NAN HUA PRIMARY SCHOOL
MID-YEAR EXAMINATION 2006
SCIENCE
PRIMARY 6

Name : _____( ) Marks : _____/100

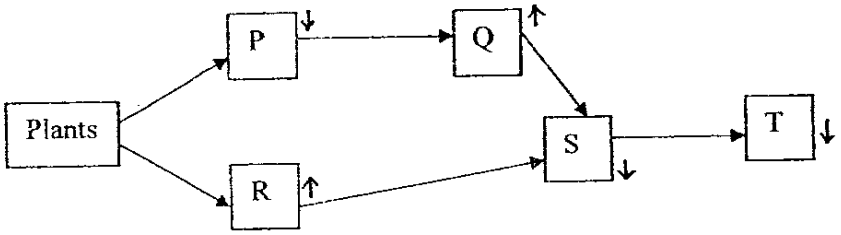
Class : Primary 6 _____ Parent's signature

Date : 11 May 2006

Duration : 1h 45min _____

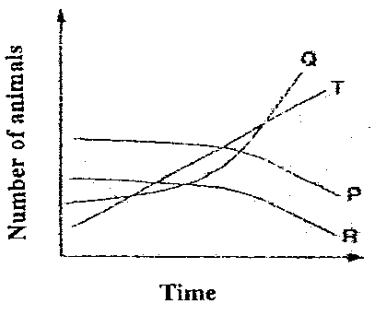
Section A (30 X 2 marks)
Choose the correct answer for each questions and shade its number in the Optical Answer Sheet (OAS) provided.

1. Study the food web below. P, Q, R, S and T are animals.

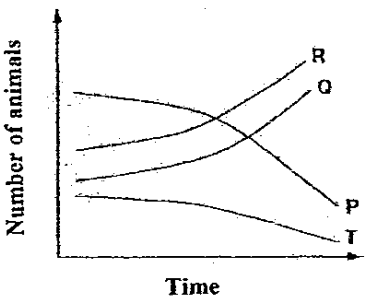


Which one of the following graphs shows how the populations of P, Q, R and T are likely to be affected if there is a decrease in the population of S in a habitat?

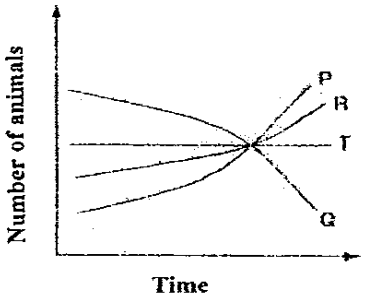
(1)



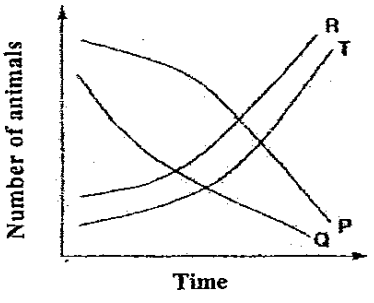
(2)



(3)

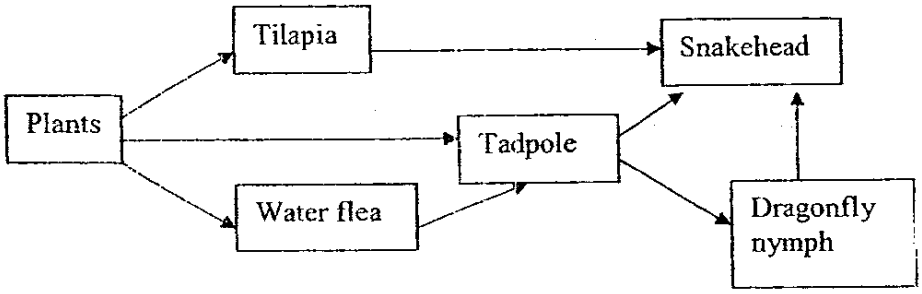


(4)



25.

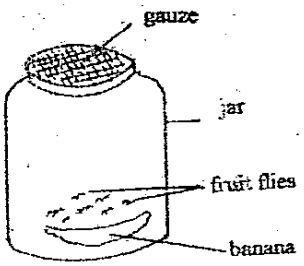
2.

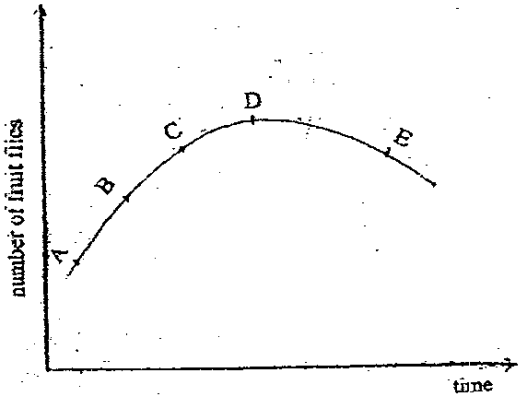


Study the food web above. How many food chains **end with the snakehead**?

(1) 6
(2) 5
(3) 3
(4) 4

3. Some fruit flies were kept in a jar. The number of fruit flies were counted and recorded as shown in the graph.





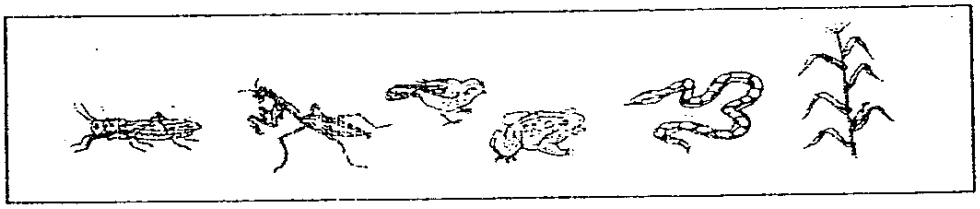
What might have happened at D?

A The banana was all eaten up.
A. B A lizard was introduced to the jar.
B. C More bananas were added to the jar.

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

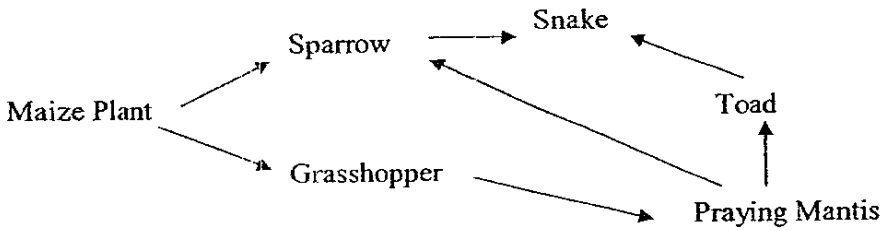
16.

4. Several food webs can be formed from the following living things.

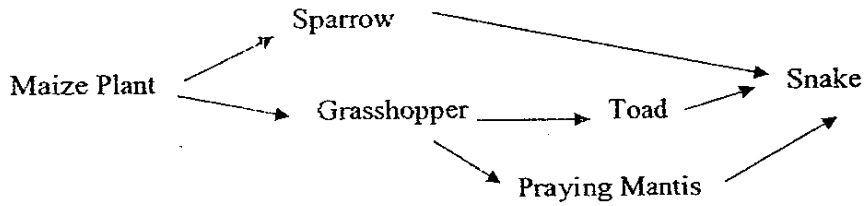


Which of the following food webs are **correct**?

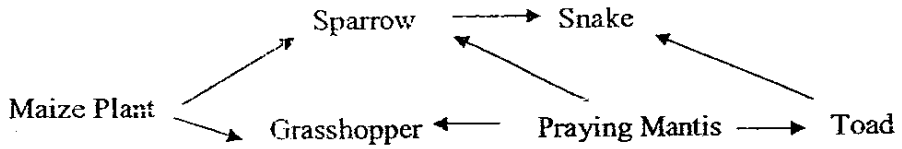
A.



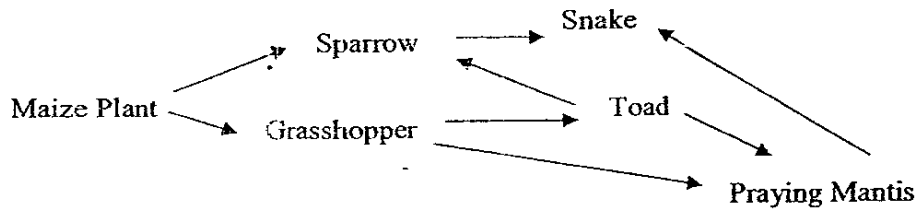
B.



C.



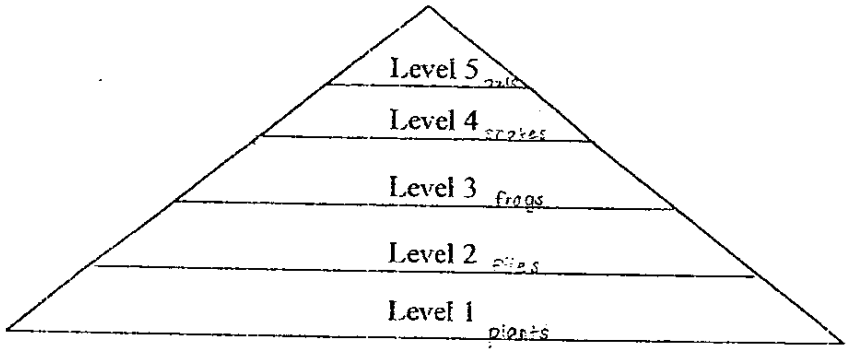
D.



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

27.

5.



The food pyramid above shows how frogs, flies, owls and snakes interact with one another. It is made up of five levels with the plants at the base of the pyramid.

Which animals should be placed at Level 2 and Level 4 of the food pyramid respectively?

	Level 2	Level 4
(1)	frogs	flies
(2)	frogs	owls
(3)	snakes	frogs
(4)	flies	snakes

6. May sprayed some water onto 3 lumps of cooked rice and left them on a table. After a week, she came up with the following conclusions:

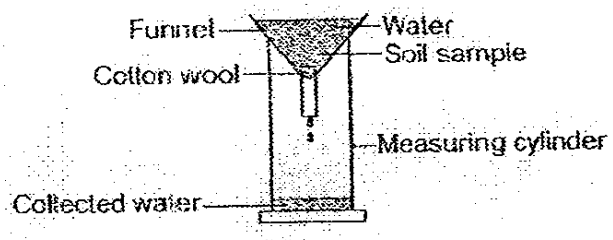
A. Bacteria and fungi grew on the lumps of cooked rice.
B. Food that is exposed will go bad.
C. The cooked rice broke down into simpler substances.
D. Decomposers needed carbon dioxide, water and warmth to live. (oxygen)

Which of the above conclusions are **true**?

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

28.

7. Janice wants to carry out a fair test to find out how fast water can pass through four different kinds of soil. She sets up the experiment as shown in the diagram below. She uses a stopwatch to measure the time taken for the water to pass through each kind of soil.



She records her findings in the table below.

Kind of soil	A	B	C	D
Time taken (seconds)	33	23	45	18

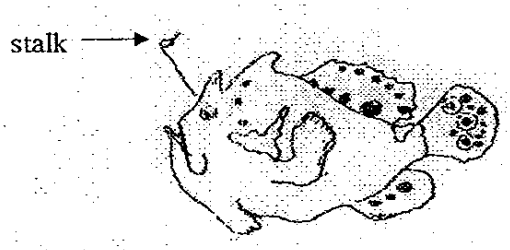
In which type of soil would you find the **cactus plant** growing in?

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

8. The following table shows the conditions at different depths in the ocean.

Ocean Zone	Depth (m)	Conditions
Sunlight Zone	0-200	Warm and bright
Twilight Zone	200-1000	Cold and dim
Dark Zone	1000-4000	Very cold and dark
Abyss	4000-6000	Very cold and pitch dark

The angler fish shown below has a stalk on its head that emits light. The light attracts prey for the angler fish to eat.



From the above information, what is the minimum depth at which the angler fish would be expected to live?

(1) 100m (2) 200m
(3) 1000m (4) 6000m

29.

9. The table below shows some materials classified under three different groups.

Group A	Group B	Group C
Leather	Cotton	Metal
Feathers	Wood	Glass

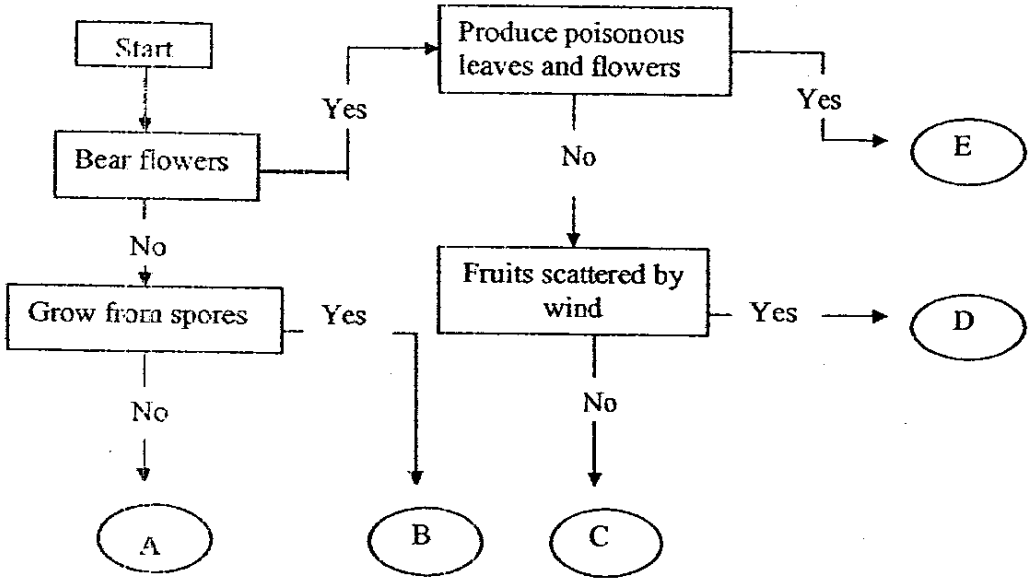
'X' is a material which can be placed in Group B. Which of the following is 'X'?

(1) Clay (2) Shell

(3) Plastic (4) Rubber

4

10. Study the flow chart below carefully.



Which set of exit points matches correctly each of the given plants in the table below?

	Money Plant	Bird's Nest Fern	Angsana	Allamanda	Rambutan
(1)	C	E	A	D	B
(2)	A	B	D	E	C
(3)	B	D	E	C	A
(4)	D	C	A	B	E

30.

11. Three plants K, L and M, with different ways of dispersing their seeds, were planted on a piece of land as shown in Figure (A)

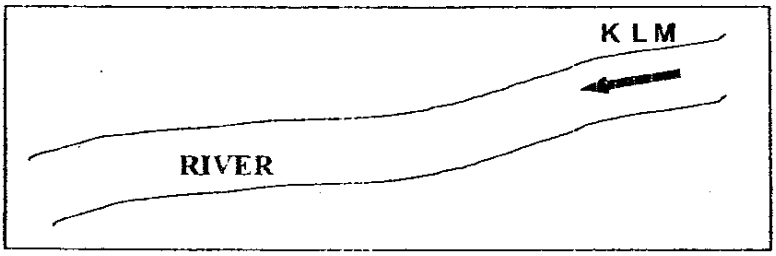


Figure (A)

After a few years, more of the three plants were found as shown in Figure (B).

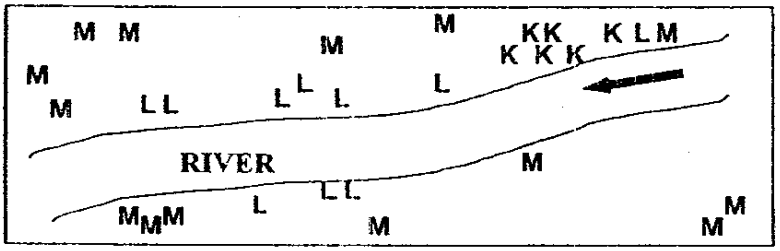


Figure (B)

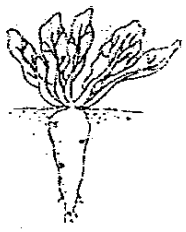
Which of the following sets of plants are K, L and M **most likely** to be?

explosive water animals/wind

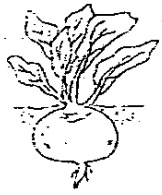
	Plant K	**Plant L**	**Plant M**
(1)	Angsana	Mangrove	Rain Tree
(2)	Rubber	Coconut	Love Grass
(3)	Balsam	Lallang	Mango
(4)	Mimosa	Pong Pong	African Tulip

12. Which of the following **does not belong** to the same method of reproduction?

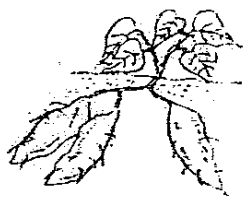
1)



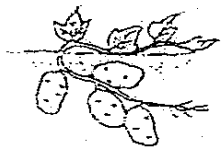
2)



3)

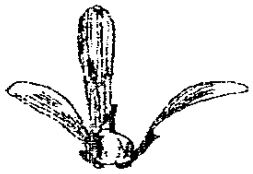


4)



31.

13. Sufen dropped two shorea fruits, X and Y, as shown below, from the same height and measured how long both stayed "afloat" in the air.



Shorea Fruit X

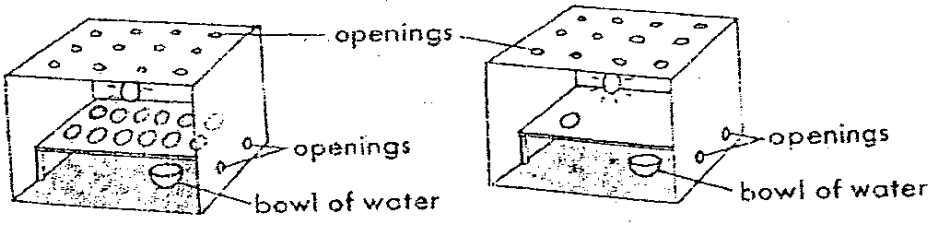
Shorea Fruit Y

Which of the following are most likely **correct**?

	Duration Fruit X was 'afloat'	Duration Fruit Y was 'afloat'
A	4.3 seconds	5.6 seconds
B	5.5 seconds	4.5 seconds
C	6.5 seconds	6.5 seconds
D	7.2 seconds	5.5 seconds

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

14. Study the two incubators as shown below. Twelve eggs were put in incubator X and one egg in incubator Y.



Incubator X

Incubator Y

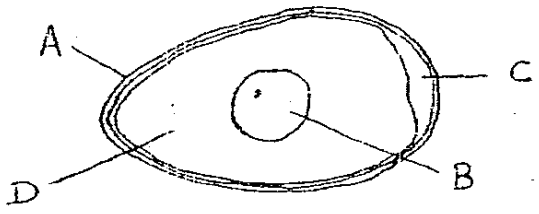
After twenty one days, the egg in incubator Y hatched into a lovely chick but the twelve eggs in incubator X did not hatch. What are the possible reasons that the twelve eggs **did not hatch**?

A. The temperature in incubator X was too low.
B. Incubator X was overcrowded.
C. There is too much water in the bowl in incubator X.
D. The twelve eggs were not fertilised.

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

32.

15.



In the diagram shown above, which part/parts provides/provide food for the growing embryo?

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

16. The table below shows two household pests.

Characteristics	Animal A	Animal B
Has wings	Yes	No
Number of legs	6	4
Life cycle	3 stages	2 stages
Lay eggs	Yes	No
Food	Waste food	Waste food

Animals A and B are likely to be _____ **respectively.**

(1) housefly and mouse
(2) cockroach and rat
(3) mosquito and lizard
(4) termite and ant

17. The diagrams below show a silverfish and its young.

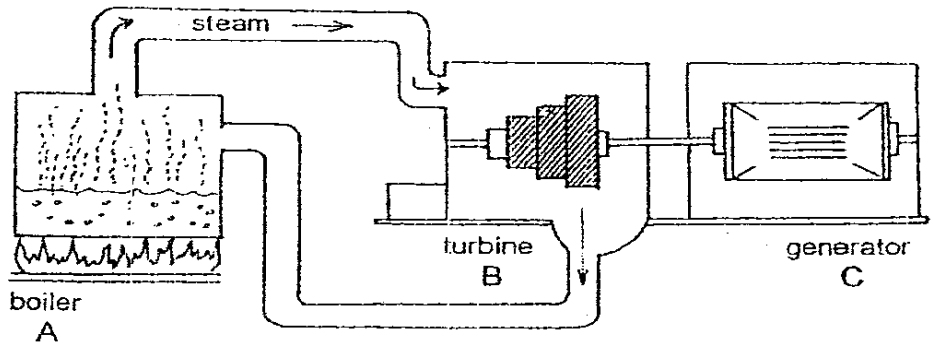
Which of the following statements about the silverfish are **correct**?

A. It is an insect.
B. Its young is called a wriggler.
C. It has a similar life cycle as a grasshopper.

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

33.

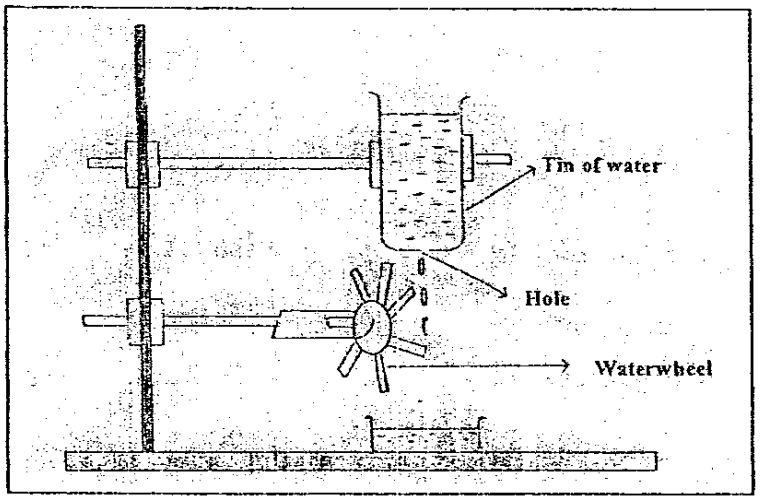
18.



The above diagram shows a simplified version of a power station. The table below shows the energy conversion for each part of the power station. Which one **correctly** describes the energy conversion relevant in the process of generating electricity at the power station?

	Part of Power Station	Energy Conversion
(1)	boiler	Stored energy → Heat energy
(2)	boiler	Stored energy → Light energy
(3)	Turbine	Kinetic energy → Electrical energy
(4)	generator	Kinetic energy → Stored energy

19. Look at the set-up below.



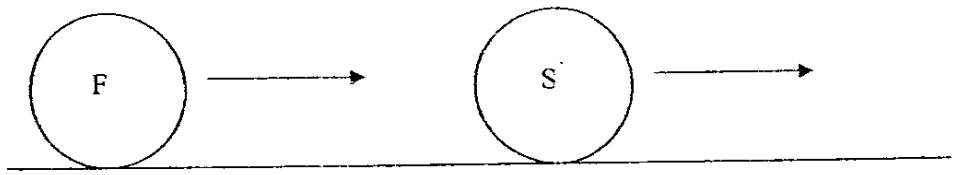
What can be done to make the water-wheel turn faster?

A. Move the tin of water higher up.
B. Move the water wheel lower down
C. Increase the size of the hole in the tin.

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

24.

20. Two tennis balls, F and S, are moving over a marble floor at different speeds as shown below.

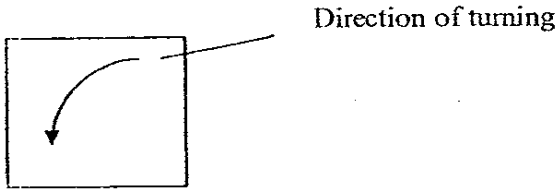


What will happen to F and S?

A. F will hit S and F will continue to move towards the right.
B. F will hit S and F will move towards the left.
C. After being hit by F, S will slow down and move towards the left.
D. After being hit by F, S will travel faster towards the right.

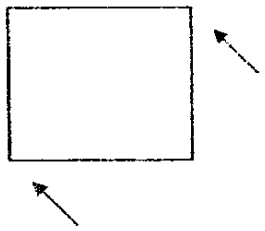
(1) A and C only
(2) B and C only
(3) B and D only
(4) A and D only

21.

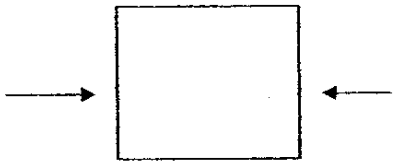


When two forces act on a box, it turns in the direction as shown in the figure above. Which one of the following figures **correctly** shows how the two forces have acted on the box?

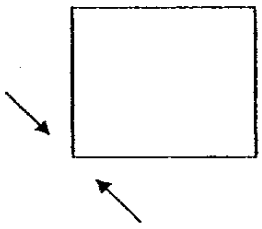
(1)



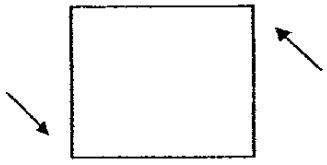
(2)



(3)

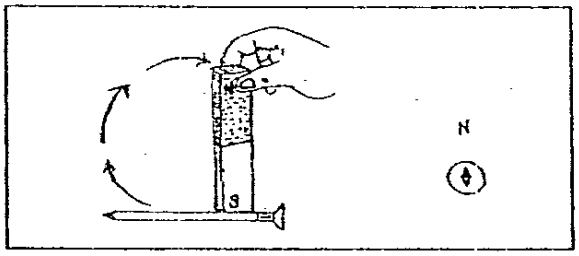


(4)

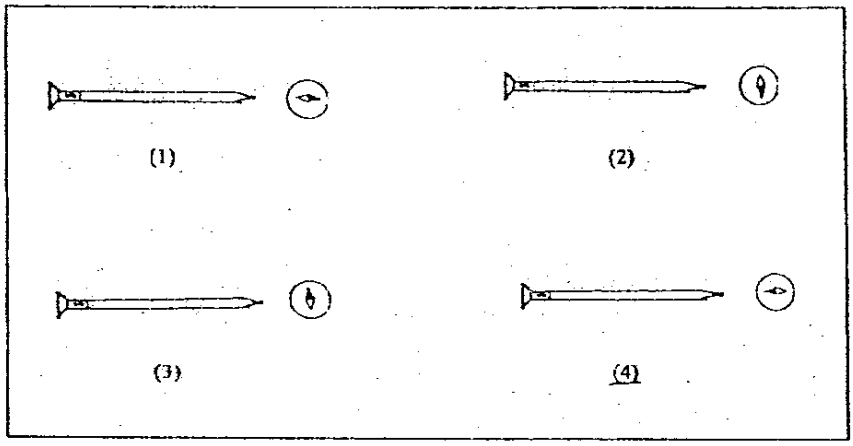


35.

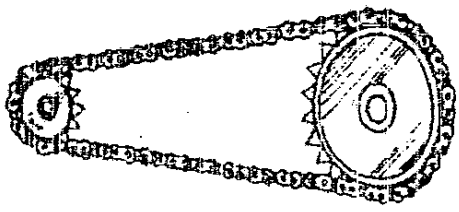
22.



A nail is made into a magnet by the method shown above.
If a compass is brought next to its tip, which one of the following shows the correct result?



23. The two gears below are connected by a chain in a bicycle.



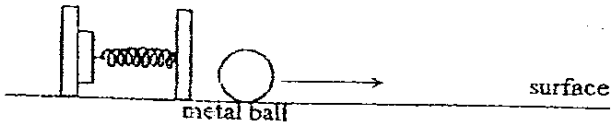
Which of the following statement(s) is/are **true**?

A. The bigger gear is used to turn the smaller gear.
B. The two gears take the same time to make one complete revolution each.
C. The use of chains to connect gears enable the gears to move in opposite directions.

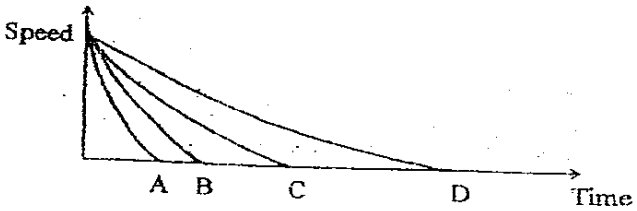
(1) A only
(2) C only
(3) A and C only
(4) A, B and C

24. A metal ball is catapulted across 4 different surfaces with the same force as shown in the diagram below :

wooden surface,	cemented surface,	marble surface,	carpeted surface



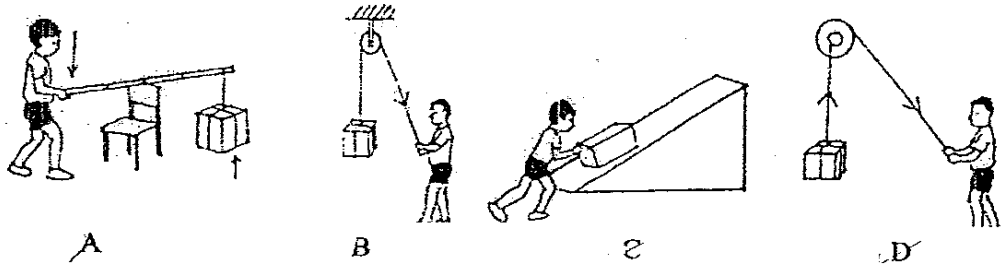
The results are plotted on the graph below. The 4 lines, A, B, C and D represent the 4 different types of surfaces.



Which one of the lines represents the carpeted surface?

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

25. A boy lifted a load of 10 kg by lifting it upwards. Four other boys lifted **the same load** using the various machines as shown in the diagram below. Which of the boys used **less than 10kg** of force?



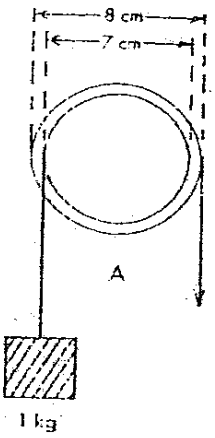
(1) C only (2) A and B only
(3) C and D only (4) B and D only

37.

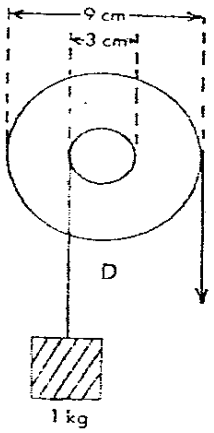
The greater the difference between diameter, the lesser the force.

26. Which one of the following wheel and axle requires the **least** effort to lift the load?

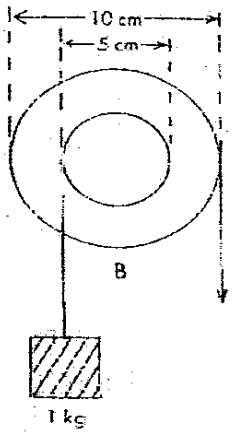
(1)



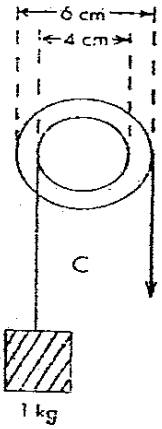
(2)



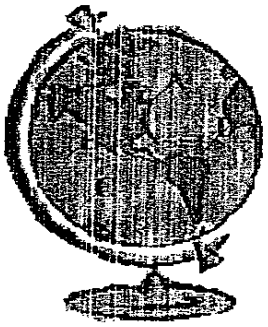
(3)

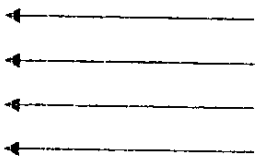


(4)



27. Study the diagram below.





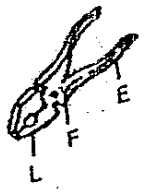
Sunlight

At which position can you find Belinda, who is sitting at the beach, enjoying the sun and sea breeze?

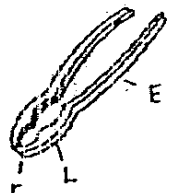
(1) A
(2) B
(3) C
(4) D

28.

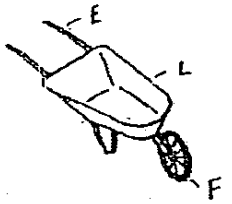
28. The pictures below show some things that are used as levers.



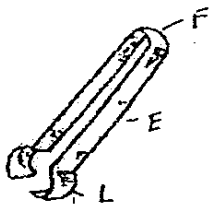
pliers
A



nut cracker
B

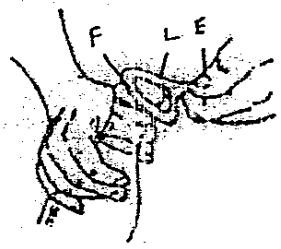


wheelbarrow
C



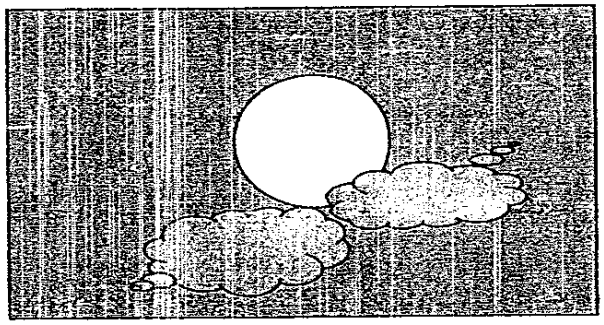
ice-tongs
D

Which of the above have the fulcrum, effort and load arranged in the same order as the cap opener shown below?



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

29. The diagram below shows what the Moon looks like on a particular night.

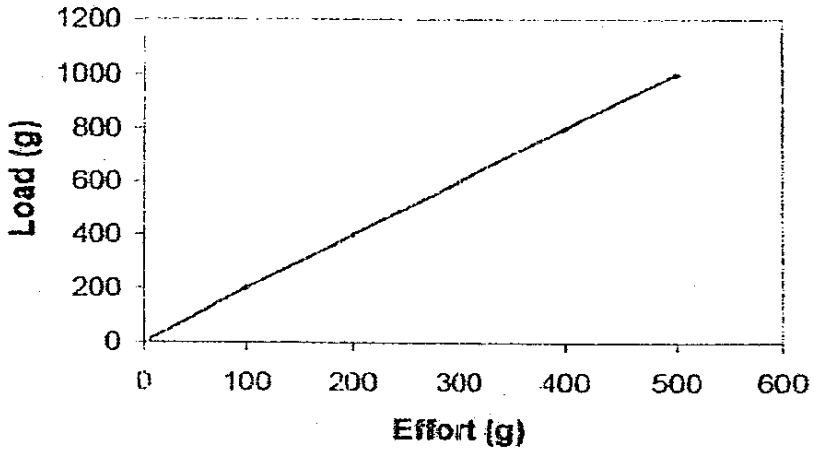


How many days will it be before the new Moon is seen?

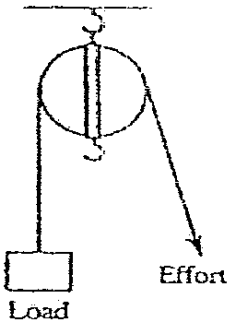
(1) 1
(2) 7
(3) 14
(4) 28

39.

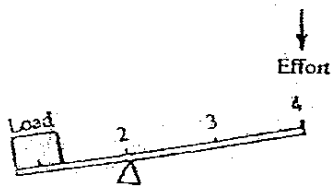
30. The graph below shows the relationship between the load and the effort of a machine.



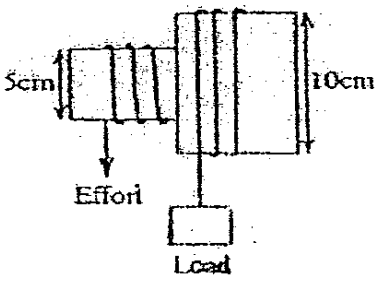
Which of the following machines are likely to produce the above results?



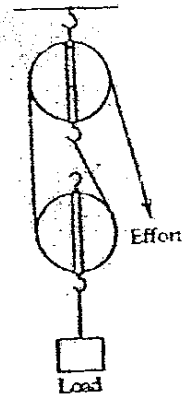
A



B



C



D

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

40.

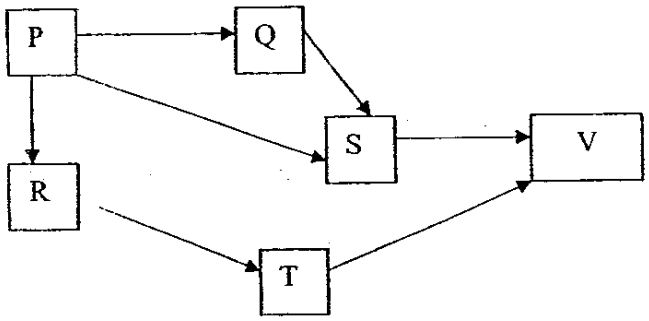
NAN HUA PRIMARY SCHOOL
MID-YEAR EXAMINATION 2006
SCIENCE
PRIMARY 6

Name : _____( ) Marks : _____/40

Class : Primary 6 ____

Section B (40 marks)
For questions 31 to 46, write your answers in the spaces provided.
Answer all the questions.

31. Study the food web carefully.



Which of the following statements are true of the above food web?
Put a (✓) in the box next to the statement that is **true?** (2 marks)

(a) 'T' is a food consumer.

(b) 'Q' is both a predator and a prey.

(c) All except 'P' are not able to make food.

(d) If 'R' and 'S' are removed, 'V' will eventually die.

(e) R, Q and S are herbivores.

(f) V is a carnivore.

41.

32. Look at the animals below.

Woodlouse

Maggot

Sally refers to them as 'decomposers'.

(a) Do you agree with her? (1 mark)

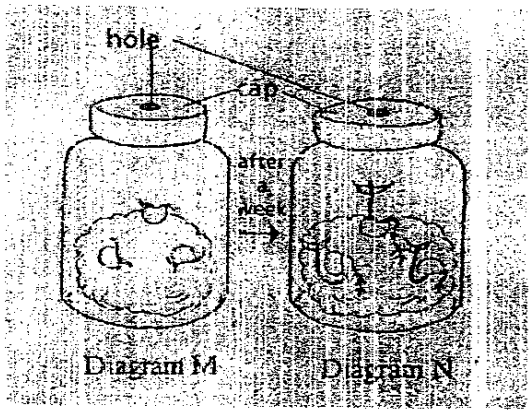
_____

(b) Why do you say so? (1 mark)

_____

_____

33. Three young seedlings were placed in a container filled with damp cotton wool as shown in diagram M. After a week, the results were obtained as shown in Diagram N.



(a) In Diagram N, what can you observe about the **direction** in which the shoots and the roots grow? (2 marks)

_____

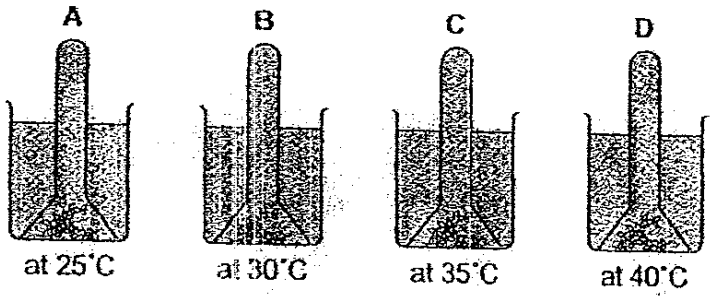
_____

(b) Which part of the seed provides the young seedling with food as it grows? (1 mark)

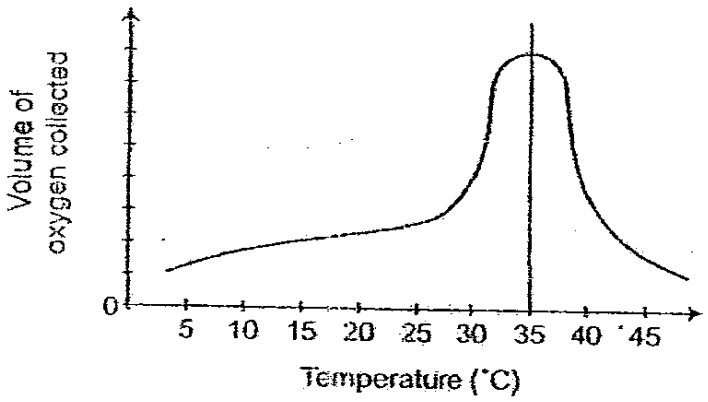
_____

42.

34. The set-up below is an experiment to find out the effect of temperature on the rate of photosynthesis of an aquatic plant. The water in each beaker was collected from the same location of a pond.



The graph below shows the relationship between the rate of photosynthesis of the aquatic plants and the temperature of the water.



(a) Based on the above graph, what conclusion can you draw about the effect of temperature on the rate of photosynthesis? (1 mark)

_____

_____

_____

(b) What do you think might happen to the fish in the pond if the temperature of the water increases to 45°C? (1 mark)

_____

_____

43.

35. Four goldfish, W, X, Y and Z are fed with different amount of bread everyday. The other conditions are kept exactly the same. The weights of the four goldfish are taken every week. The results are shown in the table below.

Goldfish	Amount of bread eaten everyday (g)	Weight of goldfish (g)			
		1st week	2nd week	3rd week	4th week
W	3	30	30	31	32
X	6	30	31	32	34
Y	9	30	32	35	Dies
Z	12	30	33	Dies	-

(a) What is the most suitable **amount of bread** you should give to the goldfish if you want to increase its weight the fastest without harming it? (1 mark)

_____

(b) **Explain** why goldfish Y and Z die (1 mark)

_____

_____

36 Study the two groups of animals below.

Group A	**Group B**
Goldfish	Zebra
Eagle	Guppy

(a) How are the two groups classified? (1 mark)

_____

_____

(b) Which group would you place the platypus (a mammal) in? (1 mark)

_____

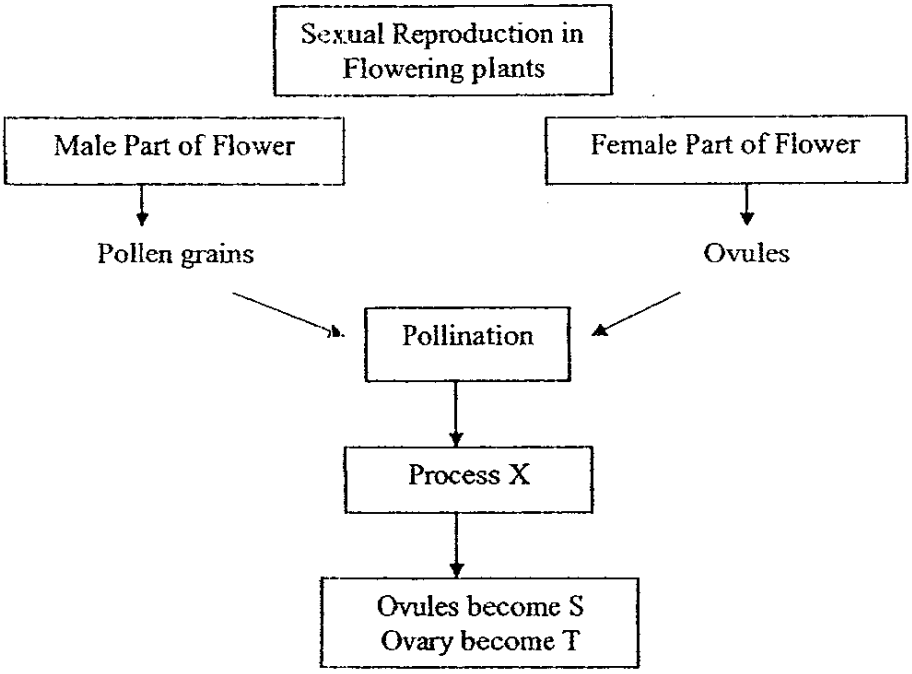
(c) In what way is the goldfish different from the other three animals in terms of reproduction? (1 mark)

_____

_____

44.

37 Study the flow chart below and answer the questions that follow.



(a) What is Process X? (1mark)

_____

(b) Name the plant parts

(i) S : _____ (1 mark)

(ii) T : _____ (1 mark)

(c) Wind-pollinated flowers usually produce pollen grains in large numbers. **Explain** why. (1 mark)

_____

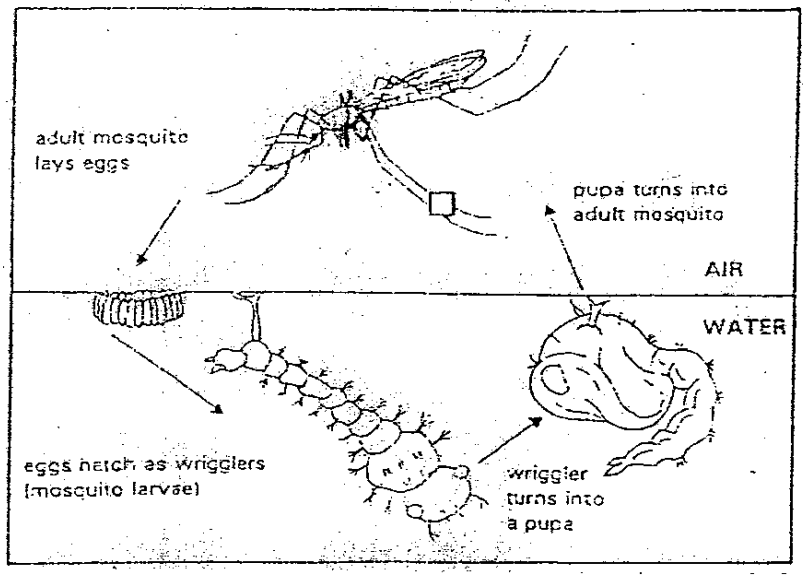
_____

_____

45.

38. Lay Peng is studying the life cycle of a mosquito as shown in the diagram.

LIFE CYCLE OF A MOSQUITO



She says, "One way of controlling the population of mosquitoes is to spread a layer of oil on the surface of the water."

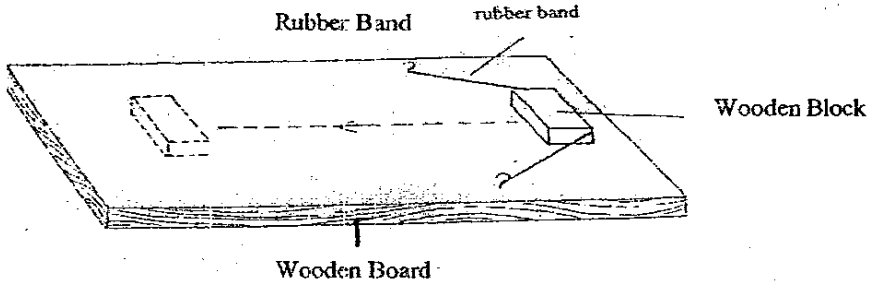
Explain why this method can be used to control the population of mosquitoes. (2 marks)

_____

_____

_____

39. When the wooden block is released, it moves a certain distance as shown in the diagram.



(a) What is the source of energy for the wooden block to move? (1 mark)

_____

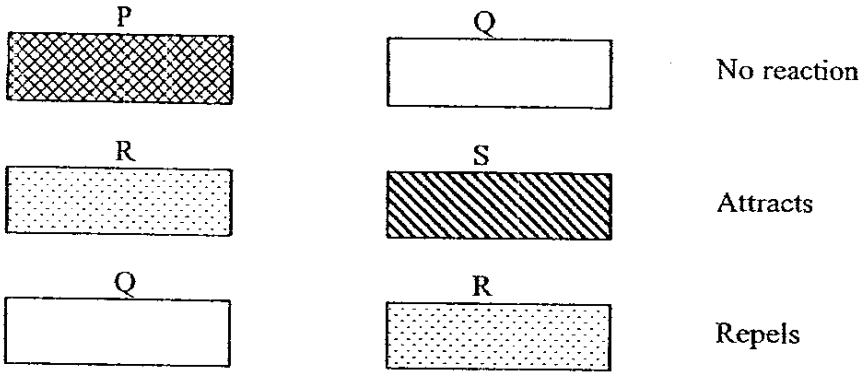
(b) What do you think will happen to the distance moved by the wooden block if the surface is wet? Why? (2 marks)

_____

_____

46.

40. 4 objects, P, Q, R and S are put close to each other to test if they are magnets. The results are shown below.



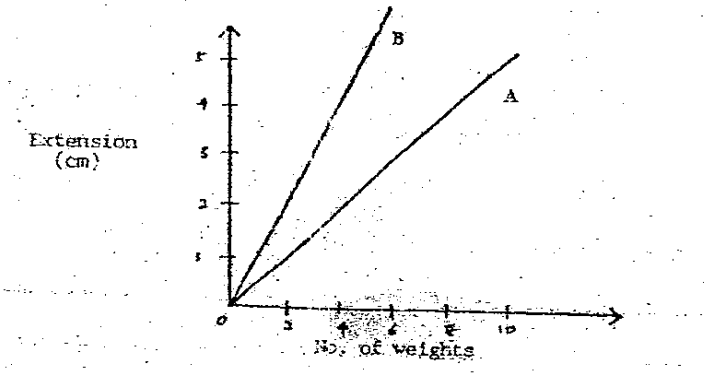
(a) Which of the objects P, Q, R and S are definitely magnets? (1 mark)

_____

(b) Which object is made of a non-magnetic material? (1 mark)

_____

41. Study the graph given below.



The graph shows the relationship between the extensions of two springs, A and B, when different weights are hung from them. Each piece of weight is exactly 10g. The original length of each spring is 5cm.

(a) What is the length of Spring A when 60g of weights are hung on it? (1 mark)

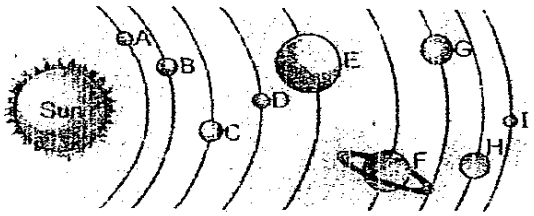
_____

(b) Which spring, A or B, would extend more when a 50g weight is hung onto each of them? (1 mark)

_____

47.

42. Look at the diagram below.



(a) Which letter represents the Earth? (1 mark)

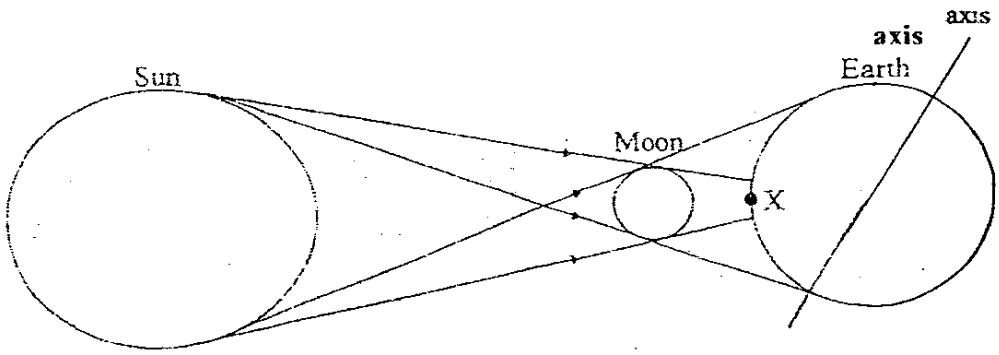
_____

(b) **Based on the above diagram**, give a reason why no life is known to exist except on earth. (1 mark)

_____

_____

43. The diagram below shows the Sun, the Moon and the Earth forming a straight line. The Moon lies between the Sun and the Earth.



(a) Can the people living at the area marked X see the Sun? (1 mark)

_____

(b) **Explain** your answer to (a) (1 mark)

_____

(c) In the above diagram, **shade the part of the Earth which is experiencing night-time.** (1 mark)

48.

44. Some things are grouped as follows:

Group A : stretched rubber band, compressed spring
Group B : petroleum, battery
Group C : apple on a tree, ball on a ramp

(a) What is **common** about all the things grouped? (1 mark)

_____

(b) In which group would you place 'coal'? (1 mark)

_____

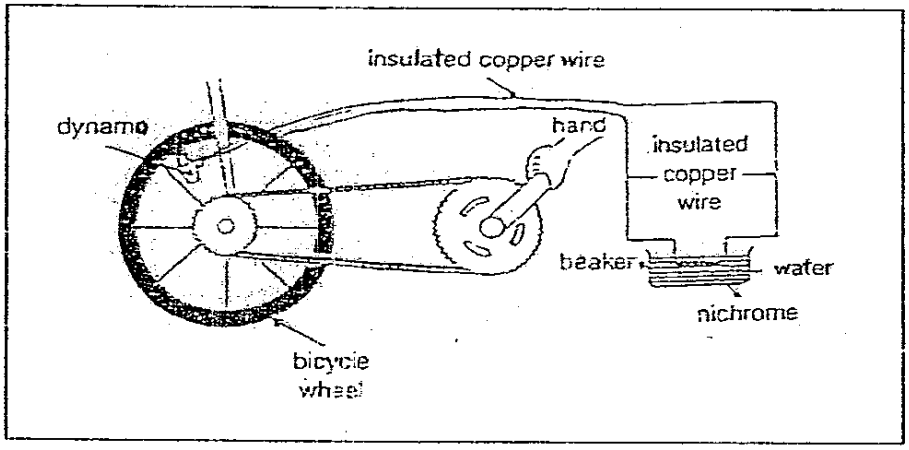
(c) Give a reason for your answer in (b) (1 mark)

_____

(d) 'A boy sitting at the top of a slide' is grouped in Group C.
Give a reason for his choice. (1mark)

_____

45. The diagram below shows an experiment carried out by a group of pupils. They attached a bicycle dynamo to a circuit. Then they turned the larger gear to work the dynamo.

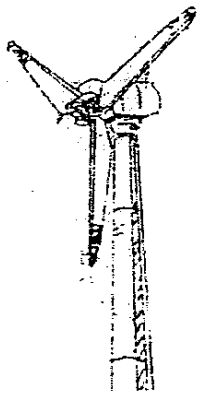


(a) What will happen to the water in the beaker after some time? (1 mark)

_____

(b) Explain what had caused this to happen by showing the conversion of energy in the box below. (1 mark)

46. The diagram below shows a wind turbine that makes use of wind power to generate electricity.



(a) A wind turbine is not expensive to build compared to a hydroelectric plant but there are still certain disadvantages in using it to generate electricity. Name one such **disadvantage.** (1 mark)

_____

_____

(b) State one **advantage** in using the wind turbine to produce electrical energy besides the cost to build one. (1 mark)

_____

_____

End-of-paper

XD.

Nan Hua Primary School

Primary 6 Science SA1 Exams (2006)

(ANSWER KEY)

SECTION A : (60 MARKS)

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

Qn no.	Ans
11	2
12	4
13	2
14	4
15	4
16	2
17	2
18	1
19	4
20	4

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

SECTION B (40 MARKS)

Qn No.	Answers	
31.	(a) 'T' is a food consumer	✓
	(b) 'Q' is both a predator and a prey.	
	(c) All except 'P are not able to make food	✓
	(d) If 'R' and 'S' are removed, 'V' will eventually die	✓
	(e) R, Q and S are herbivores.	✓
	(f) V is a carnivore.	

32a.	No.
32b.	They feed on dead animals and break the food into smaller pieces to help speed up decomposition.

33a	The shoots grow upwards while the roots grow downwards.
33b	Seed leaves.

Qn No.	Answers
34a.	The photosynthesis is going faster 5°C to 35°C but slows down from 35°C onwards.
34b.	It would be too hot and the plants might not enough oxygen and the fish might die.

35a	6g
35b	There was too much food and goldfish Y and Z ate too much food and died.

36a.	Group A are animals that lay eggs while group B are animals that give birth to young alive.
36b.	Group A.
36c.	Goldfish reproduce by external fertilization while the other three animals reproduce by internal fertilization.

37a.	It is fertilization.
37b (i)	Seeds
(ii)	Fruits
37c.	It increases the chance of fertilization and pollination.

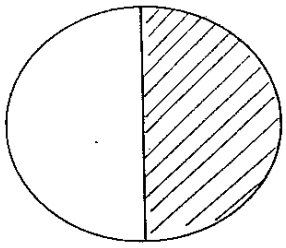
38.	The larva and pupa stage of a mosquito is in the water. The larva and pupa sticks a breathing tube on the surface of the water to get air. If there is a layer of oil on the top, the larva and pupa cannot get air and will suffocate to death.

39a	It is the stretched rubber band.
39b	The distance moved will be longer. Water reduces the friction between the wooden board and the wooden block and allows the wooden block to move a longer distance.

40a	R and Q
40b	P

41a	It is 8cm
41b	Spring B

42a	C
42b	Some planets are too near the sun and it is too hot for organisms to survive while some planets are too far from the sun and it is also too cold for organisms to survive.

Qn No.	Answers
43a	No
43b	There is a eclipse as the Moon comes between the earth and the sun, and cast its shadow on earth
43c	

44a	They all have potential energy.
44b	Group B
44c	Coal has chemical potential energy like the petroleum and battery.
44d.	A boy sitting at the top of a slide gravitational energy like the apple on a tree and the ball on a ramp.

45a	It will boil and become hot.
45b	Kinetic energy ⟶ electrical energy ⟶ heat energy

46a	There may not be wind most the time.
46b	Wind is a renewable source of energy and it will not run out unlike coal or oil used in a hydroelectric plant.