NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 1 -- 2009
PRIMARY 6

SCIENCE

BOOKLET A

30 Multiple Choice Questions (60 marks)

Total Time for Booklets A and B : 1 hours 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

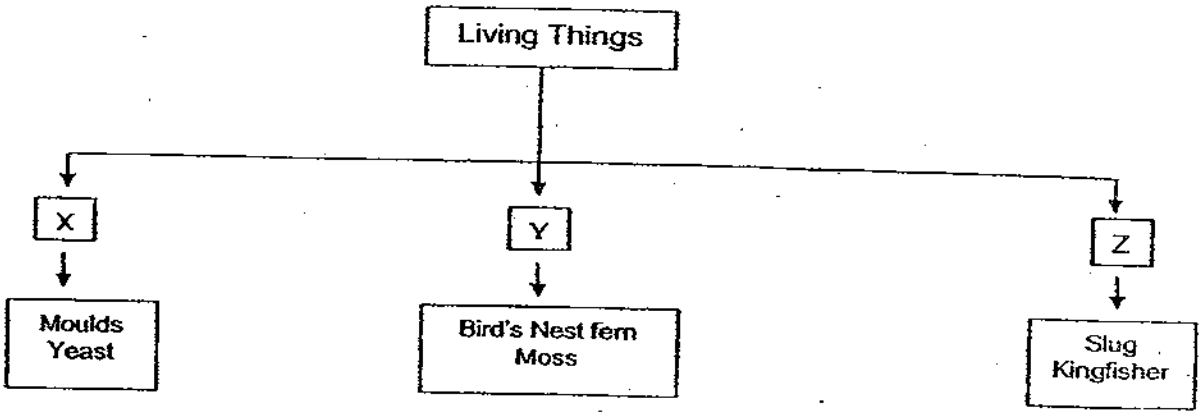
Booklet A	/ 60
Booklet B	/ 40
Total	/100

Name:_____( ) Class: P 6_____

Date : 14 May 2009 Parent's Signature:_____

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. The chart below shows how some living things can be classified.



Which of the following best represent X, Y and Z respectively?

	X	Y	Z
(1)	Plants	Fungi	Invertebrate
(2)	Fungi	Plants	Animals
(3)	Micro-organism	Fungi	Animals
(4)	Fungi	Micro-organism	Fish

2. Which of the following possess(es) chemical potential energy ?

A : Charcoal
B : Rotating windmill
C : Compressed spring
D : Peanut butter jam

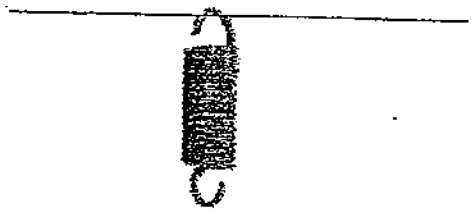
(1) B only
(2) A and D only
(3) A, C and D only
(4) A, B, C and D

3. Which of the following statements about a force is true?

A : It can speed up a moving object.
B : It can slow down a moving object.
C : It can change the shape of an object.
D : It can make a stationary object move.
E : It can change the direction of a moving object.

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

4. An experiment was conducted using a spring.

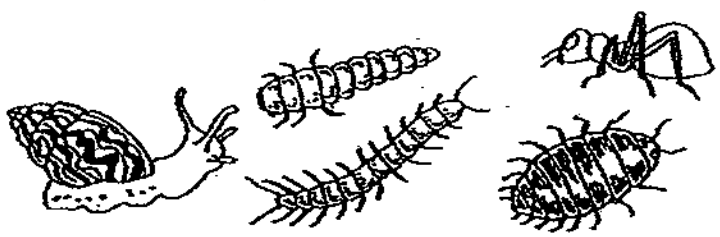


What would happen when a 50g- weight was added to the spring?

A : The spring would stretch.
B : The spring would increase in mass.
C : The 50g-weight would possess elastic spring force.

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

5. The following organisms were found at a particular habitat.



Which of the following factor(s) attracted these organisms to the same habitat?

A : Presence of food
B : Presence of water
C : Availability of shelter
D : Similar feeding habits

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

6. Isah made a study on two types of habitats and recorded her observations in the table below.

Observations	Habitat A	Habitat B
The pupas of mosquitoes were found.	✓	
Dragonflies were seen flying above the water surface.	✓	
Tigers were preying on monkeys.		✓
The habitat was dense, warm and humid throughout the day.		✓

Which one of the following best describes habitats A and B respectively?

	Habitat A	Habitat B
(1)	Leaf litter	Field
(2)	Swamp	Savanna
(3)	Seaside	Rotting Log
(4)	Pond.	Tropical rainforest

7. Which of the following are factors that may affect the survival of an organism?

A : Change in temperature

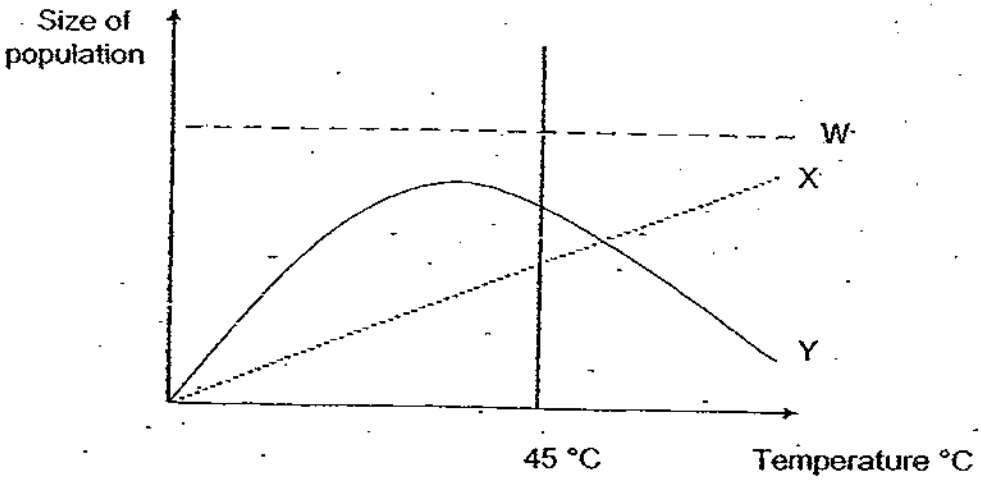
B : Change in light intensity

C : Decrease in water supply

D : Decrease in the availability of food

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

8. The line graph below shows the effect of temperature on the size of population of 3 different organism W, X and Y.



The population size of which organism(s) was <u>not negatively affected</u> by a temperature of above 45 °C?

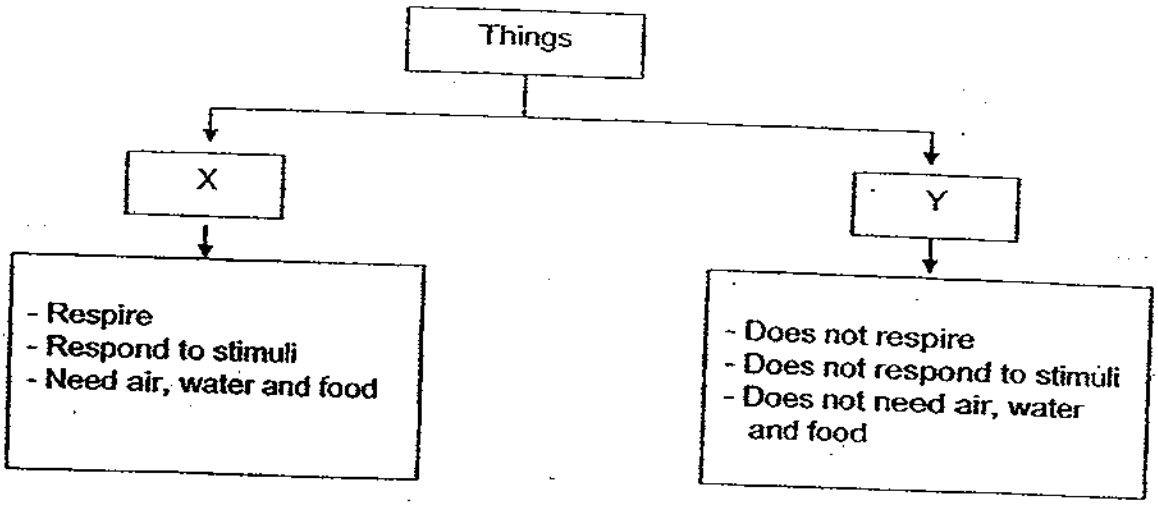
(1) W only
(2) Y only
(3) W and X only
(4) W, X and Y

9. The air we <u>exhale</u> _____.

A : contains water vapour
B : turns limewater chalky
C : has more oxygen than inhaled air

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

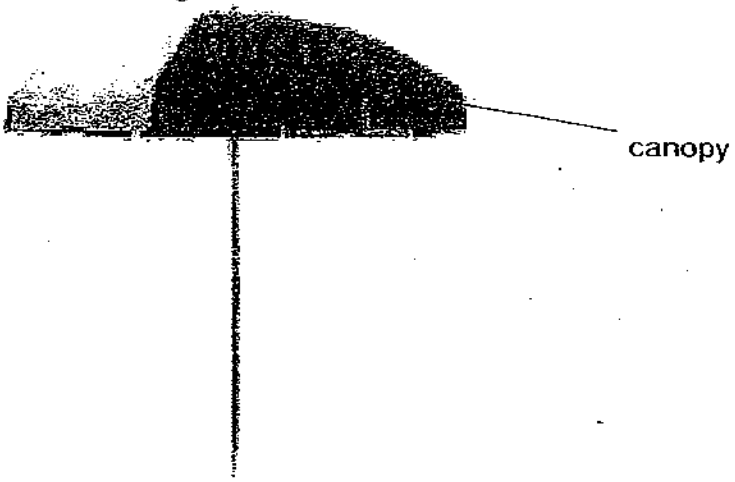
10. Study the characteristics of Group X and Group Y as shown below.



What is the best heading for Group X and Group Y ?

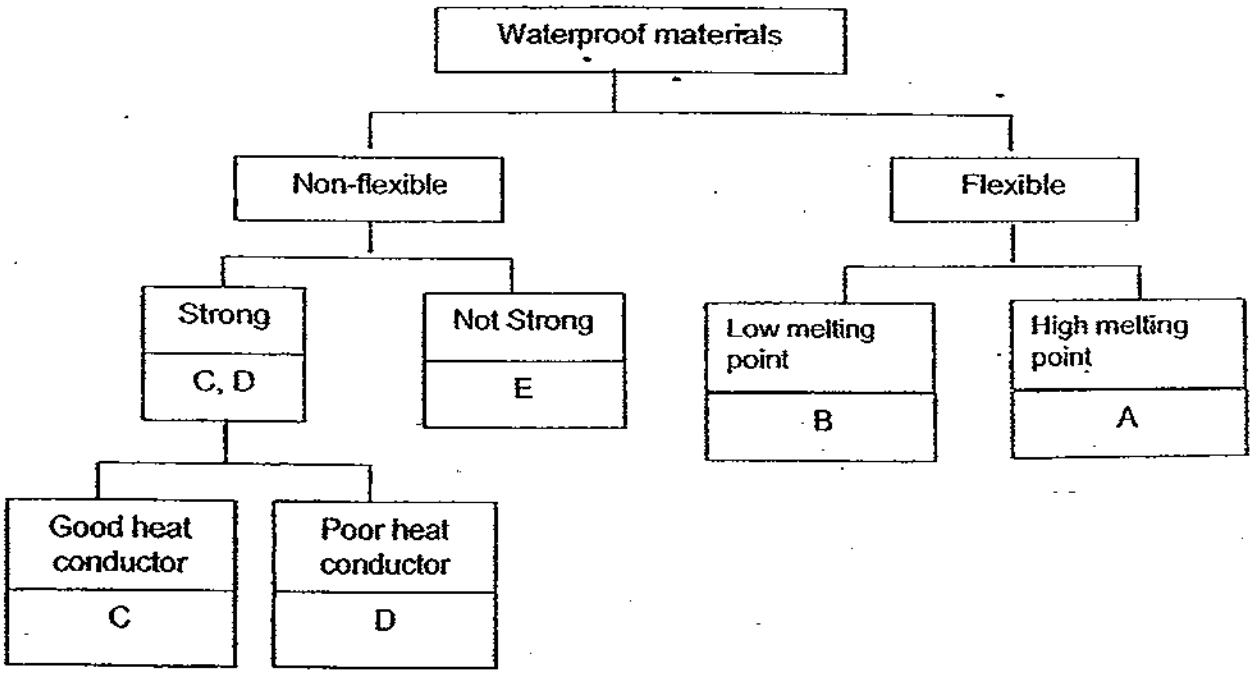
	X	Y
(1)	Metal	Non-Metal
(2)	Living	Non-Living
(3)	Plants	Micro-organisms
(4)	Natural materials	Man-made materials

11. Mr Tan wanted to select the best materials for making the canopy of a beach umbrella and a motorcycle helmet. He did not select the same material for making the items.



Beach umbrella

Helmet



Based on the classification chart above, which of the following shows the best choice for making the canopy of the beach umbrella and motorcycle helmet?

	Canopy of a beach umbrella	Motorcycle helmet
(1)	A	E
(2)	A	D
(3)	B	C
(4)	D	C

12. The table below shows how some objects have been classified based on a certain property.

X	Y
Gold pin	Plastic spoon
Silver spoon	Wooden comb

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

A : Objects in Group X are magnetic while objects in Group Y are non-magnetic.
B : Objects in Group X are opaque while objects in Group Y transparent.
C : Objects in Group X can be used as a switch in a circuit while objects in Group Y cannot be used as a switch in a circuit.

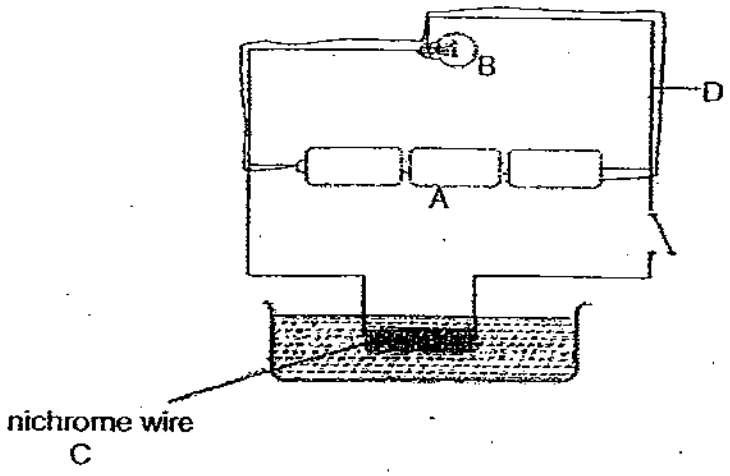
(1) A only
(2) C only
(3) A and B only
(4) B and C only

13. Which one of the following source of energy is classified wrongly?

Sources of energy	
Renewable sources	***Non-renewable sources***
Geothermal	Wind
Water	Coal

(1) Coal
(2) Wind
(3) Water
(4) Geothermal

14. Study the diagram below carefully.



Which one of the following options correctly states the main form of energy at A, B, C and D when the switch is open?

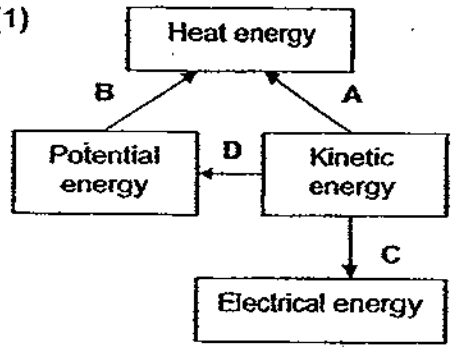
	A	B	C	D
(1)	Chemical potential energy	Light energy	Heat energy	Electrical energy
(2)	Electrical energy	Heat energy	Heat and light energy	Chemical potential energy
(3)	Chemical potential energy	No energy present	No energy present	No energy present
(4)	Chemical potential energy	Light energy	No energy present	Electrical energy

15. Study carefully the processes involving energy changes below.

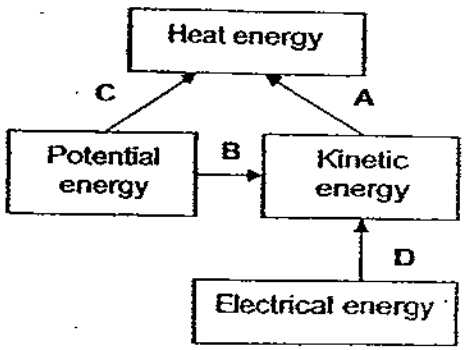
A : Burning firewood
B : Dropping a ball from a table
C : Rubbing the face with the hands
D : Using wind to spin a water wheel connected to an electric generator

Which one of the following diagram shows the energy conversion in the above processes correctly?

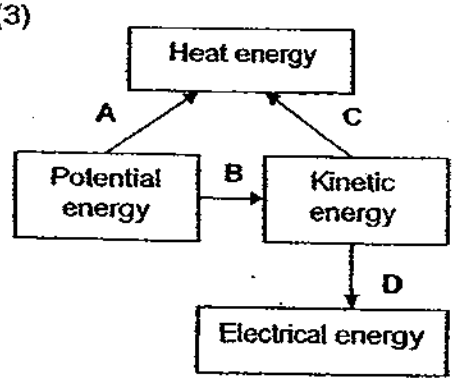
(1)



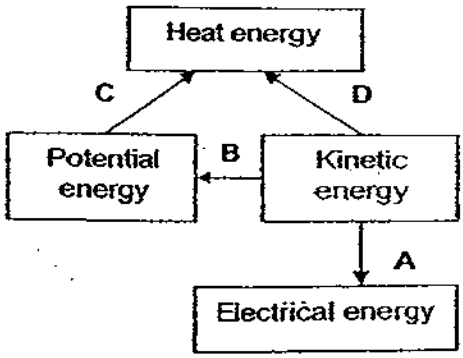
(2)



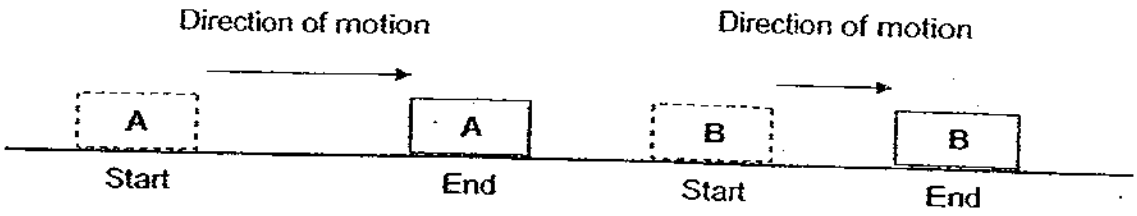
(3)



(4)



16.



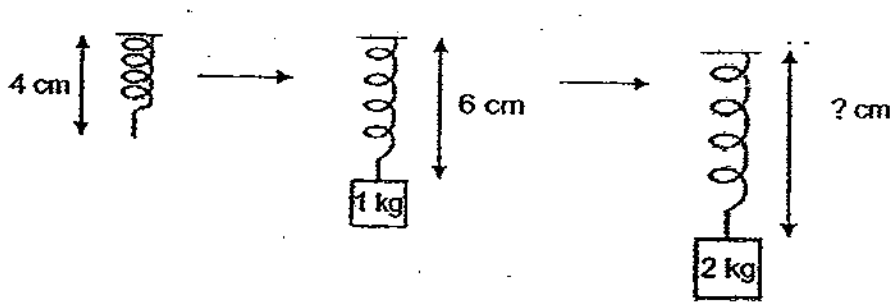
The diagram above shows two identical Blocks A and B of the same material being pushed along the same surface. Block B was observed to travel a shorter distance.

Which of the following(s) is/are <u>possible</u> explanation(s) for the observation?

A : Block B has greater mass than Block A.
B : Block A and Block B are moving on ice.
C : A layer of oil was spread below Block A.
D : A greater force was used to push Block A.

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

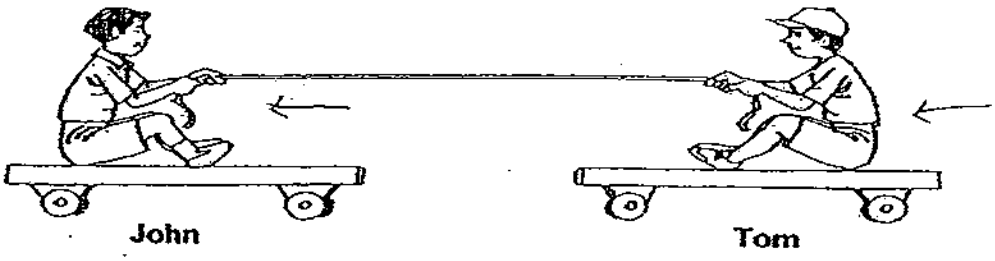
17. The diagram below shows how the length of a spring changes when a load of 1 kg is hung on it.



What will the <u>final length of the spring</u> be when a load of 2 kg is hung on it?

(1) 8 cm
(2) 10 cm
(3) 13 cm
(4) 15 cm

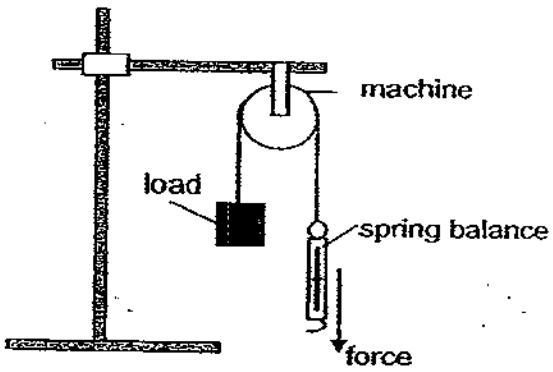
18. Two boys, John and Tom, of equal mass are sitting on two similar trolleys on level ground. They are holding a rope as shown in the diagram below.



Which one of the following will happen the moment John pulls the rope?

(1) Tom and John will move towards each other.
(2) Tom will move towards John who will remain still.
(3) John will move towards Tom who will remain still.
(4) Tom will move forward while John will move backward.

19. Study the diagram of a simple machine carefully.

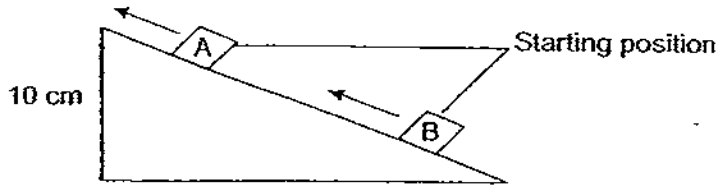


Which of the following force(s) is/are acting on the load?

A : Magnetic force
B : Gravitational force
C : Elastic spring force
D : Pulling force of the hand

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

20. Two identical wooden blocks, A and B, are being pulled up from different positions on an inclined plane. Block A moves up 3 cm and Block B moves up 3 cm.



Which of the following statements is true about the wooden blocks?

A : Block B needs more force to pull it up than Block A.
B : Block A and B need the same amount of force to pull them up.
C : Block A and B have the same amount of frictional force acting on it.
D : Block A and B have the same amount of gravitational force acting on it.

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

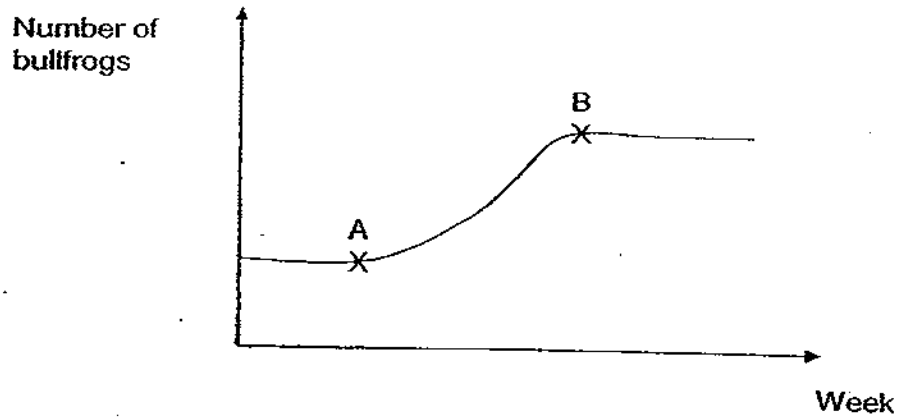
21. Luke studied about the leaf litter community in school. He set up four containers of leaf litter, W, X, Y and Z, of the same size and left them in 4 different places. The following table shows the condition in each container of leaf litter.

Container of leaf litter	Location	Temperature	Condition in the leaf litter
W	Under a saga tree	25°C	Damp
X	On a car park floor	30°C	Dry
Y	In a school field	36°C	Damp
Z	Beside a window	28°C	Dry

In which container do you think Luke will find the greatest number of populations of animals after two months?

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

22. The graph below shows the change in the population of bullfrogs near a pond.

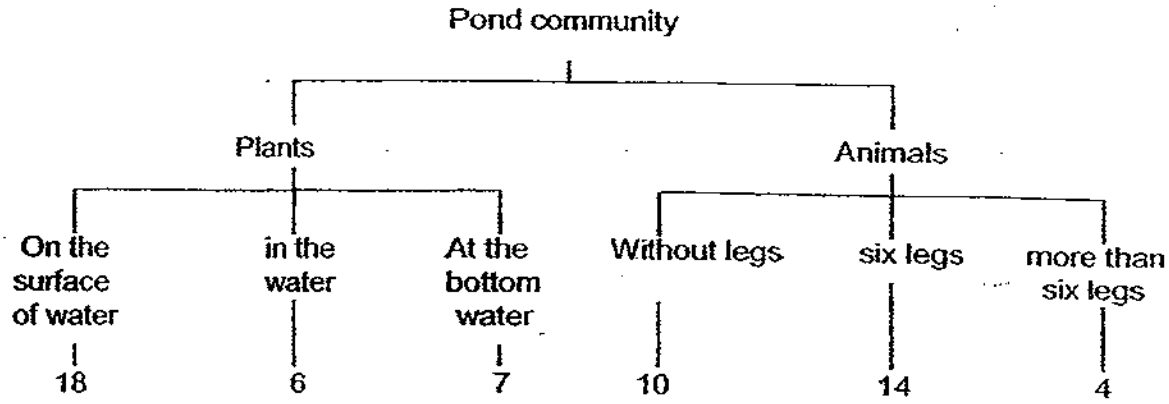


Which of the following events are possible causes for the change in the population of bullfrogs from point A to point B?

A : A great drop in the water level of the pond.
B : A great decrease in the number of fish in the pond.
C : A great decrease in the number of dragonfly nymphs in the pond.
D : A great decrease in the number of disease infecting organisms that kill the prey of the bullfrogs.

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

23. Some pupils made a study of the plants and animals found in their school pond by counting and recording the numbers down. They presented their findings in the classification chart below.

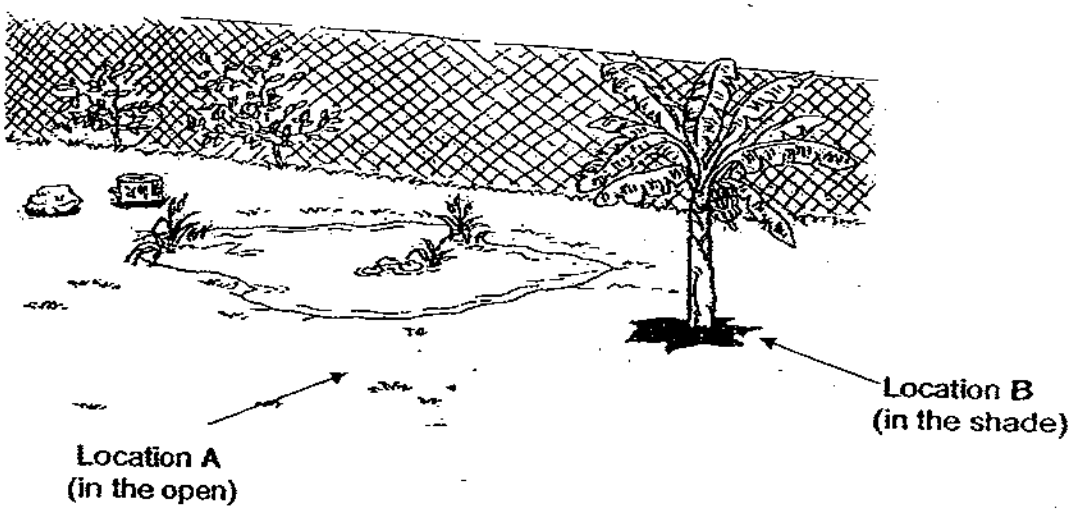


Which one of the following statements about the plants and animals are correct?

A: There is only one community in the pond.
B: Plants are found in different parts of the pond.
C: There are more insects than the sum of the all the other animals.
D: There are at least six population of plants and animals altogether.

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

24. Ali carried out an experiment as shown in the diagram below.



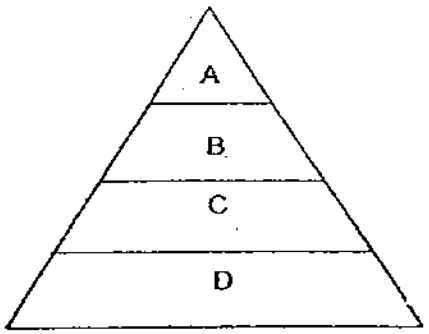
He collected some data on the amount of light and the amount of temperature from the two locations, namely A and B. The readings were recorded in the table below.

	Amount of light (lux)		Temperature (^{0}C)	
Time from start (seconds)	Location A	Location B	Location A	Location B
0	80 000	50 000	31.9	26
30	88 000	53 000	32	27.5
60	100 000	52 000	33	29

What is the aim of the experiment?

(1) To find out if the temperature will affect the amount of light received.
(2) To find out if the amount of light received will affect the temperature.
(3) To find out if the amount of light and the temperature will affect the rate of transpiration.
(4) To find out if the amount of light and the temperature will affect the rate of photosynthesis.

25. The diagram below shows the pyramid of numbers in an eco-system. A, B, C and D are the organisms living in it.



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

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

26. The following statements describe a food web. Which of the following food web best represents the description?

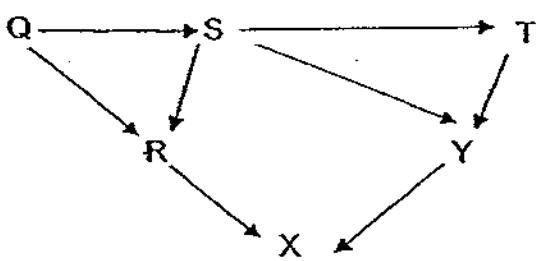
Q is a food producer.

R feeds on S.

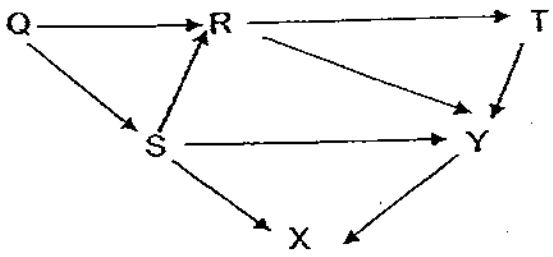
T and S are eaten by Y.

X feeds on R and Y.

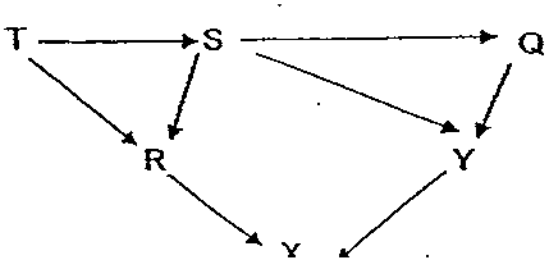
(1)



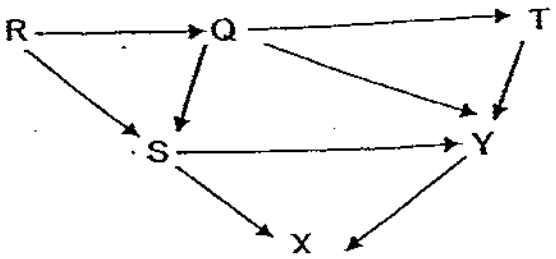
(2)



(3)



(4)



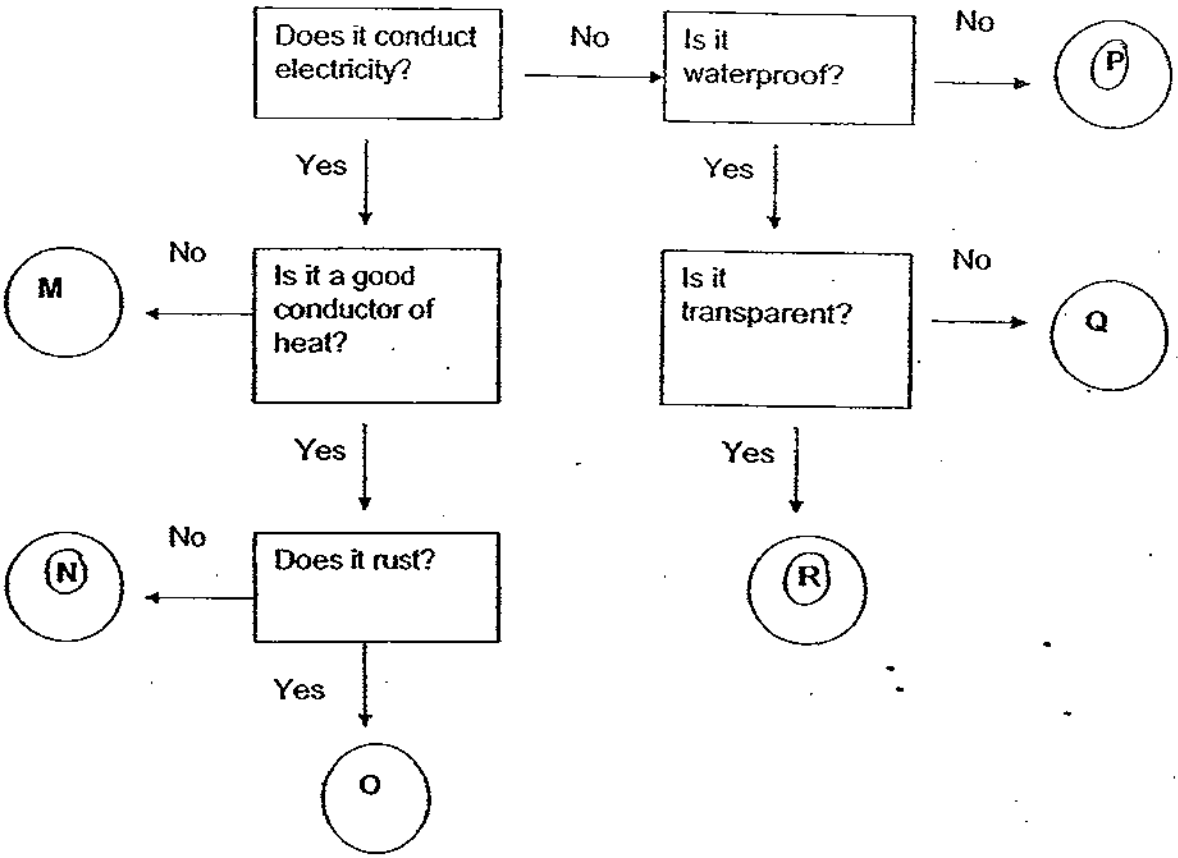
27. Study the classification table on animals below.

Animals		
A	B	C
ant	eel	seal
bee	stingray	walrus
dragonfly	seahorse	whale

Which one of the following best represent A, B and C respectively?

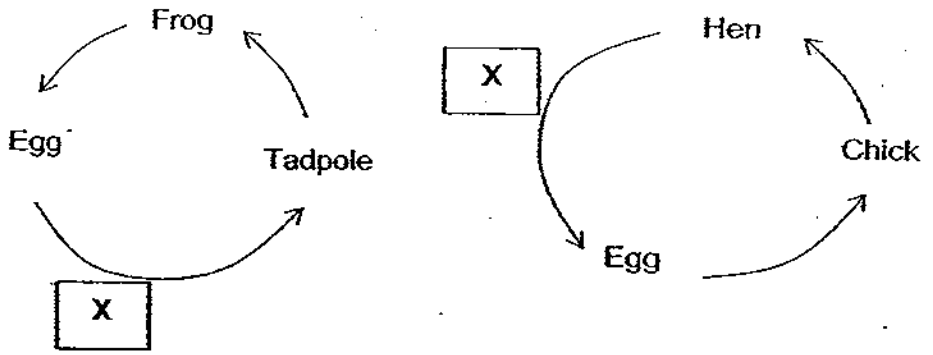
	A	B	C
(1)	insect	reptile	mammal
(2)	reptile	mammal	insect
(3)	insect	fish	mammal
(4)	mammal	reptile	fish

28. Study the flow chart about materials carefully.



	N	P	R
(1)	silver ring	sponge	windscreen
(2)	hair clip	drinking straw	umbrella
(3)	screw	sock	spectacle lense
(4)	paper clip	boot	raincoat

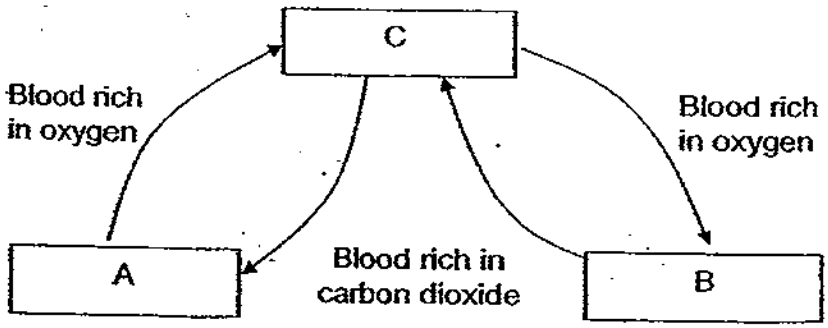
29. The diagrams below show the life cycle of a frog and a hen.



What is the process that must occur at X in order to develop to the next stage of the life cycle?

(1) Pollination
(2) Fertilisation
(3) Mating
(4) Moulting

30. Study the diagram of the different systems in a body.



Which one of the following below represents A, B and C correctly?

	A	B	C
(1)	Lungs	Heart	Other parts of the body
(2)	Heart	Other parts of the body	Lungs
(3)	Lungs	Other parts of the body	Heart
(4)	Other parts of the body	Heart	Lungs

NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 1 – 2009
PRIMARY 6

~~MATHEMATICS~~
SCIENCE
BOOKLET B

16 Open-ended questions (40 marks)

Total Time for Booklets A and B : 1 hours 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

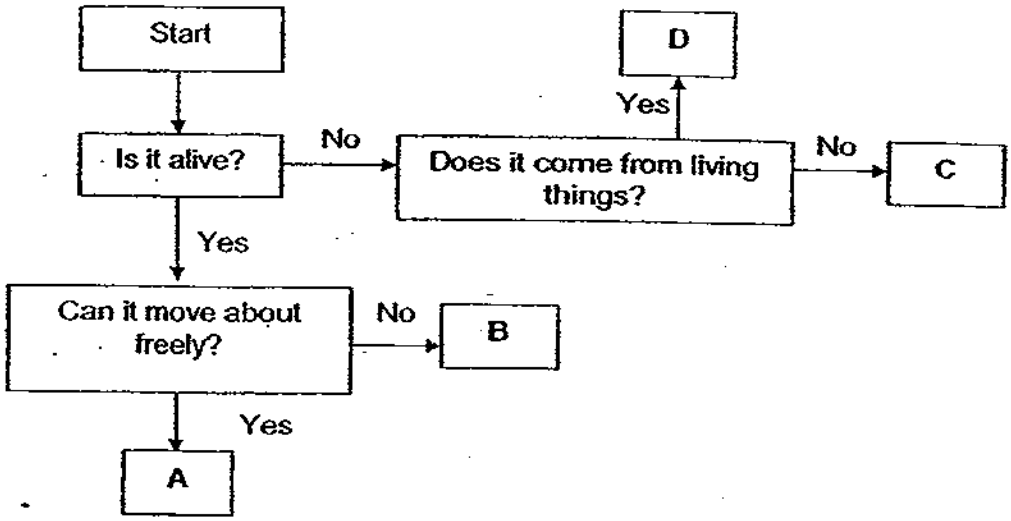
Section B		/40

Name: _____ ( ) Class: P 6 _____

Date : 14 May 2009 Parent's Signature: _____

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. Study the flow chart below.

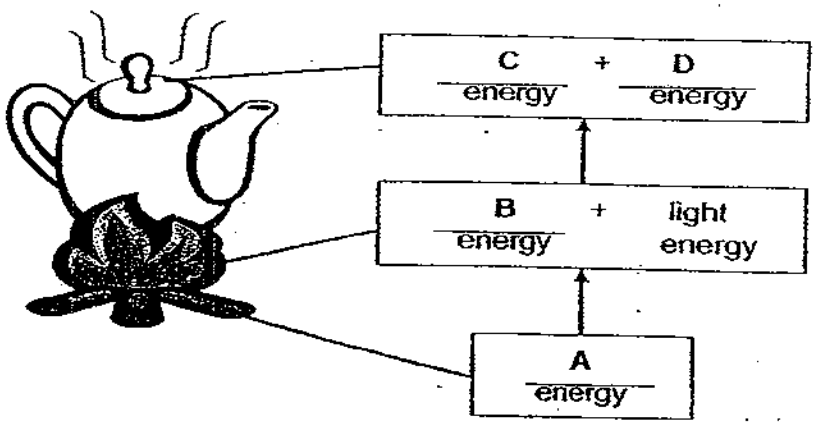


Based on the flow chart above, complete the table below by writing A, B, C and D in the boxes. [2]

Book	
Balsam Plant	
Thermometer	
Salmon	

Score	/ 2

32. Jun Meng put a pot of water over some burning wood. After some time, the water began to boil and he heard the lid of the pot rattling.



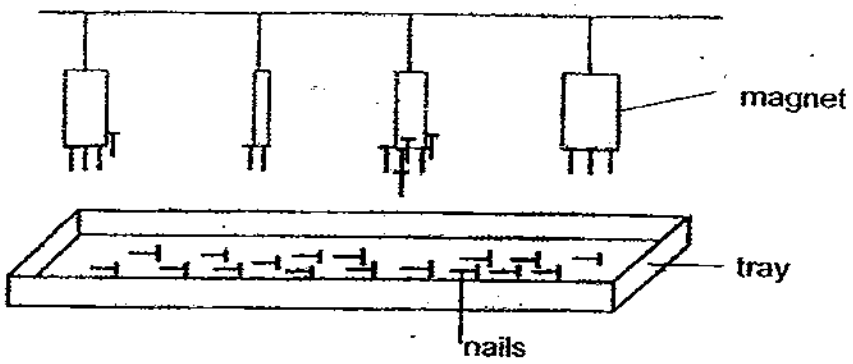
Write down the correct forms of energy in the blanks below. [2]

A	B	C	D
_____ energy (Wood)	_____ energy (Fire)	_____ energy (Rattling lid)	_____ energy (Rattling lid)

Score	2

33. Ali conducted an experiment to find out about the magnetic strength of magnet. He hung four bar magnets at the same distance away from a tray of evenly spread iron nails.

The result of his experiment is shown in the diagram below.



(a) Name the type of force that causes the nails to move towards the magnet. [1]

_____

(b) What conclusion can Ali draw from his result? [1]

_____

_____

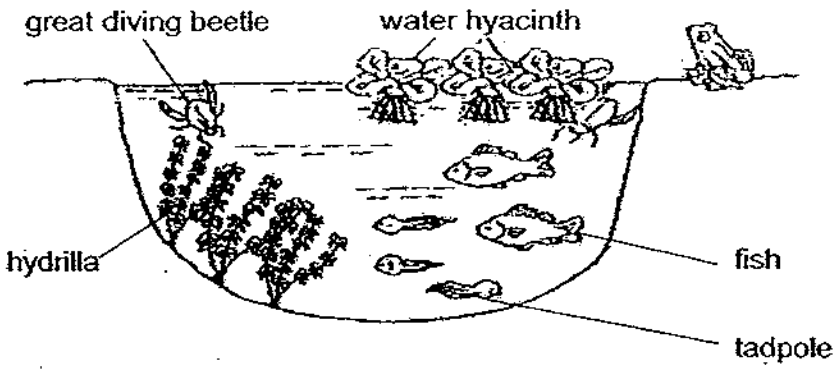
(c) **Based on the experiment**, which of the following statement(s) is/are true? (Indicate the true statements with a letter "T" in the boxes) [1]

i) The nails are made of magnetic material ☐

ii) Magnetism can pass through non-magnetic material ☐

Score	/ 3

34. The diagram below shows a pond community.



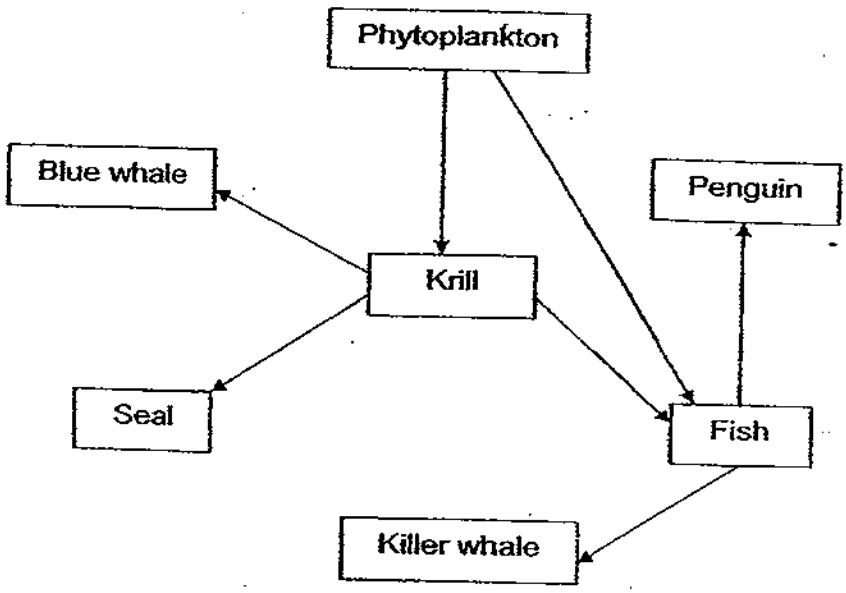
(a) State the interdependence of the fish and the hydrilla in this pond community. [1]

(b) Why will a sudden great increase in the population of water hyacinth lead to a decrease the population of hydrilla? [1]

Score	
	2

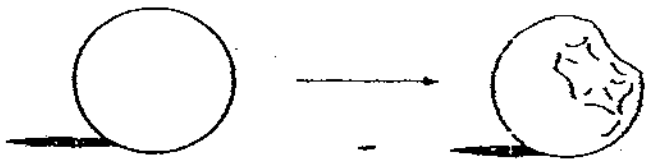
35. The food web shown below is incomplete. Draw additional **four arrows** to complete the food web **based on the information** given in the table below. [2]

Animals	Diet
fish, seal, blue whale, penguin	krill
killer whale	seal
killer whale, seal, penguin	fish
killer whale	penguin
fish, krill	phytoplankton



Score	
	2

36. A table tennis ball became dented after it was deliberately squeezed.



Original shape and size of table tennis ball

After the table tennis ball was squeezed

(a) What happened to the air inside after the table tennis ball was dented? [1]

_____

_____

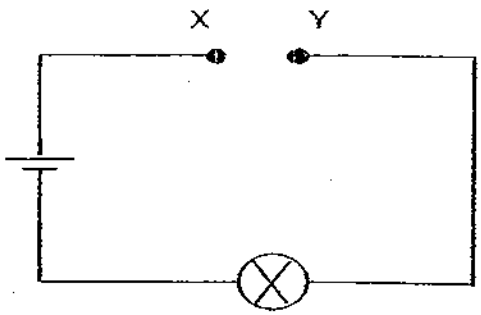
(b) Write down one other property of air. [1]

_____

_____

Score 2

37. Danny used two objects of different materials A and B to close point X and Y on the circuit as shown in the diagram below.



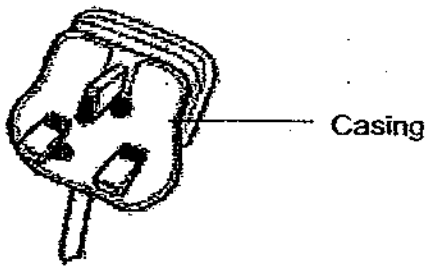
The observations are recorded in the table below.

Material	Observation
A	Bulb lighted up
B	Bulb did not light up

(a) Based on the experiment above, write down one characteristic of Material A that enables the bulb to light up. [1]

_____

_____



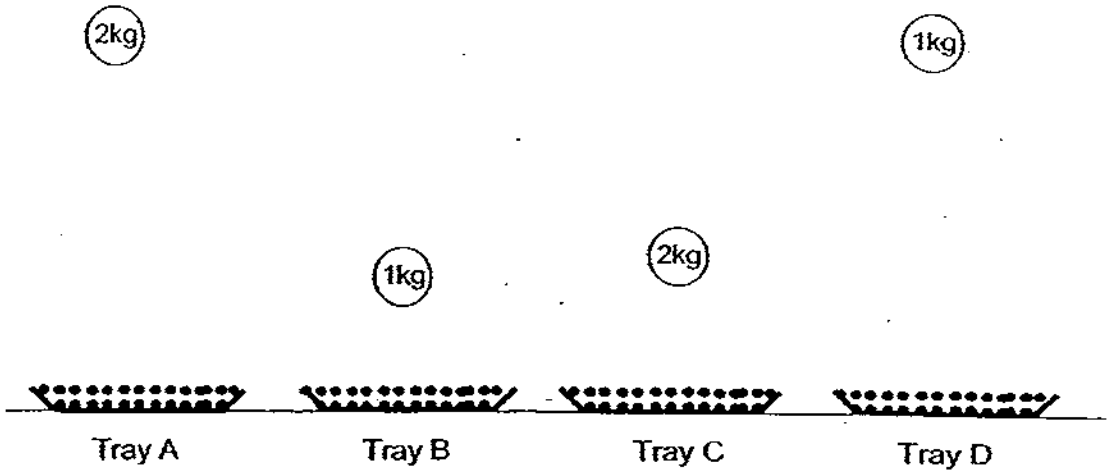
(b) Which material, A or B, should be used to make the casing of a plug to ensure safety? Give a reason for your choice. [2]

_____

_____

Score	
	3

38. John dropped 4 balls of the same size but of different masses onto 4 trays of fine sand. The balls were dropped from different heights as shown in the diagram below.



(a) Arrange from the smallest to greatest the depths of the depression formed in the sand trays when the balls were dropped. [1]

Tray _____	Tray _____	Tray _____	Tray _____

smallest greatest

(b) What can you conclude about the gravitational potential energy of an object based on your answer in (a)? [2]

_____

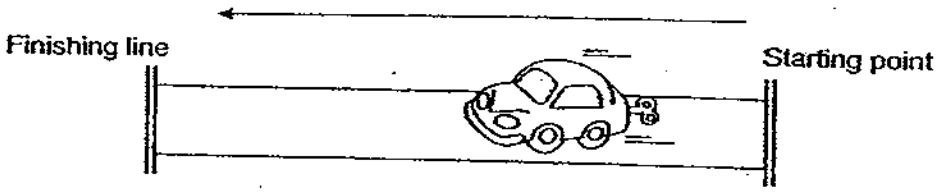
_____

_____

Score	
	3

39. Xiao Wen carried out an experiment by placing a wound-up toy car at the same starting point on two different surfaces. She observed the toy car reaching the finishing line on each type of surface.

Type of surface
A ceramic tile
A thick woollen carpet



(a) Name the energy that is used to move the car. [1]

_____

(b) Complete the table with the correct type of surface (ceramic tile or thick woollen carpet) based on the data collected as show in the table below. [1]

Type of surface	Time taken for the toy car to reach the finishing line (seconds)			
	1st attempt	2nd attempt	3rd attempt	Average
(i) _____	55	51	54	53.3
(ii) _____	40	45	43	42.7

(c) Explain your answer in part (b). [2]

_____

_____

_____

_____

Score	
	4

40. Weights were hung progressively to two springs X and Y to determine their degree of elasticity. The table shows the result of the experiment.

Weights attached	Length of spring X (cm)	Length of spring Y (cm)
0	(?)	12
20	12	14
40	15	16
60	18	18

(a) What is the original length of spring X? [1]

_____

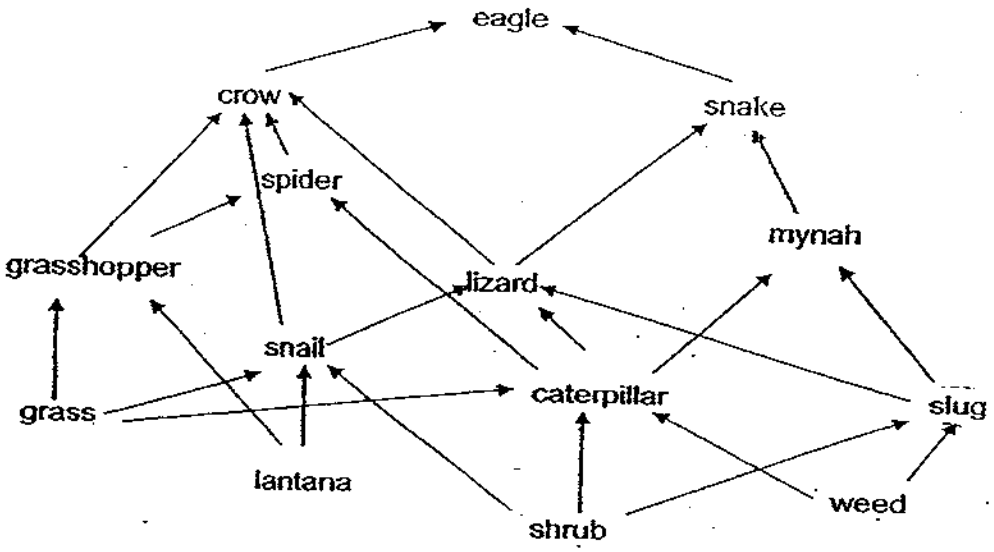
(b) Which spring is more elastic? Explain your answer clearly. [1]

_____

_____

Score	
	2

41. The food web below shows a field community.



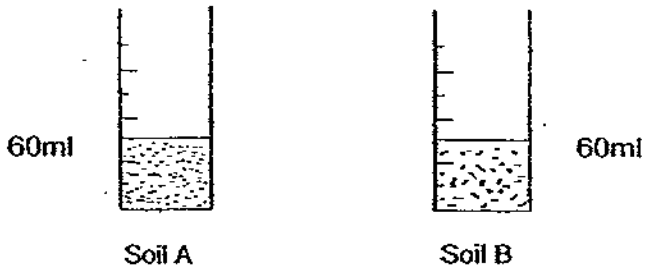
(a) List the food sources of the slug. [1]

(b) How many carnivores are there? [1]

(c) Write a 4-link food chain based on the food web provided above. [1]

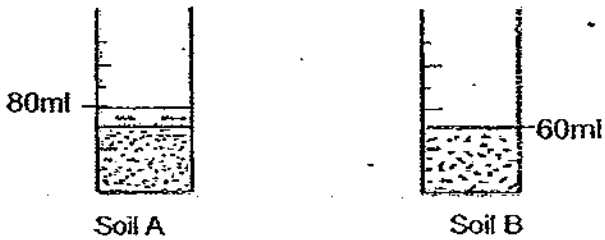
Score	3

42. David poured the same amount of each type of soil A and B, into each of the 2 measuring jars shown below.



David poured 30 ml of water into each of the 2 jars at the same time.

The diagrams below show the results of the 2 set-ups after the water was poured into each jar of soil.



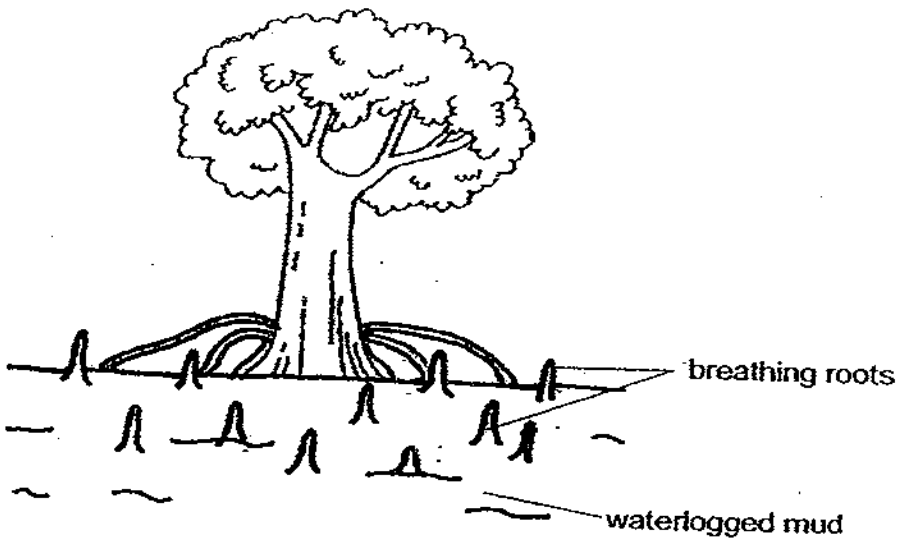
(a) Give a reason why the water did not rise above the soil level in the jar which contains Soil B. [1]

_____

_____

Score 1

42. The plant shown below has adapted to the living condition in the swamp. It has breathing roots which stick out of water.



(b) Which soil sample (Soil A or B) is the plant shown in the picture more likely to be growing in? Explain your answer clearly. [2]

_____

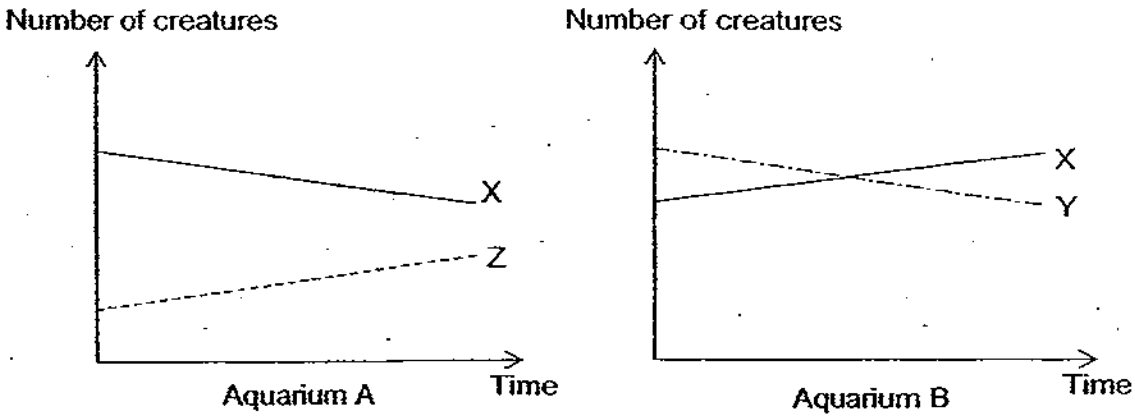
_____

_____

Score	
	2

43. Jill caught two different types of creatures, Y and Z from a pond and she put them into two existing aquariums, which contain creature X and some plants.

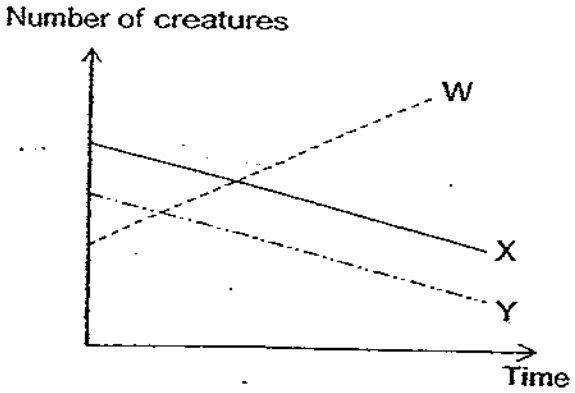
She counted the number of creatures in the aquarium every week for a month. She did not see any dead animals in both aquariums. Her results are as shown in the graphs below.



(a) Draw a food chain in the box below to link these three animals. [1]

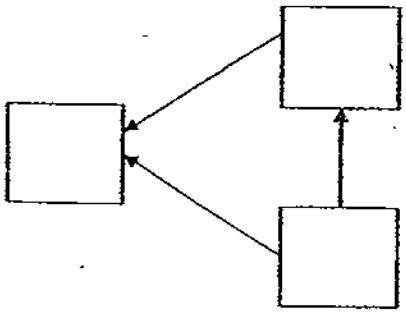
Score	
	1

43. Jill decides to introduce another creature, W, into aquarium B. She recorded the number of creatures over a period of one month. She did not observe any dead animals in the aquarium.
Her results are shown in the graph below.



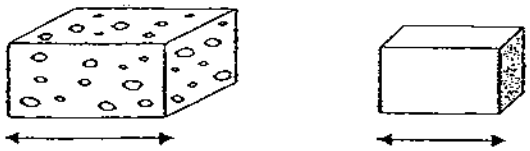
Aquarium B

(b) Complete the food web below with organisms X, Y and W. [1]



Score	1

44. The diagrams show a box and a piece of sponge much bigger than the box.

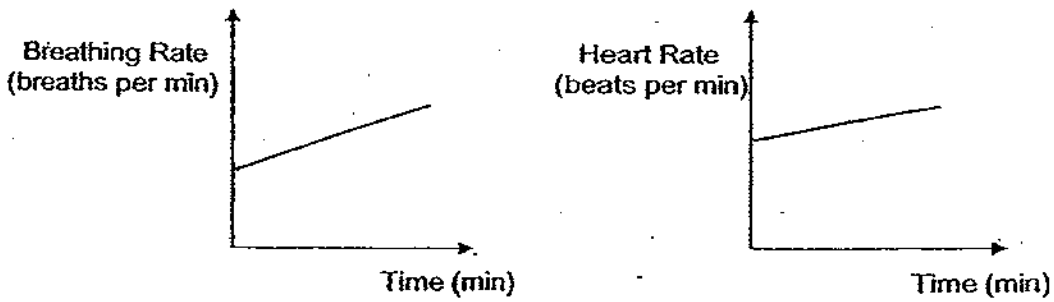


Can the sponge be placed entirely into the box? Explain your answer. [2]

_____

_____

45. Dawn was asked to jog for 3 minutes. Her breathing and heart rates were measured during the 3 minutes of jogging. After that, she used the data to plot the graphs as shown below.



(a) Based on the graphs above, what is the relationship between the breathing rate and heart rate? [1]

_____

_____

(b) Explain why the breathing rate increases during a vigorous activity. [2]

_____

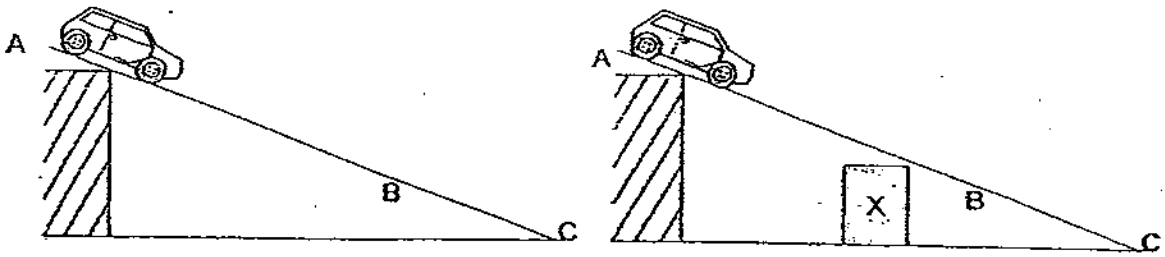
_____

Score	5

46. A toy car, made of steel, was released at A of a wooden ramp. The time taken for it to move from A to B and then from B to C was taken.

The same experiment was then repeated with object X placed under the ramp.

The set-ups for both experiments are as shown below.



The table below gives the time taken for the toy car to travel from A to B and from B to C.

	Time taken (seconds)	
	A to B	B to C
Experiment 1	15	5
Experiment 2	11	9

(a) Based on the information above, what was object X likely to be? [1]

_____

(b) Give a reason for the longer time taken for the toy car to travel from B to C in Experiment 2 as compared to Experiment 1. [1]

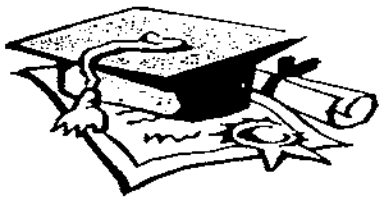
_____

_____

_____

End of Paper

Score	
	2

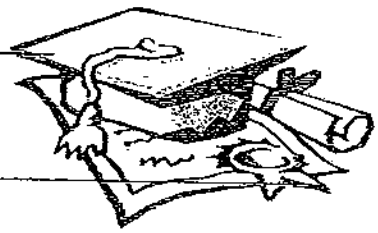


ANSWER SHEET

EXAM PAPER 2009

SCHOOL : NAN HUA PRIMARY SCHOOL
SUBJECT : PRIMARY 6 SCIENCE

TERM : SA 1



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

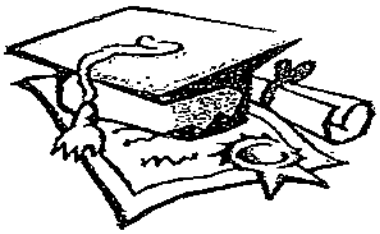
Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
1	4	3	1	2	4	2	1	1	3	1	2	3

31)D, B, C, A

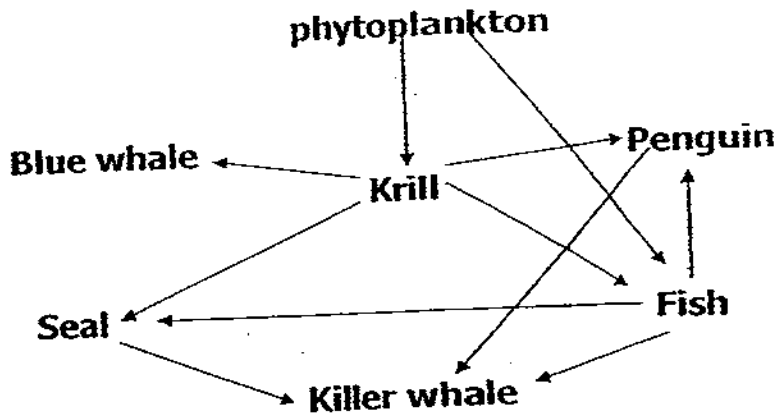
32)A: Chemical potential B: Heat C: Kinetic D: Sound

33)a)The magnetic force of attraction.
b)The magnetic strength of a magnet does not depend on the size of the magnet.
c)i)T

34)a)The fishes are dependent on the plants for oxygen. The hydrilla is dependent on the fishes to produce carbon dioxide for photosynthesis.
b)The water hyacinth take up the space on the water surface, so little sunlight will be able to reach the hydrilla so the hydrilla cannot make food and the population will decrease.



35)



36)a)It was compressed.
b)Air has no fixed shape.

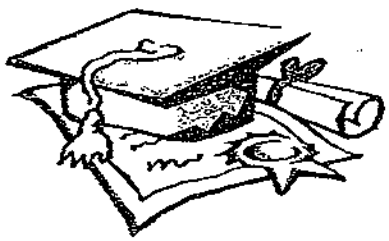
37)a)It can conduct electricity.
b)Material B. Material B does not conduct electricity so it will help to reduce the chances of being electrocuted.

38)a)B, C, D, A
b)The greater the mass and the higher the ball is dropped, the greater the amount of gravitational potential energy the object has.

39)a)Elastic potential energy.
b)i)A thick woollen tile. ii)A ceramic tile.
c)There is more friction between the thick wollen carpet and the wheel of the car so it will take a longer time for the car to reach the finishing line. On the other hand, there is lesser friction between the ceramic tile and the wheel of the car so it will take a shorter time for the car to reach the finishing line.

40)a)9cm.
b)Spring X extended more than spring Y after every 20 weight are attached to them.

41)a)The shrub and weed.
b)There are 6 carnivores.
c)Grass→Grasshopper→Crow→Eagle

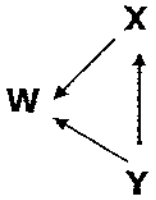


42)a)Soil B contains air space between soil particles and water occupies these space. (Soil B is porous and water flows into it.)

b)Soil A as Soil A has little or no air spaces, thus water cannot flow through so the water stays above the soil.

43)a)Y→X→Z

b)



44)Yes, the sponge contains air spaces and air can be compressed so it can be sqeezed into the box.

45)a)The faster the heart rate, the faster the breathing rate.

b)More oxygen is needed for respiration as more energy will be needed for a vigorous activity.

46)a)A magnet.

b)The magnet is trying to attract the toy car causing it to slow down in Experiment 2.