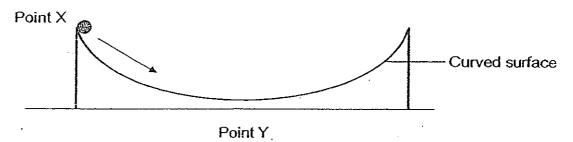
The toy snapped and jumped to a certain height from the ground. Yan Ning measured the height of the toy from the ground and recorded the results in the table below. She repeated the activity by increasing the number of rubber bands used.

Number of	Height of toy from the ground (cm)			
rubber bands	1 <sup>st</sup> try	2 <sup>nd</sup> try	3 <sup>rd</sup> try	Average
1	10	12	11	11
2	22.	24	26	24
3	41	40	42	41

- (a) Explain why the average height jumped by the toy increases as shown in the table above. [1]
- (b) Why was it necessary for Yan Ning to repeat the activity twice for each of the number of rubber bands used? [1]

Score 2





A small amount of each type of liquid was applied on identical curved surfaces as shown in the diagram above. An identical metal ball was then released from point X and it was allowed to roll up and down along the surface for a few times before it became stationary at point Y. The time taken for the ball to come to rest was recorded in the table below.

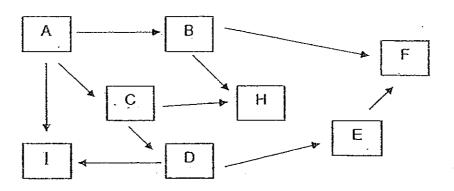
Liquid	Time taken for the ball to come to rest (s)
Q	. 5
R	11
S	15
T	9

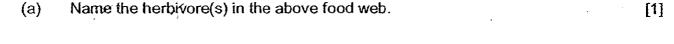
(a)	Arrange the four liquids in ascending order according to the amount of friction if	is able
	to reduce/between the two surfaces.	[1]

(b) Put a tick ( $\sqrt{ }$ ) in the box beside the variable(s) that must be kept constant for the investigation to be fair. [1]

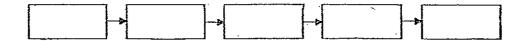
Variables	Kept constant
Colour of metal ball.	
Duration of the experiment.	
Amount of liquid applied on the surfaces.	
Amount of force applied when releasing the metal ball.	
The highest point travelled by the metal ball on the curved surface.	

34. Study the food web shown below.





(b) Construct a food chain consisting of 5 organisms based on the food web above. [1]

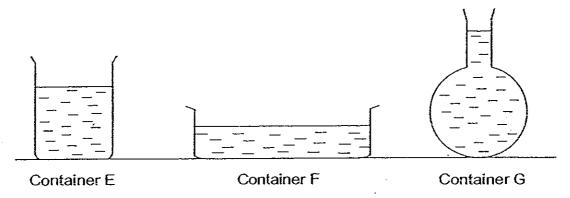


35. Study the picture of a fruit of a dandelion carefully.

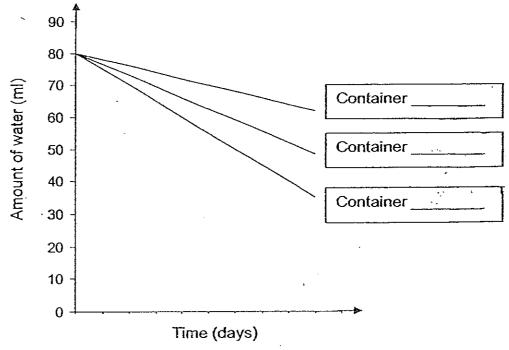


- (a) What structural adaptation does the fruit of dandelion have to help it to be dispersed?
  [1]
- (b) How does the part mentioned in part (a) helps the fruit of dandelion to be dispersed? [1]

36. Darby conducted an experiment to study the rate of evaporation of water placed in different containers. She poured 80 ml of water into each of the three containers E, F and G.



She placed the three containers on a table beside a window. She recorded the amount of water left in each container at regular intervals and plotted a graph as shown below.



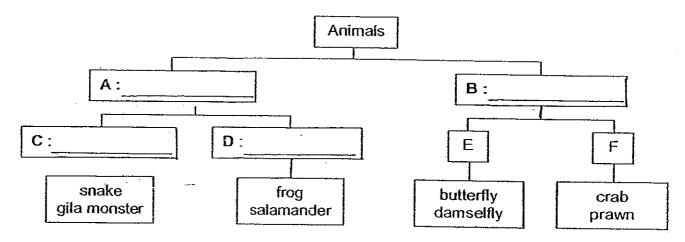
(a) In the line graph above, write E, F and G, beside the line graph which represent the amount left in each container respectively. [1]

of water

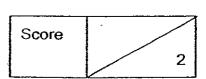
(b) What conclusion can Darby draw based on the results of the experiment?

[1]

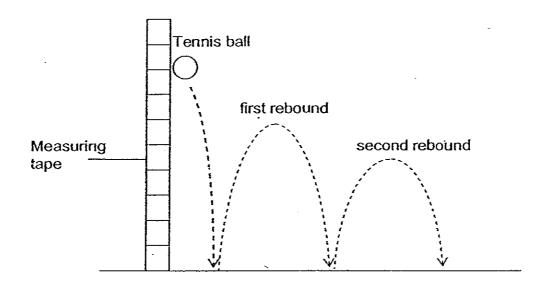
37. Study the classification table below.



How are the animals above classified? Write your answers in the boxes above. [2]



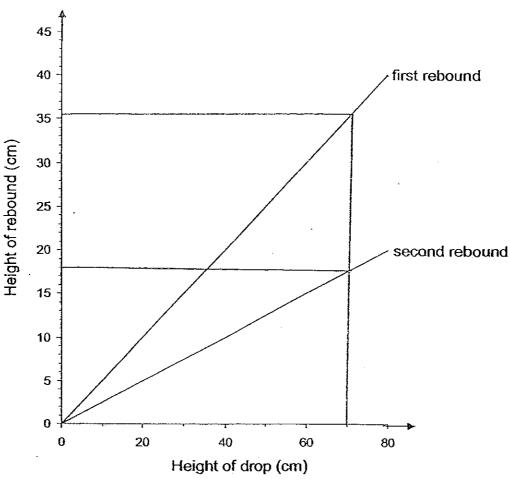
38. Jun Ming set up an experiment to measure the heights of rebound of a bouncing tennis ball.



He carried out his experiment as stated below:

- Step 1: Tape the measuring tape against the wall.
- Step 2: Hold the tennis ball at the 80-cm mark and release the ball.
- Step 3: Let it rebound twice and record how high it rebound each time.
- Step 4: Repeat steps 2 and 3 twice to find the average rebound height.
- Step 5: Repeat steps 2 to 4, releasing the ball from the 60-cm, 40-cm and 20-cm marks.

Jun Ming recorded his results and plotted a graph as shown below.



(a) State the aim of Jun Ming's experiment.

(b) Based on the graph, predict the heights of the first and second rebound of the tennis ball if it was released from the 70-cm mark. [1]

Height of first rebound:

Height of second rebound:

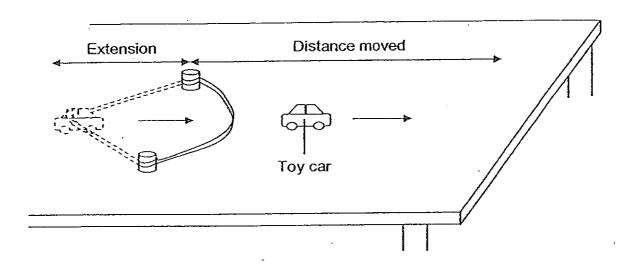
.. (c) Explain why the height of the rebound of the tennis ball decreases during the subsequent rebounds. [1]

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top

[1]

39. Joey conducted an experiment as shown in the diagram below.



She pulled the elastic band backwards together with a toy car with an extension of 2 cm. When she released the toy car, it moved a short distance forward on the table. She recorded the distance moved by the toy car and she repeated the experiment by increasing the extension of the elastic band.

Extension of elastic band (cm)	Distance moved by toy car (cm)
2	3.5
4	8.5
6	?
8	17.5
10	21.5
12	26

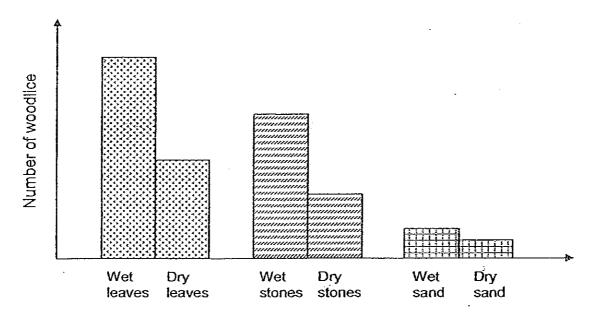
(a) Based on the results, predict the distance moved by the car when the elastic band was pulled backwards by 6 cm. [1]

(b) What can you conclude about the relationship between the extension of the elastic band and the distance moved by the toy car? [1]

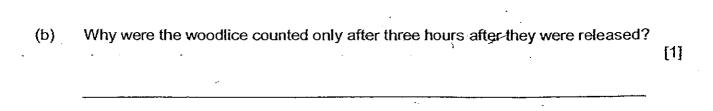
(c)	Without replacing the toy car, suggest another method where Joey can incredistance moved by the toy car.	
		·

40.	Jack conducted an experiment to find out the preferred habitat of woodlice. A number
	of woodlice of the same species were released into a darkened enclosure subjected
	under different conditions.

After three hours, he counted the number of woodlice in each habitat and plotted his results in the bar graph shown below.



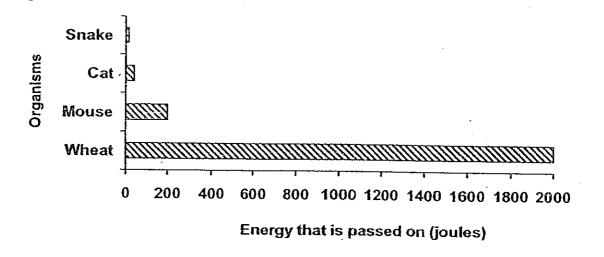
(a)	Based on the results, what could Jack infer about the preferred habitat or	f woodlice? [1]



(c) Identify a variable Jack must keep the same when conducting this experiment to ensure a fair test. [1]



The graph below shows the amount of energy being passed on to the next organism in the next link in the food chain.



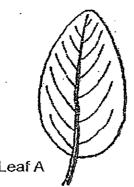
(a)	What conclusion can you draw based on the food chain and graph above?	

<b>(b)</b>	Explain why there cannot be too many links in a single food chain.	
	•	-

42. The following table gives the daily average condition of a certain habitat in the afternoon.

Temperature	Amount of rainfall	Amount of sunlight
48 °C	Low	Hìgh

Study the leaves below carefully.





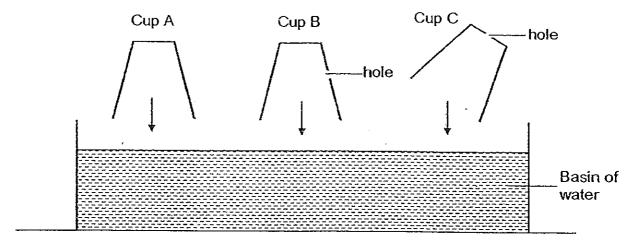
(a) Based on the diagrams, which one of these leaves is best suited to survive in the habitat mentioned above? Write down one structural adaptation that enables it to thrive in the habitat. [1]

(b) Explain how the structural adaptation of the leaf mentioned in part (a) enables it to thrive in the habitat. [2]

Score 3

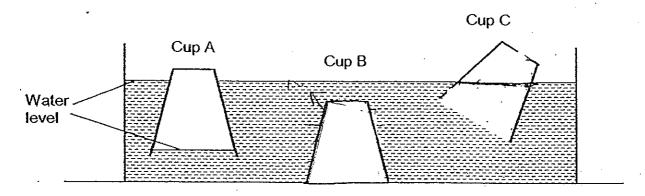
111

43. An experiment was conducted to demonstrate a property of air using three plastic cups A, B and C, and a basin of water. A hole was made in each of the plastic cups B and C.

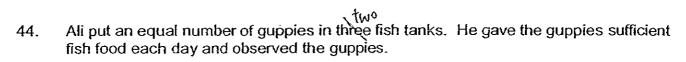


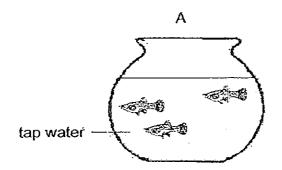
The cups were then inverted and pushed into the basin of water as shown in the diagram below.

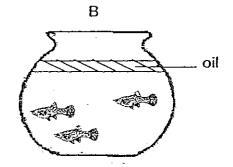
(a) The water level in cup A and the water level in the basin has been drawn for you. Complete the diagram by drawing in the correct water level in cups B and C if the cups were held in the positions as shown below. [2]



(b)	State the property of air that is demonstrated in the experiment above.	
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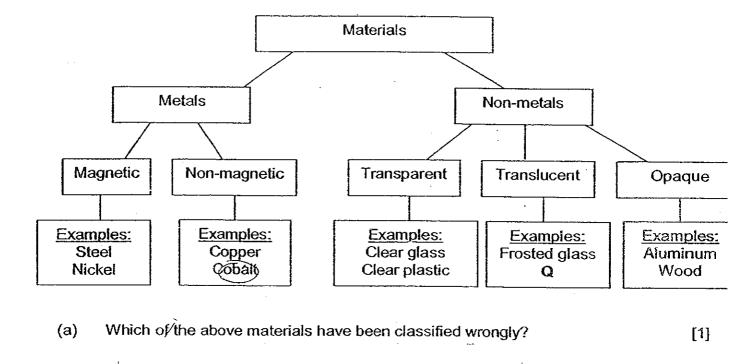


He recorded his observation in a table:

	Observation in Tank A	Observation in Tank B
Day 1 (Start of experiment)	Guppies swimming actively	Guppies are inactive
Day 2	Guppies swimming actively	?

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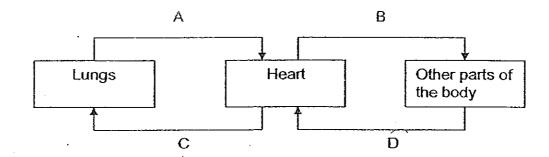
45. The chart below shows the classification of some materials.



- (b) State the main property that makes "Clear glass" suitable for making display units at department stores∠Explain your answer. [1]
- (c) Give an examplé of "Q". [1]

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46. Below is a simplified diagram of the circulatory system of man. The arrows represent the circulation of blood in the body.



Which blood vessels (A, B, C or D) contain a greater amount of carbon dioxide? Explain your answer,	[2]

#### Nan Hua Primary School

#### Primary 6 Science SA2 (2008)



Qn no.	Ans
1	4
2	3
3	1
4	4
5	2
6	3
7	2
8	2
9	2
10	3

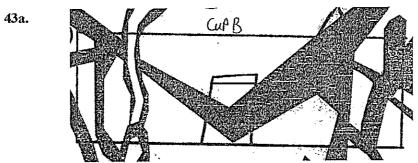
Qn no.	Ans
11	3
12	2
13	3 2
14	2
15	2
16	2
17	1
18	1
19	2
20	3

Qn no.	Ans
21	1
22	3
23	4
24	2
25	4
26	2
27	4
28	3
29	1
30	2

- 31a. A rotting community.
- 31b. Woodlouse, centipede.
- 32a. The greater the number of stretched rubber bands used, the greater amount of elastic potential energy stored. Hence, it would be converted to more kinetic energy, which caused the toy to jump higher.
- 32b. To ensure more reliable result, consistency, minimize experimental errors in the results.
- 33a. Q, T, R, S,
- 33b. Amount of liquid applied on the surfaces.

  Amount of force applied when releasing the metal ball.
- 34a. C and B
- 34b. A-C-D-E-F
- 35a. The fruit of dandelion has a hairy structure.
- 35b. The hairs help the dandclion to be carried away by the wind and it allows it to stay in the air for a longer time / travel a longer distance.
- 36a. G,E,F
- 36b. The bigger the exposed surface area of the water, the faster the rate of evaporation.
- 37. A: Vertebrates
  - **B:** Invertebrates
  - C: Reptiles
  - D: Amphibians

- 38a. Jun Ming wants to find out if the height at which the tennis ball released affects the height of rebound (first and second rebounds)
- 38b. 35cm, 17.5cm
- 38c. As the tennis ball hits the ground, some of its energy is converted to heat and sound energy.
- 39a. 13.5cm
- 39b. The longer the extension of elastic band, the distance moved by toy car.
- 39c. Lubricate the surface of the table to reduce friction.
- 40a. Woodlice prefer wet habitats to dry habitats and like wet leave habitat the most.
- 40b. This is to give the woodlice time to move to their preferred habitat.
- 40c. The distance of the woodlice from each habitat must be kept the same at the beginning of the experiment.
- 41a. The amount of energy that is passed on from one organism to the next decreases tremendously.
- 41b. Organisms along a food chain pass on much less energy than they receive. Thus, animals at the end of the food chain will not get enough/ will get little/ less energy to stay alive/ for life processes and will die if there are too many links.
- 42a. Leaf B. Leaf B has needle-like structurc.
- 42b. The needle-like structure of leaf B will help to reduce the amount of water it loses to its surroundings because it will have less stomata and to prevent it from gaining too much heat from the surrounding now that the exposed surface area is smaller. These ensure that the plant does not wither in the habitat that is very warm and dry.



- 43b. Air occupies.
- 44a. The guppies will die.
- 44b. The oil prevented oxygen from entering the tank. Without oxygen, the guppies died because living things need air to respire.
- 45a. Cobalt and aluminium.
- 45b. It is transparent. It allows one to be able to see the display inside the display units clearly.
- 45c. Tracing paper.
- 46. C and D. Blood vessels C and D transport blood from the other parts of the body to the lungs, the blood contains the carbon disxide given out by the other parts of the body during respiration to bring to the lungs.