



AI TONG SCHOOL

2010 CONTINUAL ASSESSMENT (1)

PRIMARY SIX SCIENCE

DURATION : 1hr 45 min

DATE: 4th March 2010

INSTRUCTIONS

Do not open the booklet until you are told to do so.

Follow all instructions.

Answer all questions.

Name : _____ ()

Class : Primary _____

Parent's Signature : _____

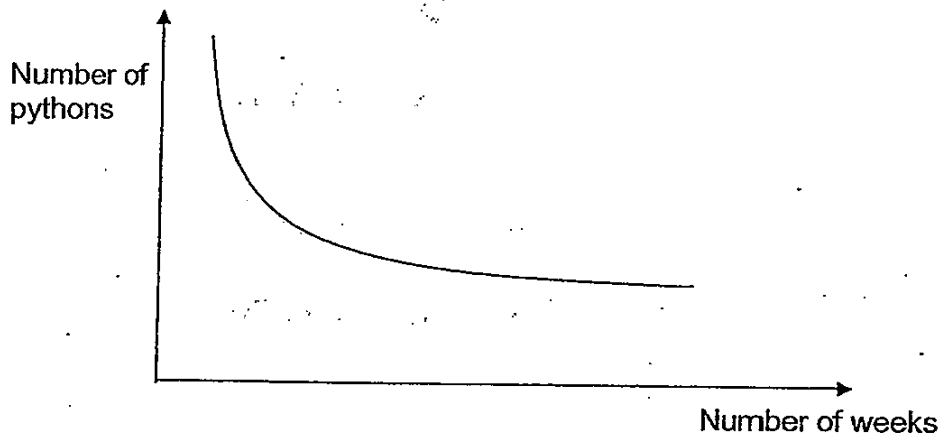
Date : _____

MARKS	100

Section A (30 x 2 marks)

For each question 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) in the Optical Answer Sheet provided.

1. Johnny studied a population of pythons over a few weeks. The graph below shows the change in the population over some time.



What could be the possible causes for the change in the population of pythons as shown in the graph above?

- A: An increase in the number of predators in the community.
- B: An increase in the number of prey in the community.
- C: There was a natural disaster in the area.
- D: A disease killed the plants in the community.

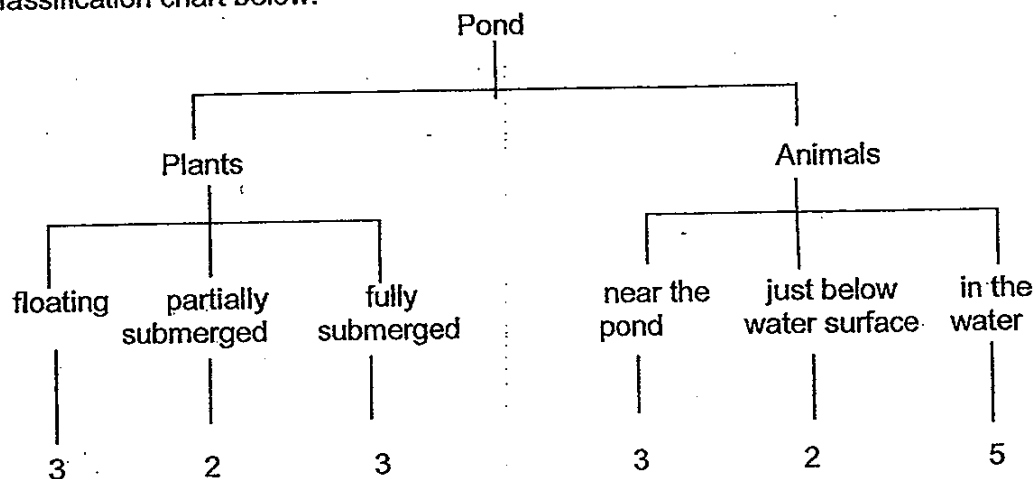
- (1) A and B only
 - (2) A and C only
 - (3) A, B and D only
 - (4) A, C and D only
2. Sally found some organisms in Location Y. They are listed below :

earthworm	woodlouse	anf.
beetle	mimosa	ferns

Which one of the habitats were the organisms likely to live in?

- (1) mangrove swamp
- (2) banana plant
- (3) garden
- (4) pond

3. A group of pupils made a study of the organisms found in their school pond. They counted the number of organisms and recorded the findings in the classification chart below.



Which of the following statements about the plants and animals is definitely correct?

- (1) There are 18 plant populations in the pond.
 - (2) There are 2 populations in the pond.
 - (3) The duckweed and water hyacinth are floating plants found in this pond.
 - (4) The community consists of different types of organisms.
4. The table shows 5 set-ups in a Science laboratory. Hiroko used them to find out how a certain condition of a habitat affects the survival of woodlice.

Set-up	Number of woodlice	Temperature (° C)	Food
A	10	23	Rotting plants
B	5	23	Rotting plants
C	10	27	Dead leaves
D	5	27	Rotting plants
E	5	23	Dead leaves

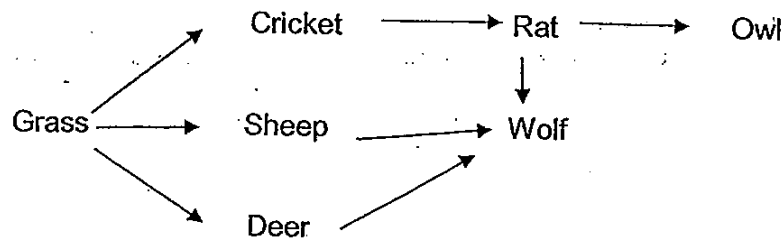
Which two of the above set-ups should Hiroko use in order to conduct a fair test?

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

5. Which one of the following statements best describes how the water lily is able to obtain sunlight?

- (1) The leaves have a waxy surface.
- (2) The leaves have more stomata on its underside.
- (3) It has long flower stalks that raise the flowers above the water surface.
- (4) It has long leaf stalks that allow the leaves to float on the water surface.

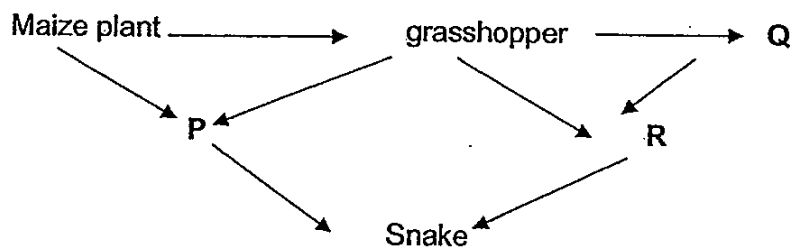
6. The diagram below shows a food web.



Which of the following animals **do not** have a predator-prey relationship with each other?

- (1) Owl and rat
- (2) Rat and cricket
- (3) Wolf and sheep
- (4) Cricket and owl

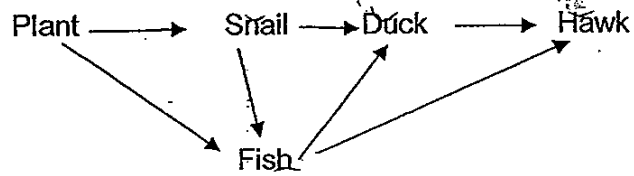
7. The food web below shows some organisms in a garden.



Which one of the following organism groups does P, Q and R possibly represent?

	P	Q	R
(1)	Sparrow	Praying Mantis	Toad
(2)	Aphid	Praying Mantis	Hawk
(3)	Mynah	Rabbit	Owl
(4)	Lizard	Sparrow	Eagle

8. The food web given below shows the organisms in a farm.

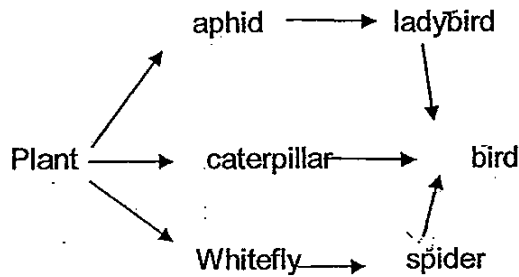


Which of the following statements best describe the food web?

- A: There are 4 food consumers.
- B: The snail is both a prey and a predator.
- C: The fish is not a prey to any predator in this food web.
- D: An increase in the fish population will cause a decrease in the snail population.

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

9. The food web below shows the organisms in a garden community.



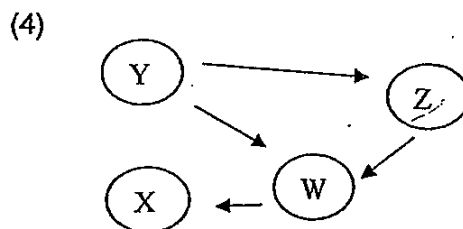
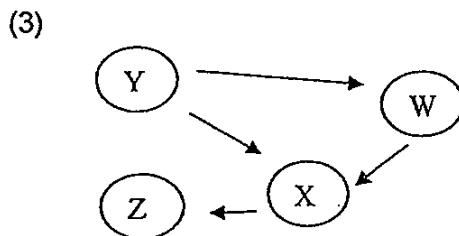
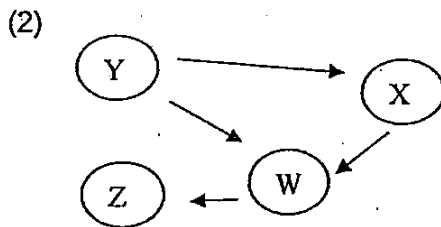
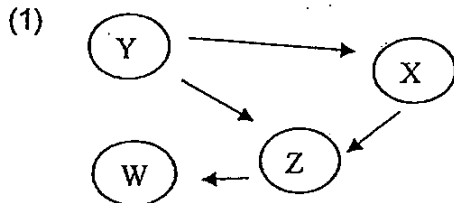
Which one of the following groups of organisms will decrease in number if there is an increase in the bird population?

- (1) Spider, caterpillar and ladybird
- (2) Spider, whitefly and caterpillar
- (3) Whitefly, caterpillar and ladybird
- (4) Whitefly, spider, caterpillar and ladybird

10. The table below shows the organisms that are found on a fruit tree and the food they eat.

Organism	Food
W	Z
X	Y
Z	X, Y

Which one of the following food webs below shows the food relationship of the organisms?



11. Which adaptations enable the whale and dolphin to live in the water?
A: flippers
B: webbed feet
C: streamlined body shape
D: blowholes located at the top of the head
- (1) A and B only
(2) B and C only
(3) C and D only
(4) A, C and D only
12. Which one of the following statements correctly describes the behavioural adaptation of the animal?
- (1) An eagle has sharp claws to catch its prey.
(2) An owl hunts at night as it can see very well.
(3) A desert fox has long ears to reduce heat loss.
(4) A polar bear hibernates in winter to avoid the low temperature.
13. Which of the following organisms use poison to kill their prey?
A: scorpion
B: jellyfish
C: crocodile
D: falcon
- (1) A and B only
(2) A and D only
(3) B and D only
(4) C and D only

14. The table below shows the functions of the adaptations of four animals.

Animals	Adaptation	Function
Turtle	A	To propel its body forward
Crab	B	To allow the exchange of gases
Fish	C	To overcome water resistance
Seal	D	To stay afloat

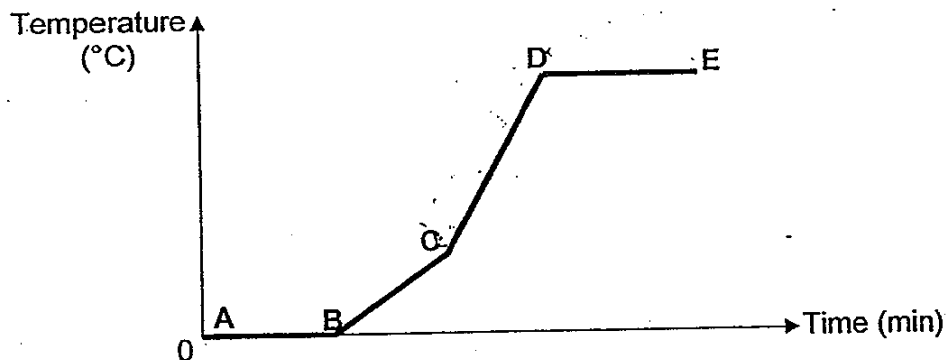
Which of the following correctly represents A, B, C and D?

	A	B	C	D
(1)	Short tail	Swim bladder	Scales	Layer of flat fat
(2)	Short tail	Gills	Scales	Hairy body covering
(3)	Flippers	Swim bladder	Streamlined body	Hairy body covering
(4)	Flippers	Gills	Streamlined body	Layer of fat

15. How do money plants adapt themselves to grow upwards to get sunlight to carry out photosynthesis?

- (1) They have woody stems.
- (2) They twine round supports.
- (3) They have tendrils to help them climb.
- (4) They have roots to help them climb.

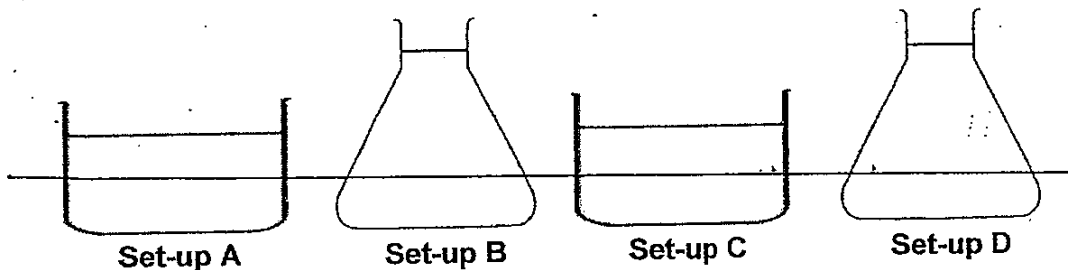
16. The graph below shows the processes water goes through over a period of time.



Which line shows that boiling is taking place?

- (1) AB
- (2) BC
- (3) CD
- (4) DE

17. A group of pupils decided to carry out an experiment to find out if the exposed surface area of a beaker affects the rate of evaporation.



The table below shows the variables used in the four set-ups.

	A	B	C	D
Amount of water	150 ml	150 ml	150 ml	150 ml
Surface area	40 cm ²	40 cm ²	60 cm ²	60 cm ²
Temperature	25°C	38°C	30°C	38°C
Speed of wind	10 km/h	20 km/h	10 km/h	20 km/h

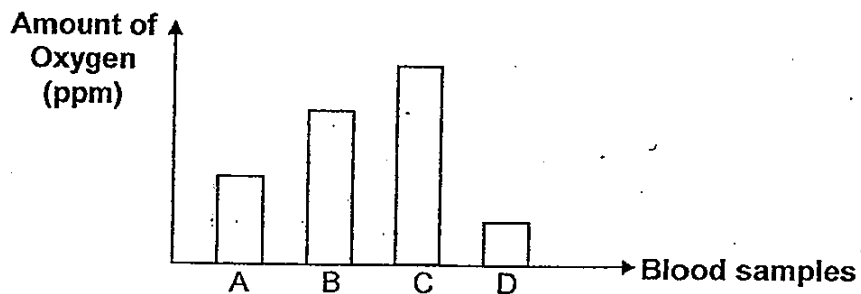
Which two set-ups could the pupils use in order to carry out a fair test?

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

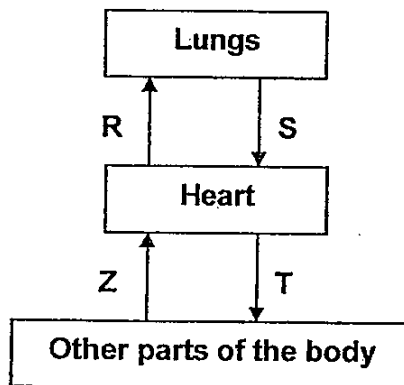
18. Alan wants to cut down on water consumption in his household and did a check on the ways he uses water at present. Which one of the following practices is not a way to save water?

- (1) Using a hose to water plants.
- (2) Using a pail of water to wash his car.
- (3) Turning off the tap when soaping during his bath.
- (4) Using a cup of water for rinsing when brushing his teeth.

19. The graph below shows the amount of oxygen in four blood samples taken at the same time from four different blood vessels in the body.



The diagram below shows how blood is circulated in our body.



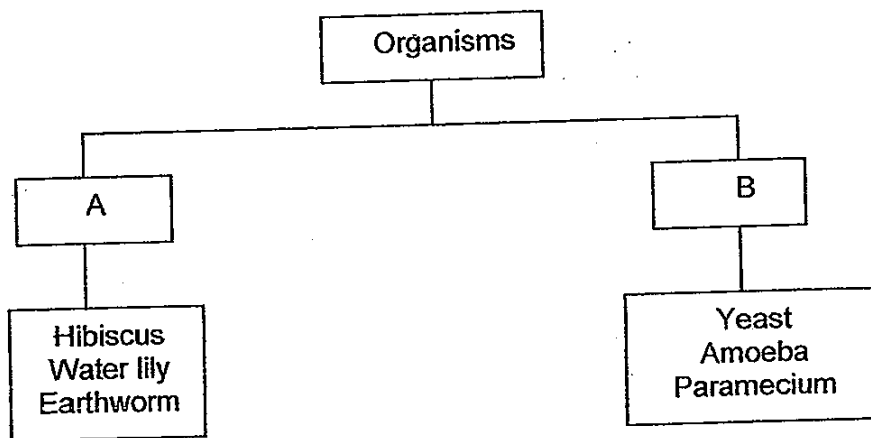
Which blood samples (A, B, C or D) shown in the graph were most likely taken from parts R and Z of the circulatory system shown in the diagram above?

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

20. The water-carrying tubes in the stem transport _____ from the roots to other parts of the plants.

- (1) water
- (2) nutrients
- (3) food and water
- (4) water and nutrients

21. Study the classification table below.



Which one of the following options is most suitable to be placed in Boxes A and B?

	A	B
(1)	Live in Garden	Live in Forest
(2)	Living things	Non-living things
(3)	Have many cells	Have one cell
(4)	Can respond to changes	Cannot respond to changes

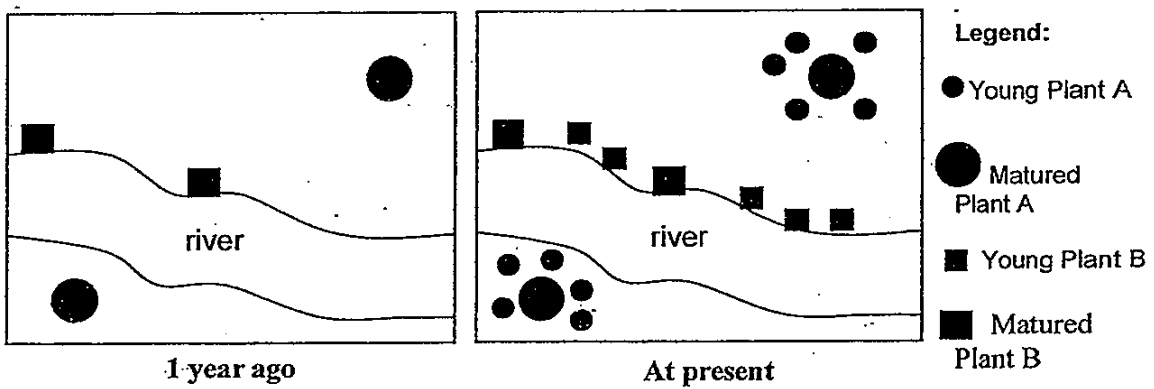
22. What do we call a large group of similar cells?

- (1) Nerves
- (2) Tissues
- (3) Organ
- (4) Skin

23. Which one of the following statements is false?

- (1) A cell can perform several functions.
- (2) All plant cells contain chloroplasts.
- (3) Organs are made up of cells.
- (4) A cell is the basic unit of life.

24. The diagram shows part of an island, 1 year ago and at present, where two types of plants, A and B, are growing.



Which one of the following is most likely to be the dispersal method for these plants?

	●	■
(1)	Water	Explosive action
(2)	Animals	Wind
(3)	Water animals	Explosive action
(4)	Explosive action	Water

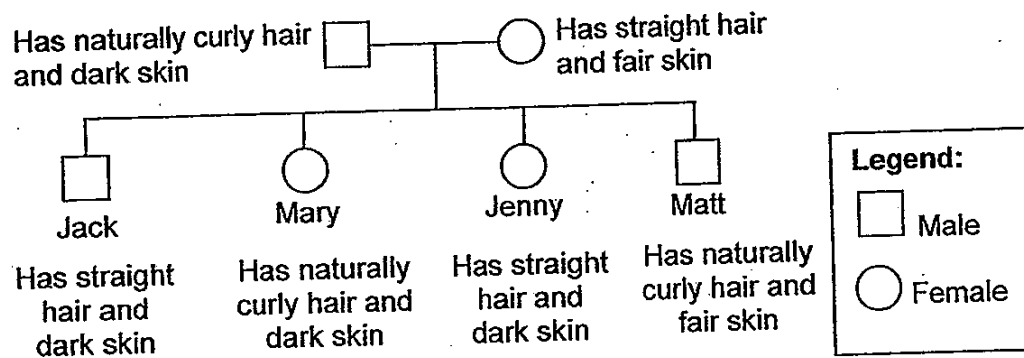
25. Noel germinated some seeds and recorded his observation in a table as shown below.

Observation	Day
Seed becomes swollen	2
Seed coat breaks	5
Root appears	7
Shoot starts to appear	10
Shrivelled seed leaves drop off	17

On which day will the seedling most probably be able to photosynthesize?

- (1) Day 5
- (2) Day 7
- (3) Day 9
- (4) Day 16

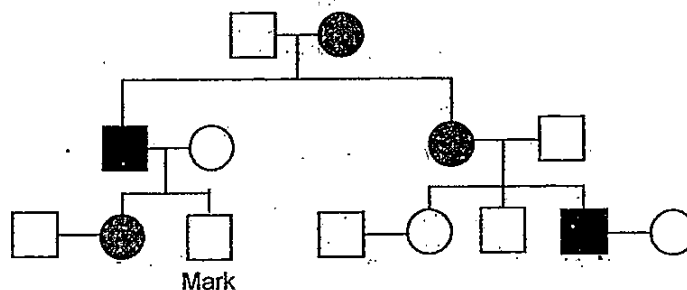
26. The diagram below shows Mr and Mrs Sim's family tree.



Which one of their children inherited traits from only one of them?

- (1) Jack
- (2) Matt
- (3) Mary
- (4) Jenny

27. The diagram below shows 3 generations of Mark's family that carry the genetic trait for Disease X.



Legend:

○ Female

□ Male

● Female carrier of Disease X

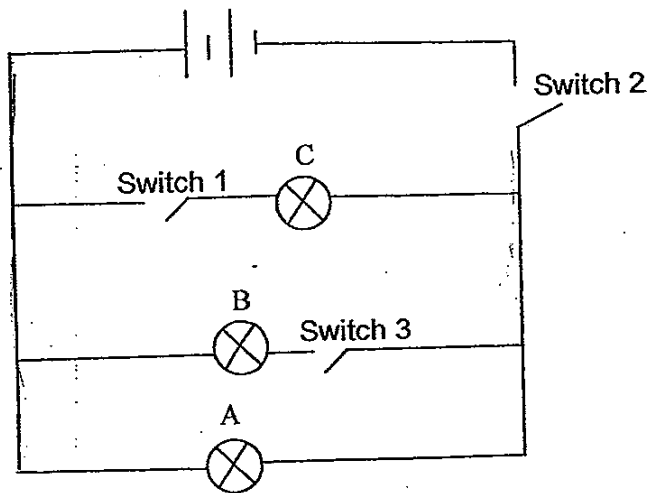
■ Male patient of Disease X

Which of the following statements can you conclude about the family tree?

- A: Mark has a cousin with Disease X.
- B: Mark's mother inherited the genes of Disease X from his grandmother.
- C: There is a possibility of Mark's sister bearing a son with the disease.
- D: The genes of Disease X are passed on to only the female members of the family.

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

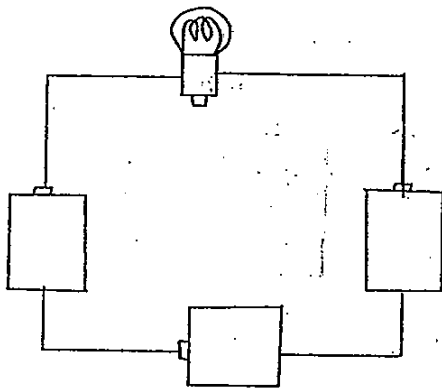
28. The diagram below shows an electric circuit.



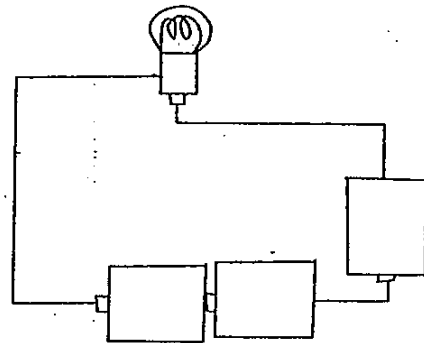
In which order must the switches be closed so that Bulb A lights up first, followed by Bulb B and then Bulb C?

	First switch to close	Second switch to close	Third switch to close
(1)	2	1	3
(2)	3	2	1
(3)	2	3	1
(4)	1	3	2

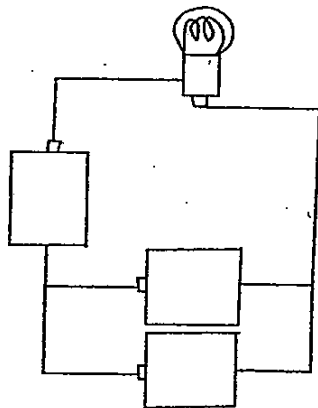
29. In which of the following circuits will the bulb not light up?



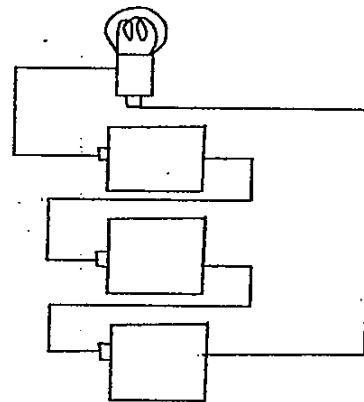
Circuit A



Circuit B



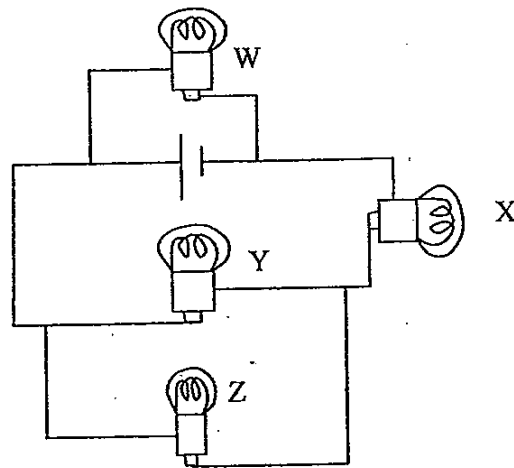
Circuit C



Circuit D

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

30. Study the circuit diagram below.



Which bulb, if faulty, would allow only one other bulb to light up in the circuit?

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

Name : _____ ()

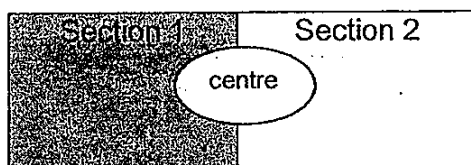
Class : P6 ()

Section B : 40 marks

Read the questions carefully and write down your answers in the spaces provided.

31. Tommy wanted to find out more about two types of organisms, A and B. He divided a rectangular container into two sections, 1 and 2.

Section 1 was filled with wet soil and covered with black paper. Section 2 was filled with dry soil and left open. Both types of organisms were released in the centre of the container as shown in the diagram below.



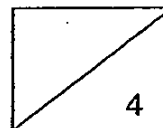
After 30 minutes, the number of organisms found in each section of the container was recorded in the table below.

Organisms	Number in Section 1	Number in Section 2
A	12	0
B	1	10

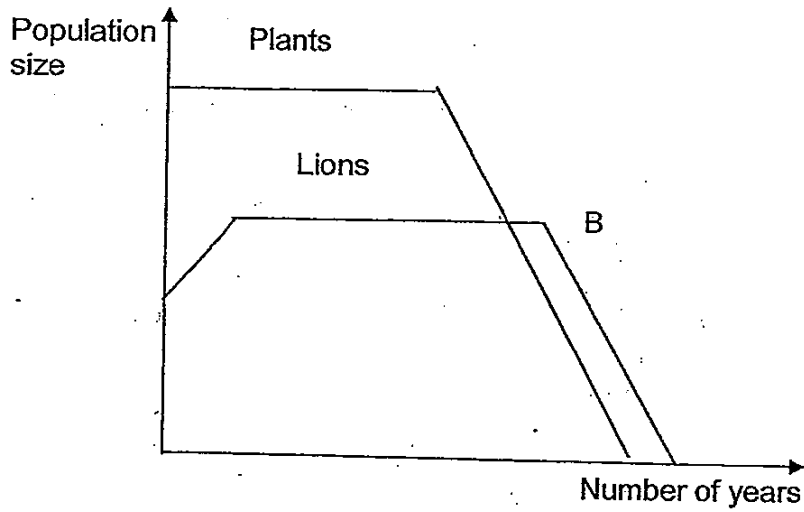
- (a) Describe the characteristics of living conditions of Section 1. [1]

- (b) What could Organism A be? [1]

- (c) What would happen to the population of Organism A if it is placed in Section 2 for a long period of time? Explain your answer. [2]

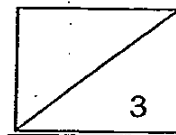


32. The graph below shows the population of lions and plants in a forest over many years.



- (a) What do you notice about the population of lions after Point B? [1]

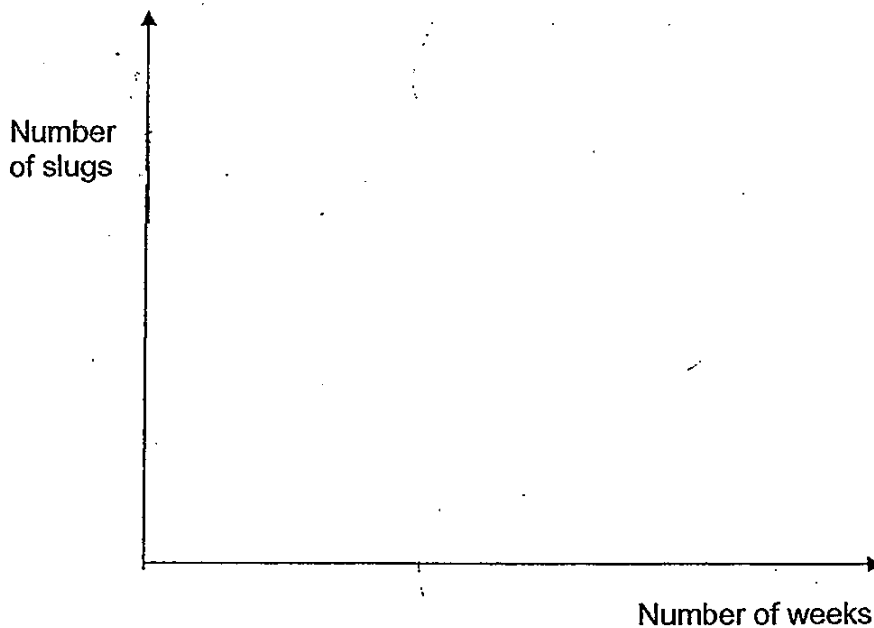
- (b) Do you think the plant population has an effect on the population of lions? Explain your answer. [2]



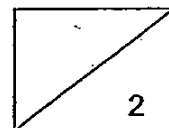
33. A farmer wanted to get rid of slugs that were eating up his crops. He tested a new pesticide on his field. The number of slugs killed increased with the same amount of pesticide used. After some weeks, he found that the number of slugs killed began to decrease. He recorded down the number of slugs and the amount of pesticide used in the table as shown below.

Week	Number of slugs	Amount of pesticide used (ml)
1	30	200
2	24	200
3	20	200
4	14	200
5	17	200
6	22	200

- (a) Based on the information above, draw a line graph to indicate the change in the population of the slug. [1]



- (b) What is a possible reason for the number of slugs to increase after Week 4? [1]
-



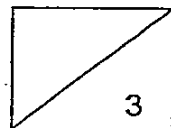
34. Andrew set up an experiment to find out which conditions were most suitable for plants to live. The set-up consisted of five bell jars containing a plant each. Each plant was given a different set of conditions. All the plants were identical and healthy at the start of the experiment.

The table below shows the conditions given to the five plants.

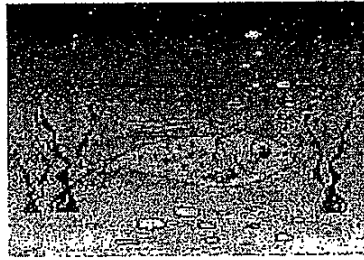
	Bell jar A	Bell jar B	Bell jar C	Bell jar D	Bell jar E
Water	Not present	Not present	Present	Not present	Present
Oxygen	Present	Not present	Present	Present	Not present
Sunlight	Not present	Present	Present	Present	Present
Fertilizer	Present	Not present	Not present	Present	Not present
Carbon dioxide	Present	Present	Not present	Present	Present

- (a) Which two bell jars of plants would be suitable to show that water is needed for the plants to make food? Explain your answer. [2]

- (b) Besides water, what else do plants need to take in to photosynthesize? [1]

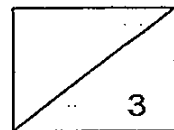


35. Amy set up a freshwater aquarium with a fish and some water plants.



(a) State 2 reasons why she put water plants in the tank. [2]

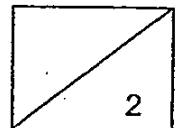
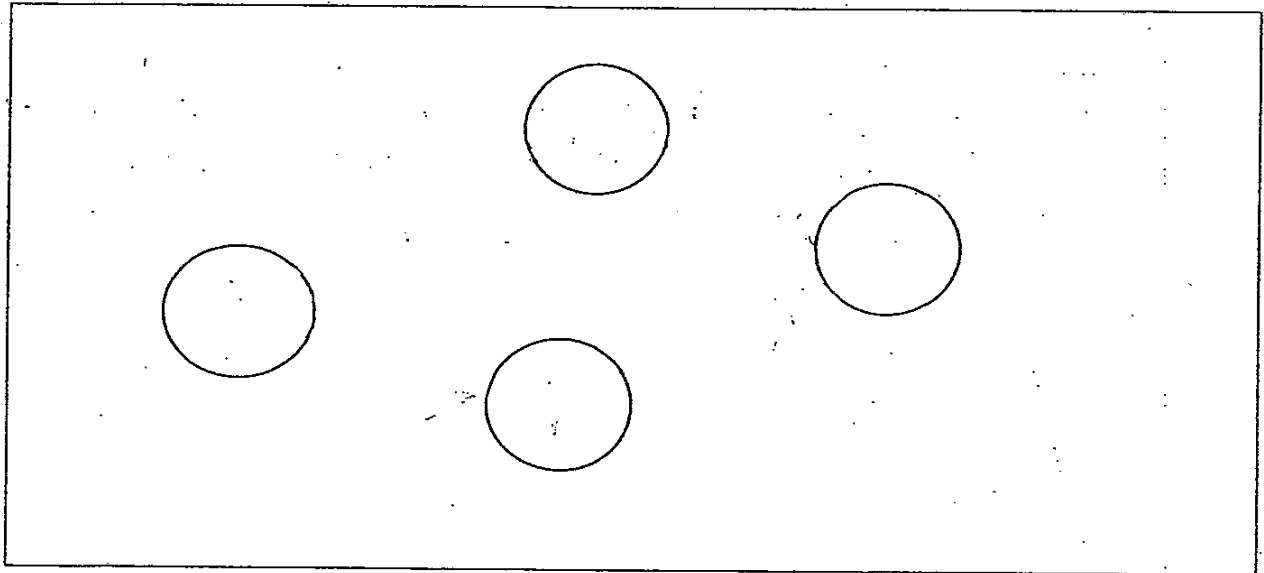
(b) Amy's father caught a small fish when he went fishing out at sea. Should he place the fish into Amy's aquarium? Explain your answer. [1]



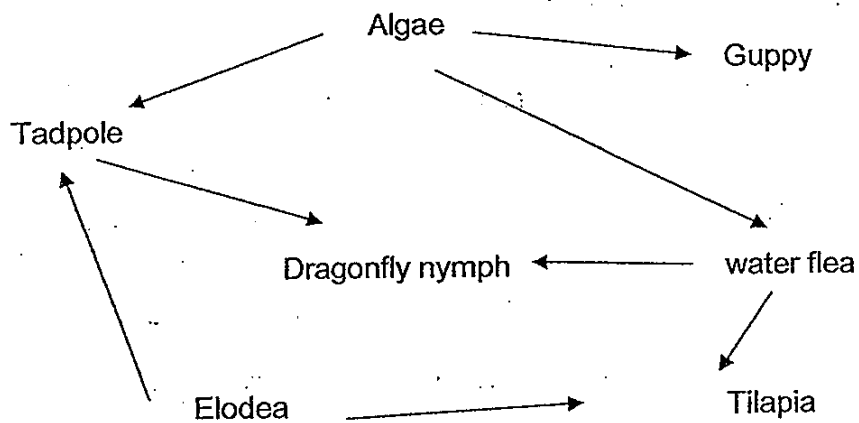
36. There are four organisms in the box, each represented by an alphabet. Complete the food web below by :

- writing only the alphabet representing the organism in the circle provided
- draw arrows to indicate the food relationship between the organisms [2]

A : Caterpillar
B : Grass
C : Chicken
D : Earthworm



37. Study the food web below and answer the questions.



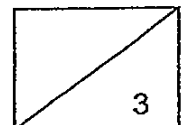
(a) Identify the community of the above mentioned organisms. [1]

(b) Based on the food web above, name

(i) a food producer : _____ [1/2]

(ii) a predator : _____ [1/2]

(c) What will be the immediate effect if all the algae are removed from this community? [1]

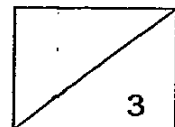


38 Some desert plants have the following adaptations to survive in the desert.
(a) Explain the function of these adaptations.

(i) [1]

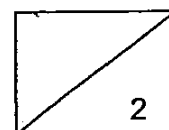
(ii) shallow roots [1]

(b) A camel is able to survive in a desert. State one adaptation that enables the camel to survive in the desert. [1]

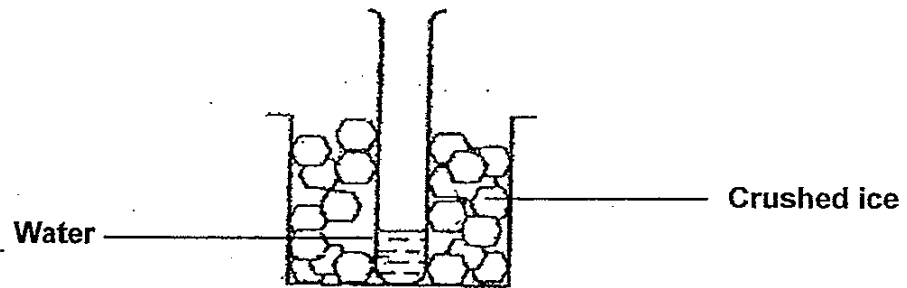


39. State one adaptation of the monkey and polar bear that helps them to live in its habitat. [2]

Animal	Habitat	Adaptation	Function of the adaptation
Monkey	Forest		
Polar Bear	The Arctic		



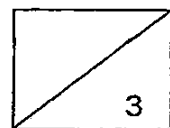
40. Danny sets up an experiment as shown in the diagram below.



(a) How can Danny lower the temperature of the crushed ice? [1]

(b) What change of state is likely to take place to the water in the test tube after some time? [1]

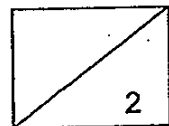
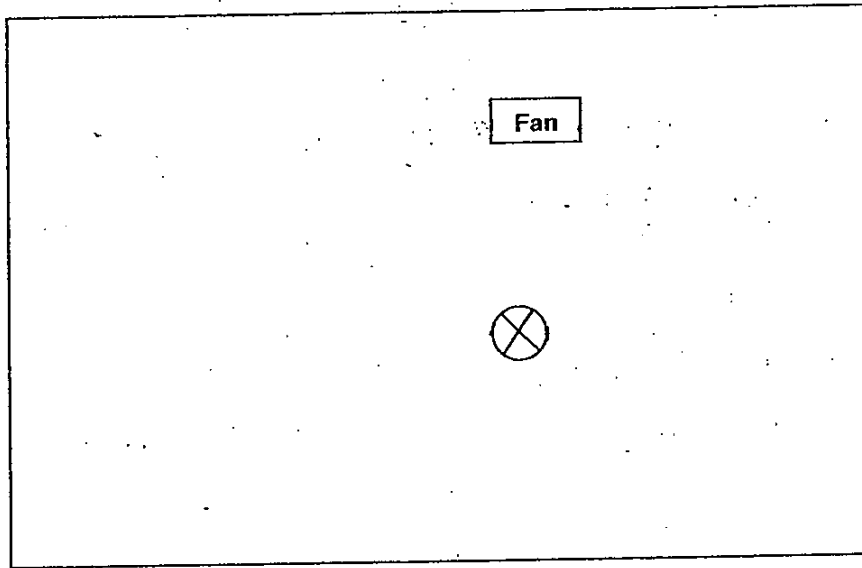
(c) What had caused the change in (b) to take place? [1]



41. Mr Johnson wants to set up an electrical circuit such that a lamp and fan can continue working even when either one is out of order.

In the box below, use symbols to draw the circuit to connect the lamp and fan that Mr Johnson would set up.

[2]



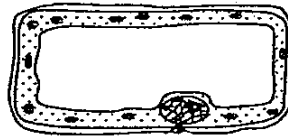
42. Jason carried out an investigation on his breathing rate before and after exercising. He recorded his results in the table below.

Breathing rate at rest (number of inhalations every minute)	Breathing rate immediately after exercising (number of inhalations every minute)
25	50

- (a) What was Jason trying to find out from his investigation? [1]

- (b) How could Jason make his investigation more accurate? [1]

43. The diagram below shows a plant cell.

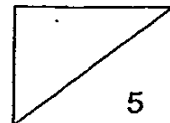


A scientist wanted to insert some genetic material that would enable the plant cell above to make a new substance T on its own.

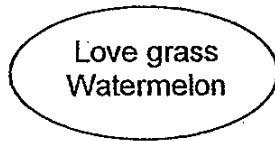
- (a) In the diagram above, draw an arrow to show the part of the cell that he should insert the genetic material. [1]

Name the part which you have indicated. [1]

- (b) It was discovered that Substance T could not get out of the cell. Which part of the cell could have stopped T from getting out of it? [1]



44. The three groups of plants below are on display in Alice's class.



Group A



Group B



Group C

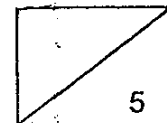
Alice found the plant below and wanted to include them in the class display.

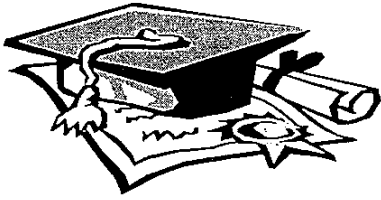


(a) In which group should she put the plant? Explain your answer clearly. [2]

(b) Why do plants disperse their seeds? [2]

(c) What do seeds need to germinate? [1]



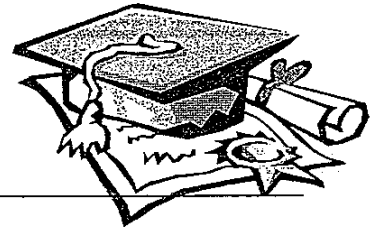


ANSWER SHEET

EXAM PAPER 2010

**SCHOOL : AITONG PRIMARY
SUBJECT : PRIMARY 6 SCIENCE**

TERM : CA1



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

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

31)a)It must be dark and damp.

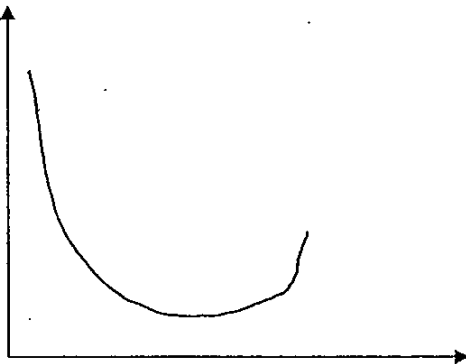
b)Earthworm.

c)The population of organism A will decrease as it is too dry, but it is already adapted to a dark and damp place.

32)a)The population of lions decreased.

b)Yes, the plant population has an effect on the population of lions. If the plant population decreases, the herbivores would compete with each other for food and some of them may die out of hunger. When the population of the herbivores decreases, the lions will have lesser food and they may also end up competing with food too, so the population of the lions decrease.

33)a)



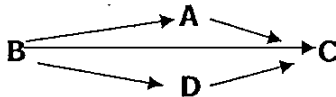
b)They become immune to the pesticide.

- 34) a) Bell jar B and E are the same except for the variable water.
b) Nutrients carbon dioxide.

- 35) a) 1) The water plants provide oxygen for the fish by photosynthesizing.
2) The water plants provide food for the fish.

b) She should not place the fish into Amy's aquarium. The small fish caught might not adapt to the freshwater because its adaptation is to live in seawater, not freshwater, so it may die.

36)



- 37) a) It is a pond community.

b) i) Algae ii) Tilapia

c) The guppy, water flea and the tadpole population will decrease.

- 38) a) i) They have deep and long roots to reach for underground.

ii) They have shallow roots that spread out to absorb as much water as possible when there is an occasional rainfall.

b) Its eyelashes help to prevent the dust from entering its eye.

- 39) Long hands / It allows the monkey to swing from tree to tree.

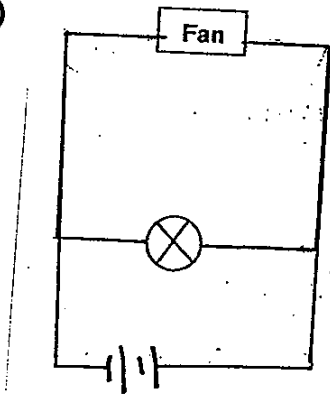
Thick layer of fats / It prevents heat insulation in order for the polar bear to feel warm.

- 40) a) Danny could sprinkle some salt to the crushed ice.

b) It turns from liquid to solid.

c) Heat from the water was lost to the crushed ice and salt mixture causing it to change from the liquid state to the solid state.

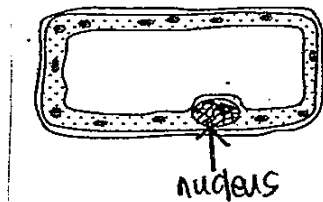
41)



42)a)He was trying to find out if exercising affects the breathing rate the effect of exercising on one's breathing rate.

b)He could collect at least 3 data readings and take the average of the data collected.

43)a)



b)It is the cell membrane.

44)a)Group B. The fruit has hair to float in the air.

b)It is to prevent overcrowding so that the young plant does not compete with its parent plant for space, water, sunlight and nutrients.

c)They need air, water and warmth to germinate.

