AI TONG SCHOOL

2008 SEMESTRAL ASSESSMENT (2)

PRIMARY FIVE SCIENCE

DURATION : 1hr 45 min

DATE: 29 October 2008

INSTRUCTIONS

Do not open the booklet until you are told to do so.
Follow all instructions.
Answer all questions.

Name : _____ ( )

Class : Primary 5 _____

Parent's Signature : _____

Date : _____

Mark	/ 100

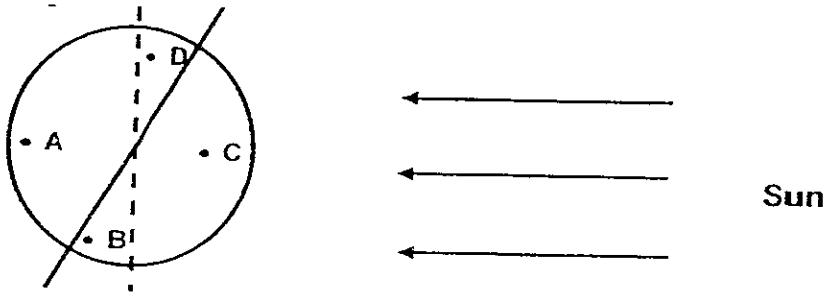
Section A (30 x 2 marks)

For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.**

1. The different phases of the moon are caused by the _____.

(1) rotation of the Earth about its axis
(2) rotation of the Moon about its axis
(3) revolution of the Earth around the Sun
(4) revolution of the Moon around the Earth

2. Amelia and Samantha were chatting over the internet. Amelia told Samantha that she was star-gazing by her bedroom window. Samantha informed Amelia that she was going for a swim under the morning sun.



Based on the diagram of the Earth above, where would Amelia and Samantha be when they were chatting over the internet?

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

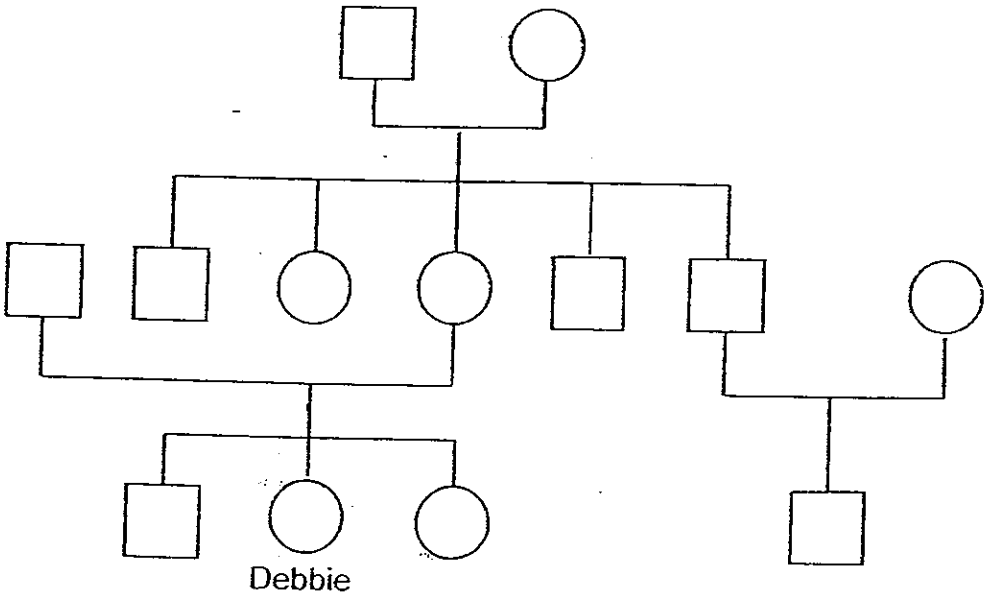
3. Joel made the following statements before studying about satellites.

A: The Sun is a natural satellite.
B: The Moon is a natural satellite of the Earth.
C: Satellites revolve round another smaller object in space.
D: Man-made satellites can be used to record and forecast weather.

Which statements are correct?

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

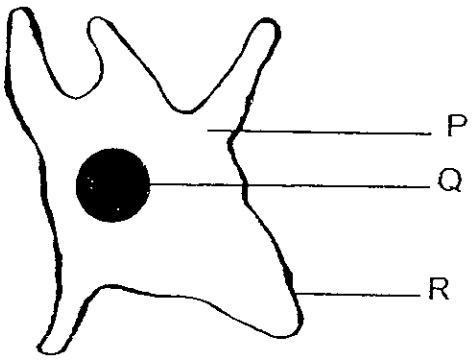
4. The diagram shows Debbie's family tree. Study it and answer the question that follows.



How many siblings does Debbie's mother have?

(1) 7
(2) 6
(3) 5
(4) 4

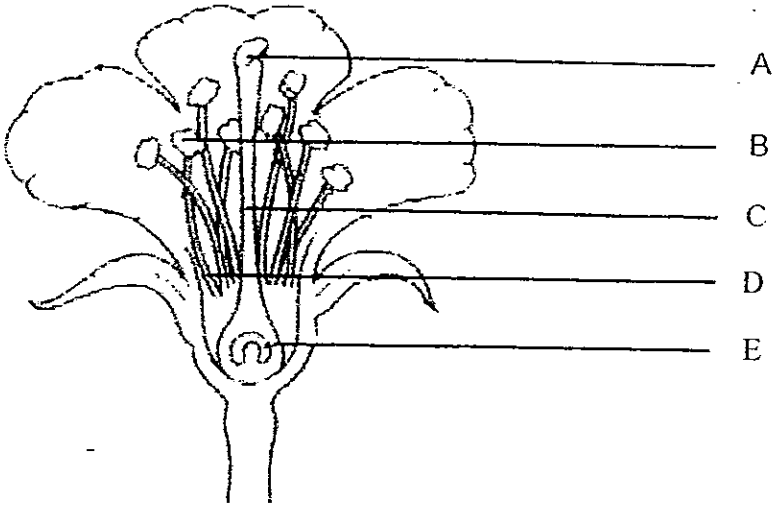
5. Wayne observed a cell under the microscope as shown below. He then recorded the functions of the labelled parts in a table.



Which one of the following shows the functions of the labelled parts correctly?

	Part P	Part Q	Part R
(1)	Controls all the activities in the cell	Allows substances to move around within the cell	Gives the cell a regular shape
(2)	Allows substances to move around within the cell	Controls all the activities in the cell	Controls substances moving in and out of the cell
(3)	Controls substances moving in and out of the cell	Allows substances to move around within the cell	Controls all the activities in the cell
(4)	Allows substances to move around within the cell	Controls all the activities in the cell	Gives the cell a regular shape

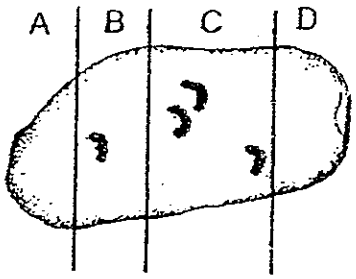
6. The diagram below shows the cross-section of a flower.



The male part of the flower consists of the structures labelled _____.

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

7. Mazlyna cut up a potato into four sections as shown below. She planted each section in a pot of soil.



After a week, Mazlyna noticed shoots growing from two sections. Which two sections of the potato produced shoots?

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

8. The following plants are classified according to their method of fruit dispersal.

Group A	Group B	Group C
Coconut	Rubber	Love Grass
Pong Pong	Balsam	Mango

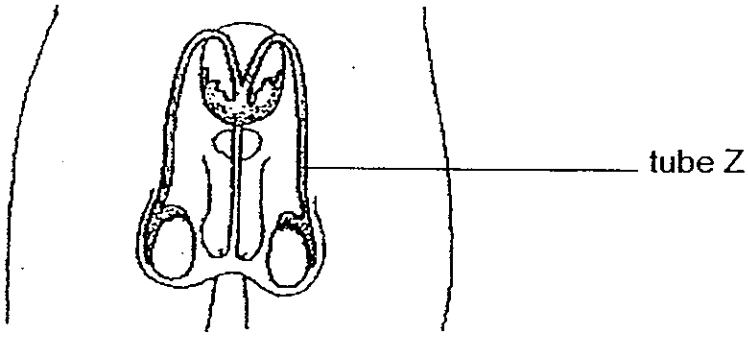
Which one of the following **cannot** be placed in any of the groups above?

(1) Papaya
(2) Nipah
(3) Mimosa
(4) Shorea

9. The characteristics from the female parent are passed on to her children through her _____.

(1) umbilical cord
(2) blood cells
(3) egg cells
(4) womb

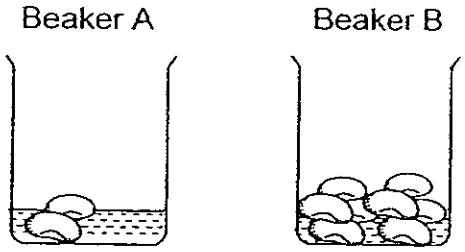
10. The diagram below shows a male reproductive system.



What will happen if tube Z is cut?

(1) No sperms will be produced.
(2) The testes will become smaller.
(3) The flow of urine will be hindered.
(4) The egg will not be fertilised by the sperms during mating.

11. Gerald carried out an experiment using some bean seeds and 2 similar beakers. He put some cotton wool and poured 5 ml of water into each beaker. He placed two bean seeds in Beaker A and eight bean seeds in Beaker B. He left the two beakers near the window.



What do you think was Gerald's aim for the experiment?

His aim was to find out if the _____ affects the rate of germination.

(1) presence of sunlight
(2) number of seeds
(3) amount of water
(4) type of seeds

12. Which of the following shows the process of respiration correctly?

(1) carbon dioxide + water $\xrightarrow{\text{respiration}}$ oxygen + glucose

(2) glucose + oxygen $\xrightarrow{\text{respiration}}$ carbon dioxide + energy

(3) oxygen + water $\xrightarrow{\text{respiration}}$ carbon dioxide + energy + glucose

(4) glucose + oxygen $\xrightarrow{\text{respiration}}$ carbon dioxide + energy + water

13. Roy used a piece of black paper to cover a part of a healthy leaf of a plant as shown in Diagram A. He left the plant in the sun for one day. Then, he plucked the leaf, removed the black paper and divided the leaf into three parts, X, Y and Z as shown in Diagram B. Next, he conducted an iodine test on each part of the leaf.

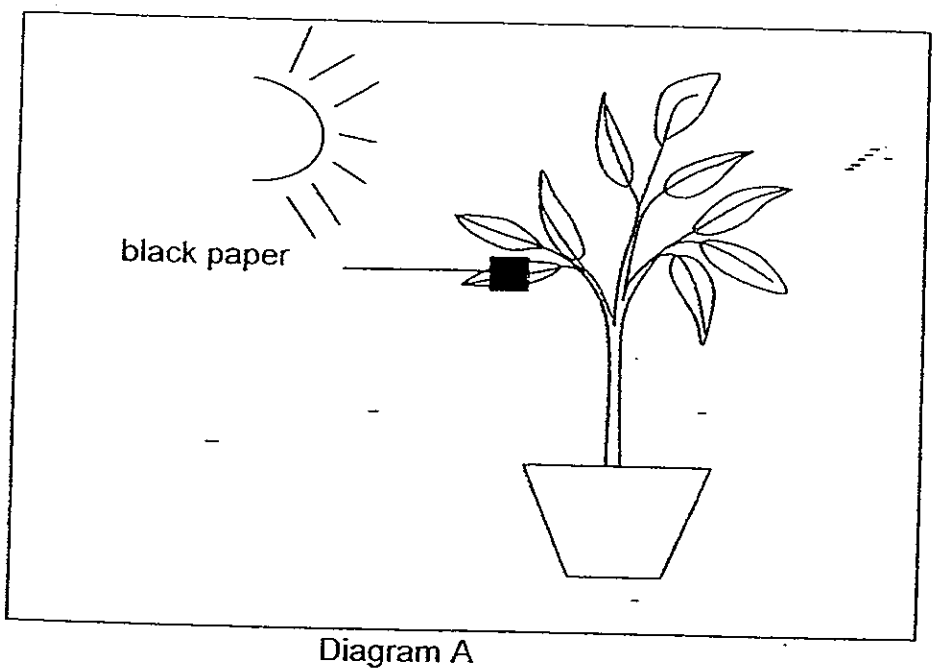


Diagram A

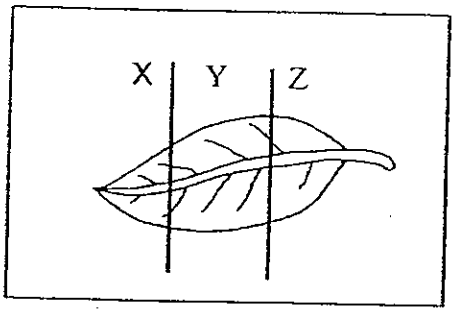


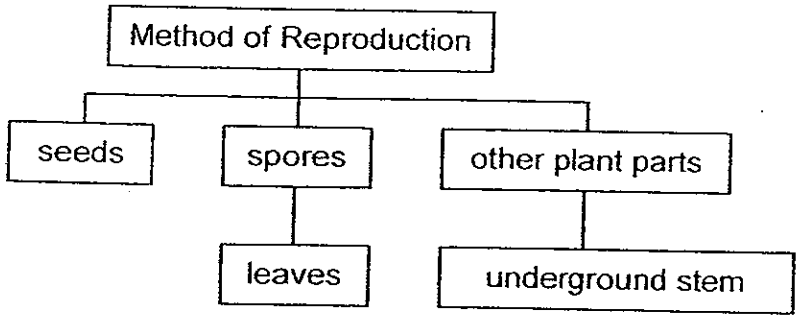
Diagram B

What was the colour of the drop of iodine on each part of the leaf?

	X	Y	Z
(1)	dark blue	dark blue	dark blue
(2)	dark blue	yellowish brown	dark blue
(3)	yellowish brown	dark blue	yellowish brown
(4)	yellowish brown	yellowish brown	yellowish brown

14. Which one of the following classification diagrams correctly represents the method of reproduction of plants?

(1)



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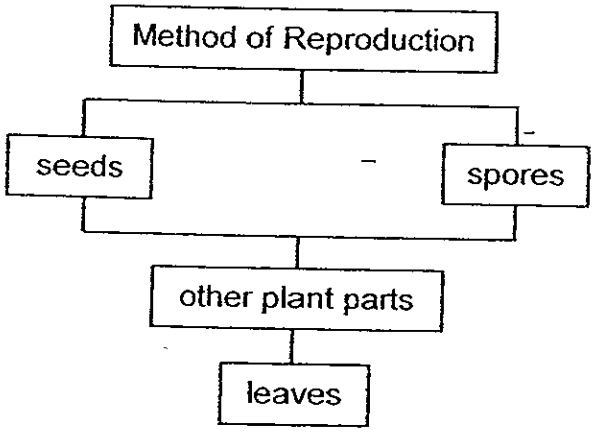
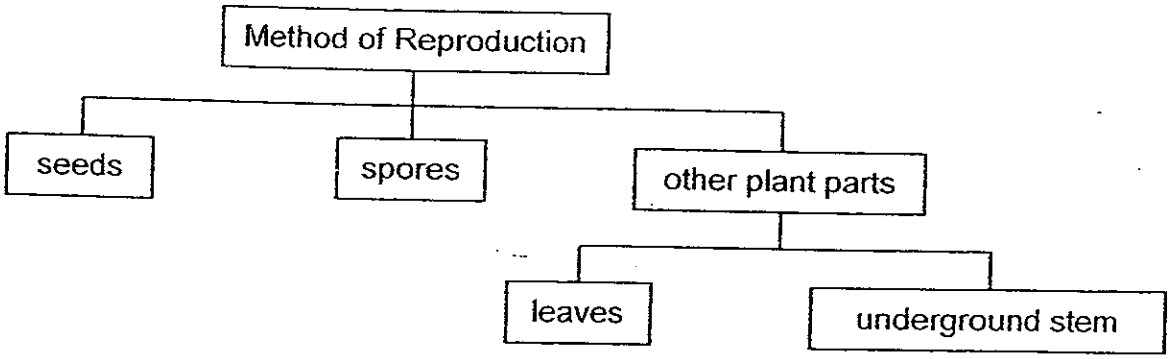
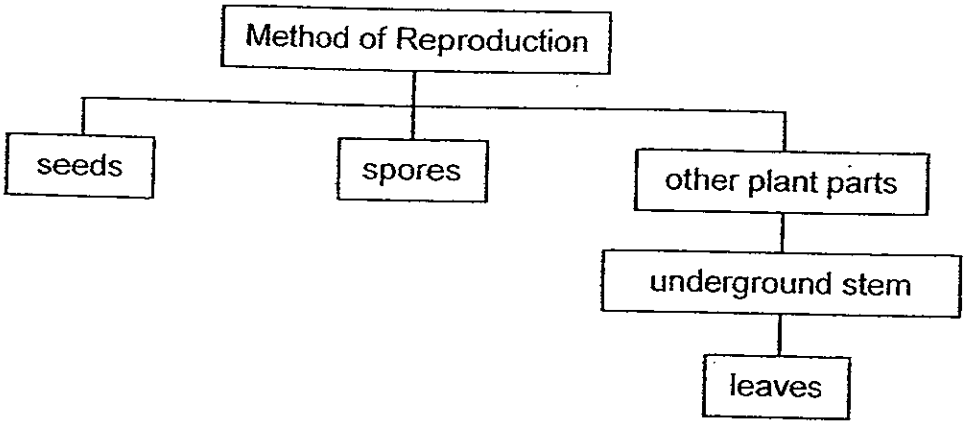


(3)



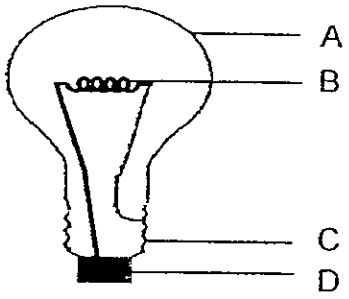
(4)



15. Rubber is used to cover electric wires because rubber _____.

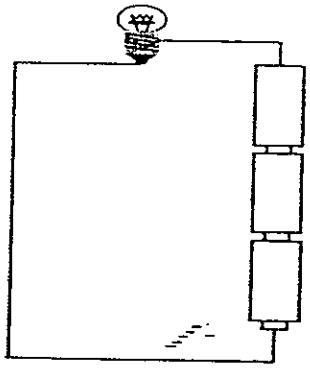
(1) is a metal
(2) holds the wires together
(3) is an insulator of electricity
(4) is a conductor of electricity

16. Which labelled parts must be connected to a battery for the bulb to light up?

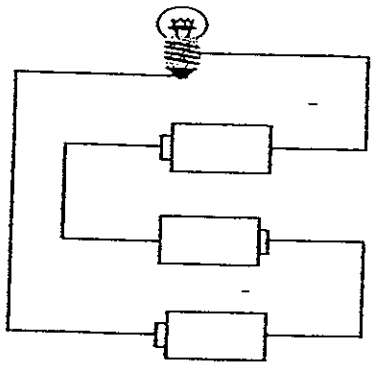


(1) A and B
(2) B and C
(3) B and D
(4) C and D

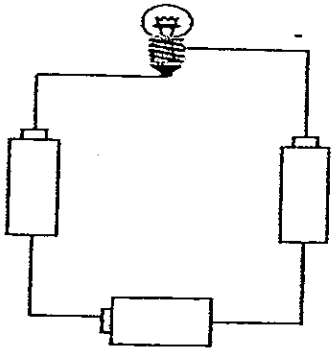
18. Mr Wan showed four of his pupils the following electric circuit.



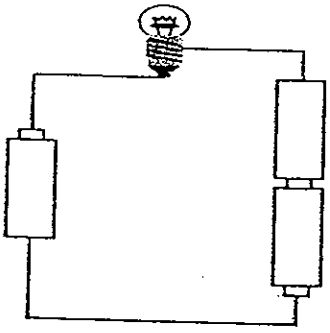
He wanted his pupils to set up electric circuits that were similar to the electric circuit he had constructed. The following circuits were set up by each of his four pupils.



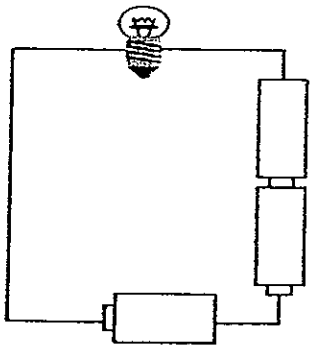
Jan



April



May

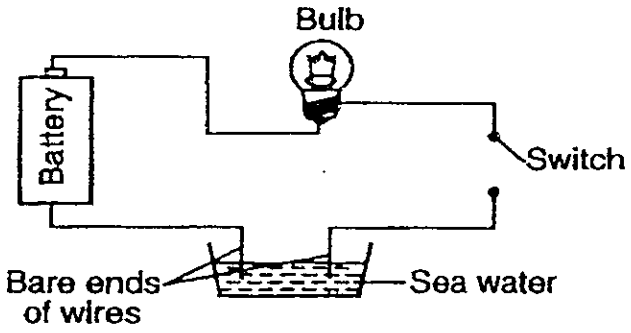


June

In which of the circuits set up by the pupils would the bulb light up as brightly as Mr Wan's?

(1) May only
(2) Jan and May only
(3) May and June only
(4) April and June only

17. The following experiment was set up by Gene.



What would happen if he closed the switch?

A: The bulb would fuse
B: The bulb would light up
C: The bulb would not light up
D: The water would become warmer

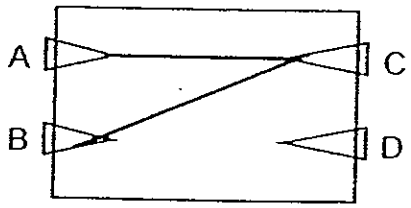
(1) A only
(2) C only
(3) B and D only
(4) C and D only

19. Danny used a circuit tester to test a circuit card. He recorded what happens to the bulb when each pair of clips is tested in the table below.

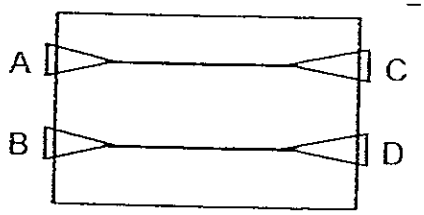
Clips tested	Does the bulb light up?
A and B	No
A and C	Yes
A and D	Yes
B and C	No
B and D	No
C and D	Yes

Which of the following shows the correct way in which the clips are connected by the wires in the card?

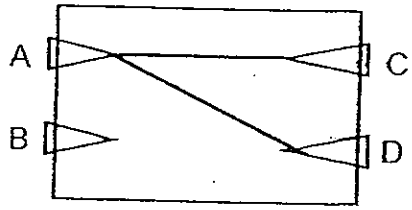
(1)



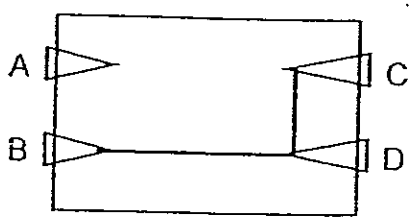
(2)



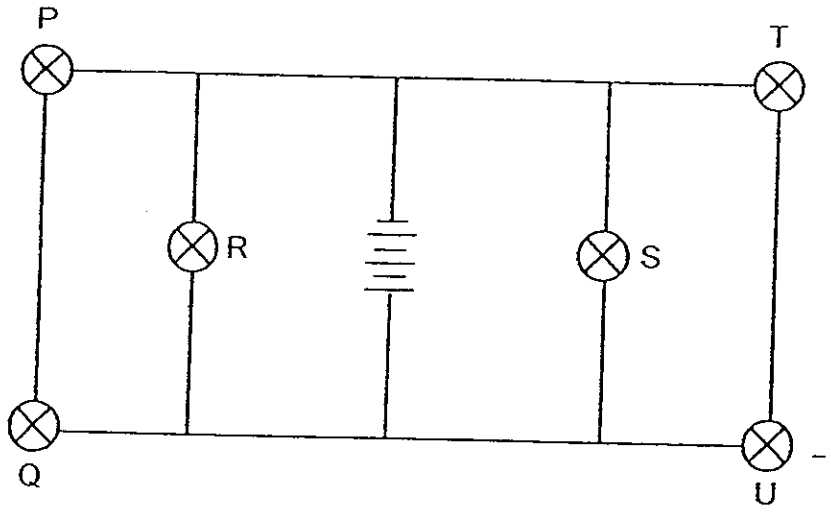
(3)



(4)



20. Tanya constructed an electric circuit as shown in the circuit diagram below. She used 3 batteries to light up 6 bulbs. What will happen if bulb P and bulb S are faulty?



(1) Bulbs R, T and U will light up.
(2) Bulbs Q, T and U will light up
(3) All the other bulbs will light up.
(4) All the other bulbs will not light up.

21. Which of the following actions use pushing forces?

A: Lifting the lid of a pot
B: Typing on a keyboard
C: Picking a fruit from a tree
D: Replacing the cap of a pen

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

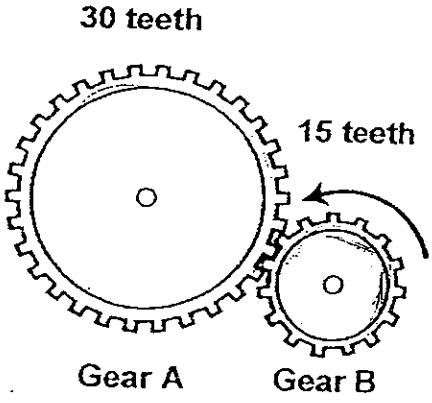
22. Carl and Lewis were playing table-tennis. When Carl hit the ball over the net, Lewis hit it back harder. Which of the following describe the actions of the force at the point when Lewis's racket hit the ball?

The force applied by Lewis caused the ball to _____.

A: stop moving
B: change direction
C: increase in speed
D: decrease in speed

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

23. Gears A and B are set up as shown in the diagram below.



If Gear A makes 3.5 turns in the clockwise direction, how many turns will Gear B make?

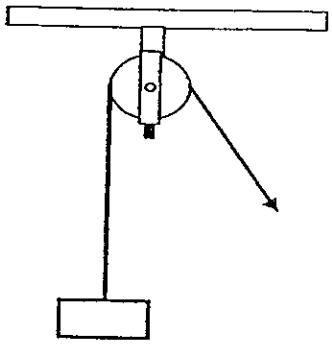
(1) 2 turns
(2) 3.5 turns
(3) 5.5 turns
(4) 7 turns

24. If Roland wants to use less effort to lift a load with a lever, he should _____.

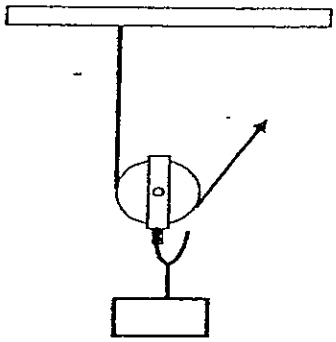
A: move the fulcrum closer to the load
B: move the fulcrum further from the load
C: apply the effort closer to the fulcrum
D: apply the effort further from the fulcrum

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

25. Nick assembled two pulley systems as shown below.



pulley system 1



pulley system 2

Which one of the following statements is true?

1) The direction of effort is changed in pulley system 2.
2) The effort is about the same as the load in pulley system 1.
3) The effort moves the same distance as the load in pulley system 2.
4) The load moves in the same direction as the effort in pulley system 1.

26. Penny carried out an experiment with 3 inclined planes, X, Y and Z, using 3 planks of different lengths. The height of each inclined plane was 25cm. She set up the apparatus as shown in the diagram below.

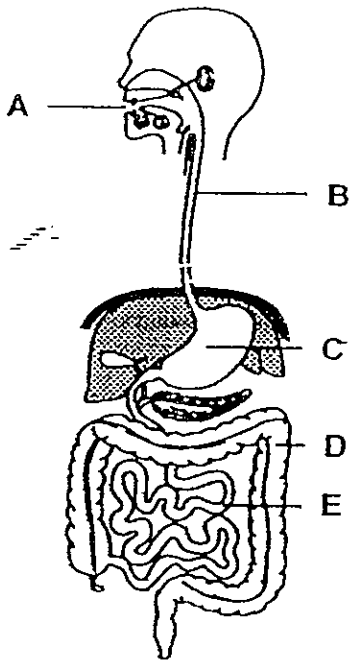
She measured the force used to move a load of 400g up each inclined plane and recorded the results in the table shown below.

Inclined plane	Force used
X	120g
Y	190g
Z	250g

Which of the following statements correctly explains Penny's observations?

(1) Inclined plane Z is the longest.
(2) Inclined plane X is the steepest.
(3) Inclined plane X is steeper than inclined plane Z.
(4) Inclined plane Y is steeper than inclined plane X.

27. The diagram below shows the human digestive system.



Digestive juices are necessary for digestion of food. They can be found in _____.

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

28. Brooke filled two balloons with equal amounts of air as shown in Diagram A. Then, she deflated one of the balloons and observed the result as shown in Diagram B.

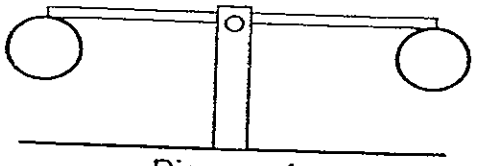


Diagram A

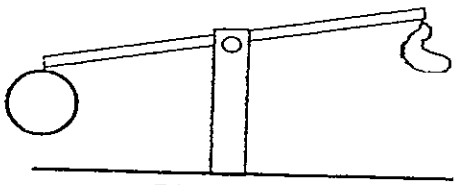
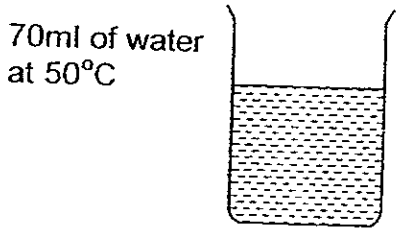


Diagram B

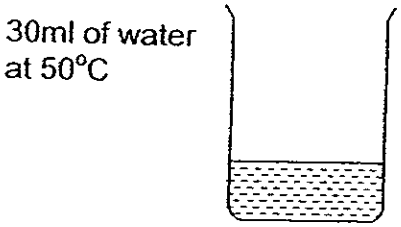
Which property of air was Brooke investigating in the experiment?

(1) Air has mass
(2) Air occupies space
(3) Air has a definite shape
(4) Air has a definite volume

29. The diagram below shows two similar beakers, X and Y. Beaker X contains 70ml of water while Beaker Y contains 30ml of water. The water in both beakers has the same temperature, which measures at 50°C.



Beaker X



Beaker Y

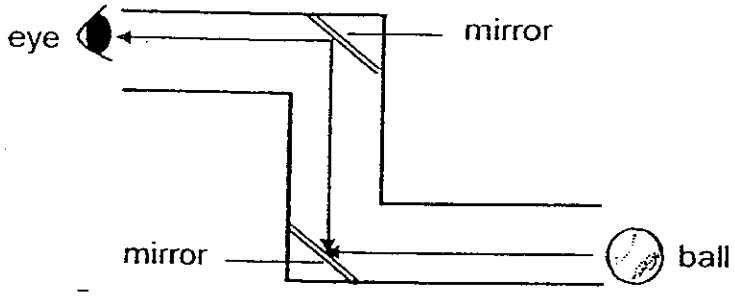
Which of the following statements about both beakers of water is true?

A The water in Beaker X has more heat than the water in Beaker Y.
B The water in Beaker Y has more heat than the water in Beaker X.
C Both beakers of water have the same amount of heat and temperature.
D Both beakers have the same temperature but different amounts of heat.

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

30. Which of the following diagrams traces the path of light correctly to enable the eye to see the ball?

(1)



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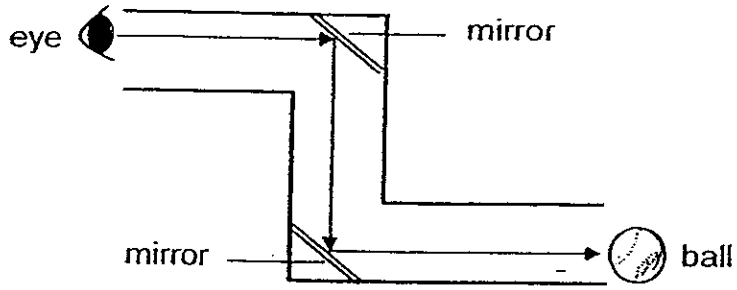

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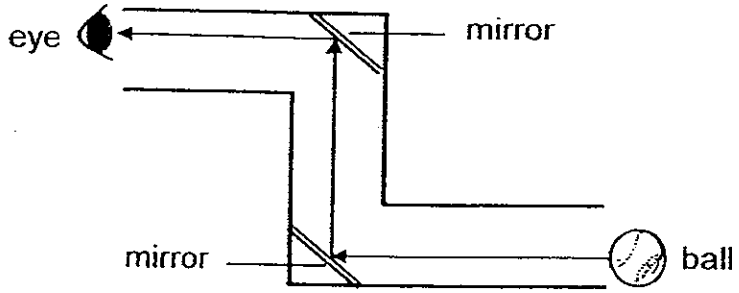

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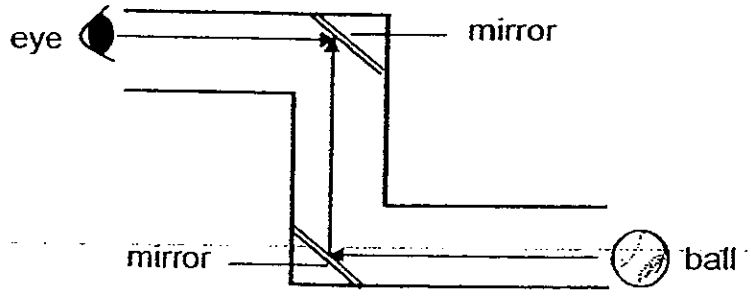
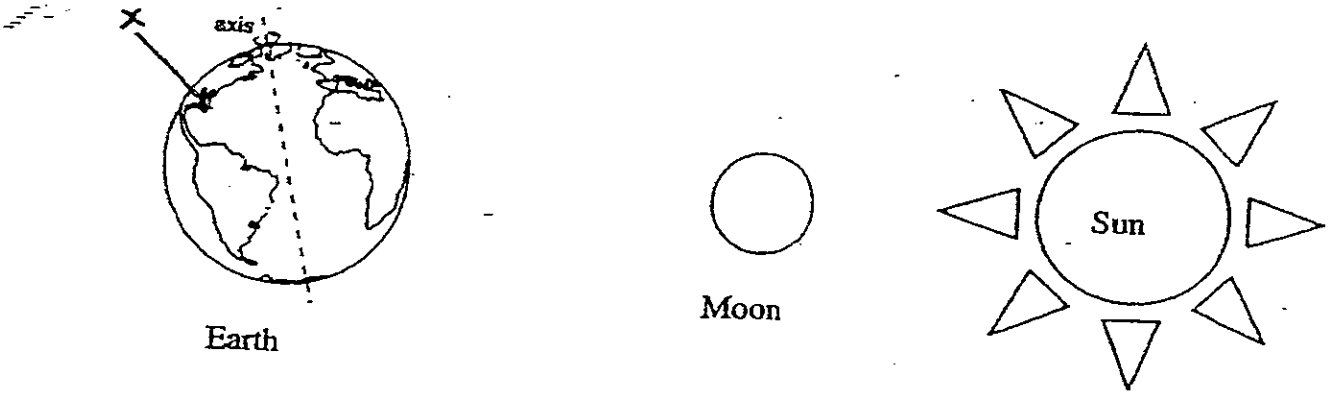


Name: _____ ( )
Class P5 ( )

Section B: 40 marks
Read the questions carefully and write down your answers in the spaces provided.

31. The diagram below shows the Earth, the Moon and the Sun in a straight line.



Sarah lives in Country 'X' as indicated in the diagram.
At 10 pm on 17 October 2008, she looked up at the sky to look for the Moon.

(a) Will Sara see the Moon? Explain your answer clearly. [1]

_____

_____

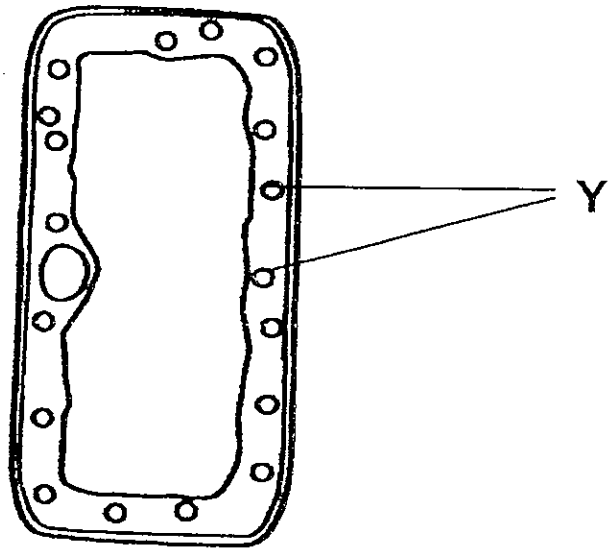
_____

(b) How many days later will Sara see the full moon? [1]

_____

2

32. Study the diagram of a cell shown below carefully.



(a) What is the function of the part labelled Y? [1]

_____

_____

(b) Karen viewed some onion cells through a microscope.

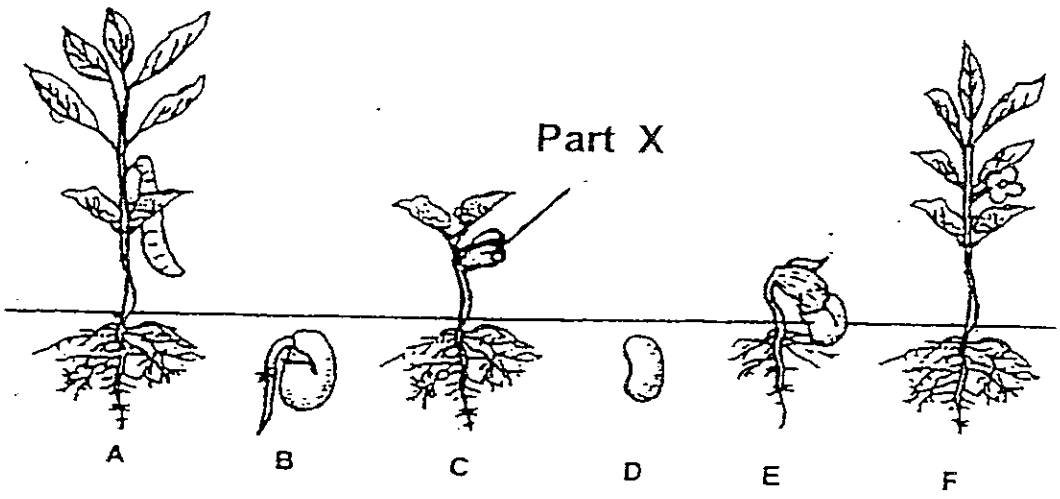
She could not find the part labelled Y. What can you conclude from Karen's observation? [1]

_____

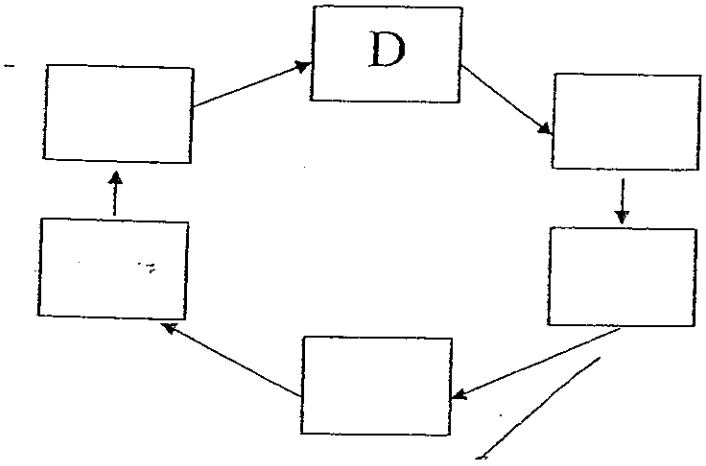
_____

2

33. The diagram below shows the stages of growth of a bean plant.



(a) Complete the life cycle of a bean plant by writing the corresponding letters of the stages of growth in the boxes below.
One of the stages has been filled for you. [1]



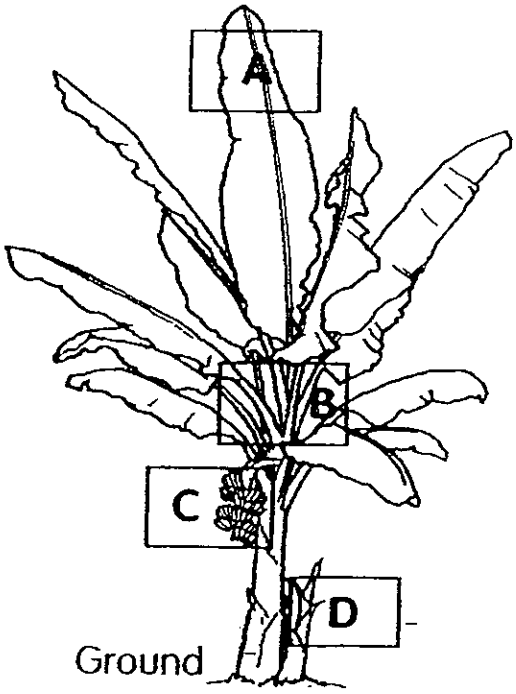
(b) What happens to part X as the plant continues to grow?
Give a reason for your answer. [1]

_____

_____

2

34. . Observe the diagram shown below.



(a) Which part A, B, C or D can be used to produce another banana plant? [1]

_____

_____

(b) An adult banana plant dies soon after producing a bunch of fruits. How is this beneficial to the survival and continuity of the banana plant? [1]

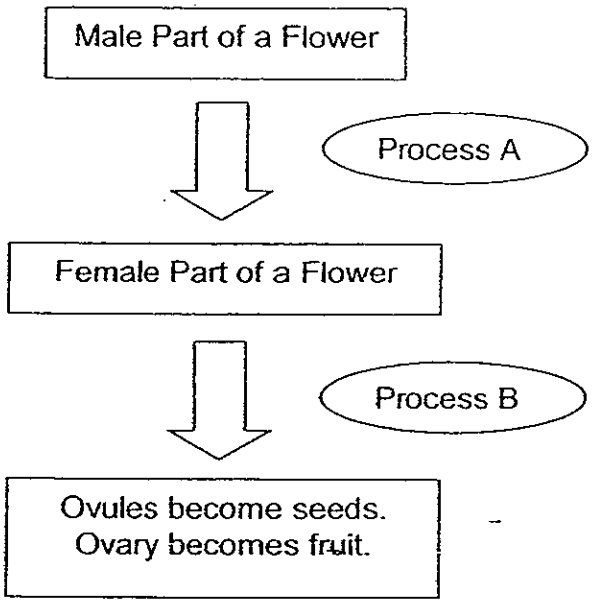
_____

_____

_____

2

35. Study the diagram below.



(a) Identify the two processes involved in the above diagram. [1]

Process A : _____

Process B : _____

(b) Suggest a way by which Process A in the above diagram can take place. [1]

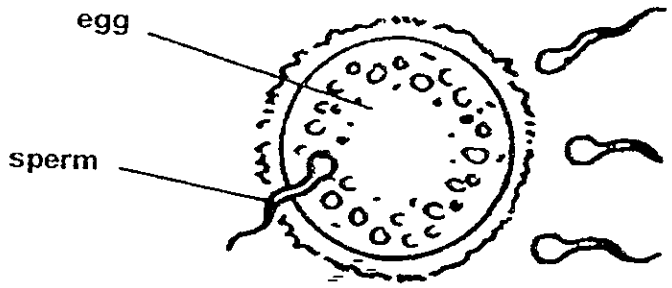
_____

_____

_____

2

36. The diagram below shows the fusion of an egg and a sperm.



Put a tick (✓) in the box to indicate whether the statement is 'True', 'False' or 'Not Possible To Tell'. [2]

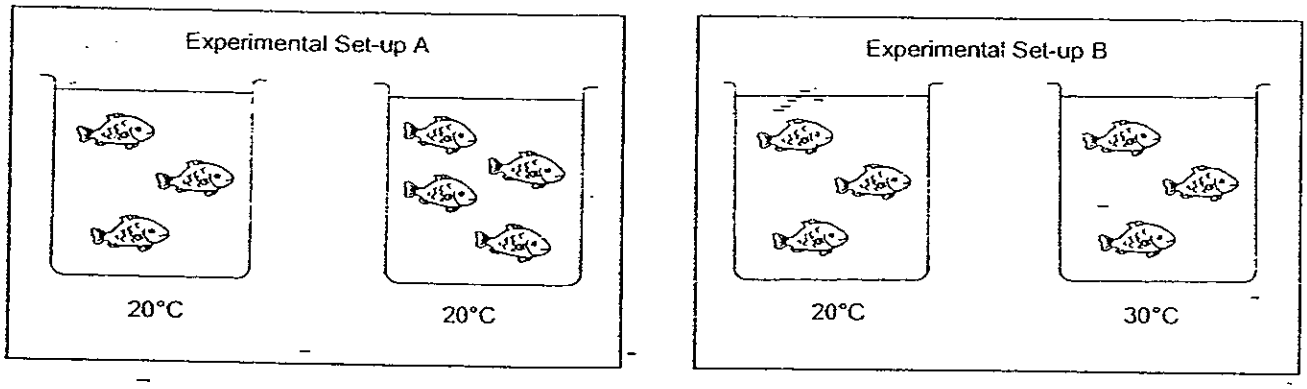
	Statement	True	False	Not Possible To Tell
(a)	The process shown above takes place inside the body of a female animal.			
(b)	A few sperms must fuse with the egg before fertilization can occur.			
(c)	The fertilized egg develops in the stomach of the female animal.			
(d)	A male young will develop from the above process.			

2

37. Shi Hui decides to design an experiment to test out the following hypothesis:

Fish breathe faster at higher temperatures.

Study the two experimental set-ups as shown below. Both set-ups are placed under normal room temperature.



(a) Which experimental set-up is suitable for testing the hypothesis? Explain your answer. [1]

_____

_____

(b) Give one variable that must be kept constant in the experiment. [1]

_____

_____

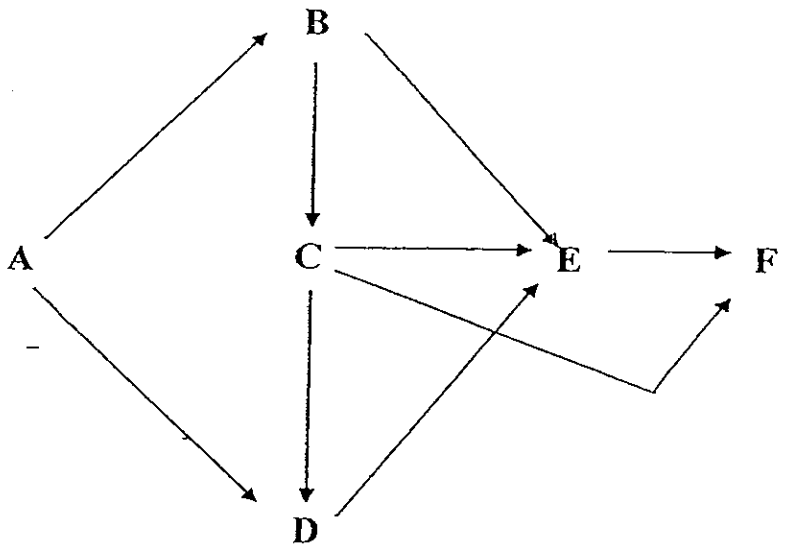
(c) To measure how fast or slow a fish is breathing in the experiment, which of the following observations should Shi Hui use? Put a tick (√) in the correct box. [1]

☐ The number of times a fish comes up to the surface to breathe.

☐ The number of times a fish opens its mouth in a minute.

3

38. The diagram below shows the flow of energy from one organism to another.



(a) Which organism in the diagram is a herbivore?

[1]

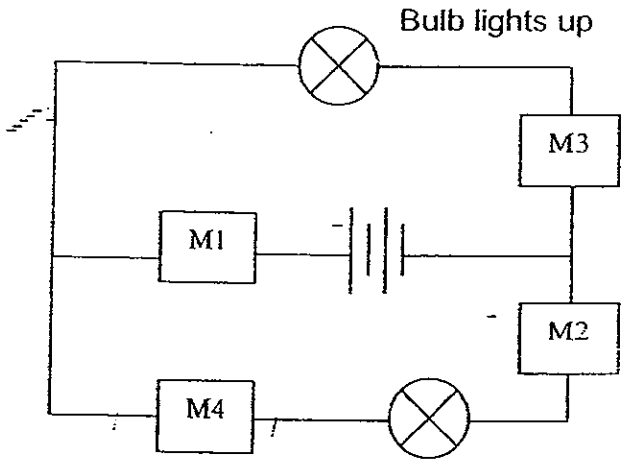
(b) Which organism in the diagram depends on more than two types of animals as a direct source of energy?

[1]

2

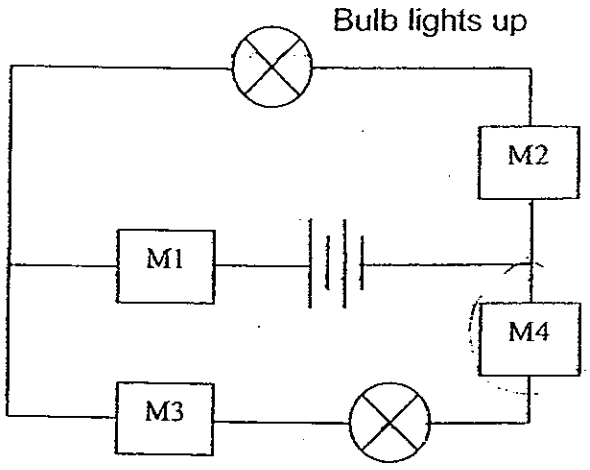
39. Lauren and Lance had four materials, M1, M2, M3 and M4. They wanted to find out which material is a conductor of electricity.

Firstly, they connected the four materials in a circuit as shown in the diagram below and made their observations.



Bulb does not light up

Next, they rearranged some of the materials in the same circuit as shown in the diagram below and made their observations.



Bulb does not light up

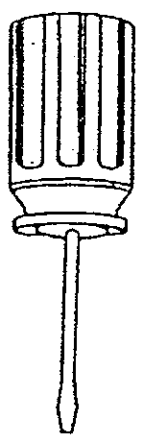
Based on the two observations recorded, what could Lauren and Lance conclude about the four materials? Write M1, M2, M3 and M4 under the correct heading.

[2]

Conductor of Electricity	Insulator of Electricity

2

40. Mr Lee had two types of screwdrivers. He wanted to remove a screw from a plank of wood.



Screwdriver A

Screwdriver B

(a) Which screwdriver, A or B, should he use if he wants to use less effort? Explain your choice. [1]

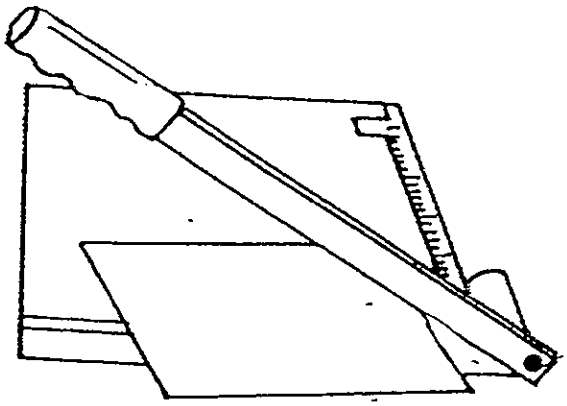
_____

_____

_____

(b) The diagram below shows a paper cutter which represents a lever. [2]

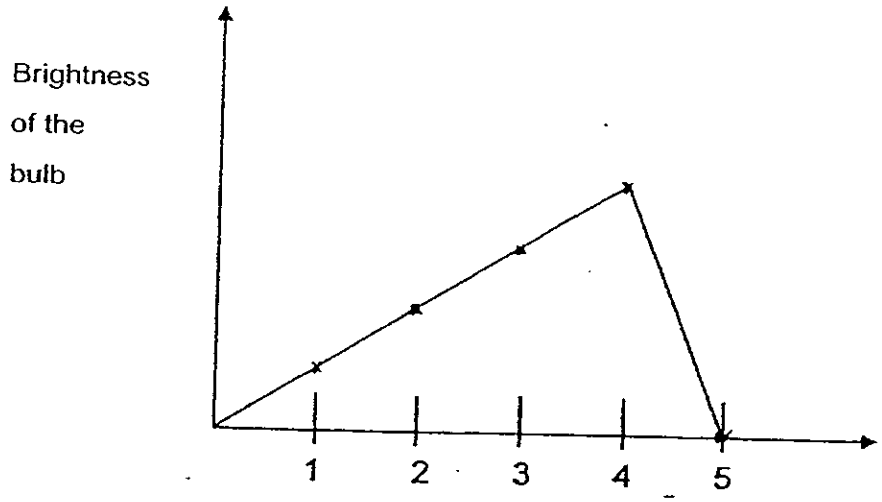
(i) Draw an arrow to show the direction of the effort applied to cut the paper.
(ii) Label the fulcrum with the letter 'F' on the diagram.



3

41. A group of pupils carried out an investigation to find out if the number of batteries affects the brightness of a bulb in an electric circuit.

The following graph shows what they had observed during the experiment.



(a) By observing the graph, how do you think the batteries are arranged in the circuit? [1]

_____

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

_____

_____

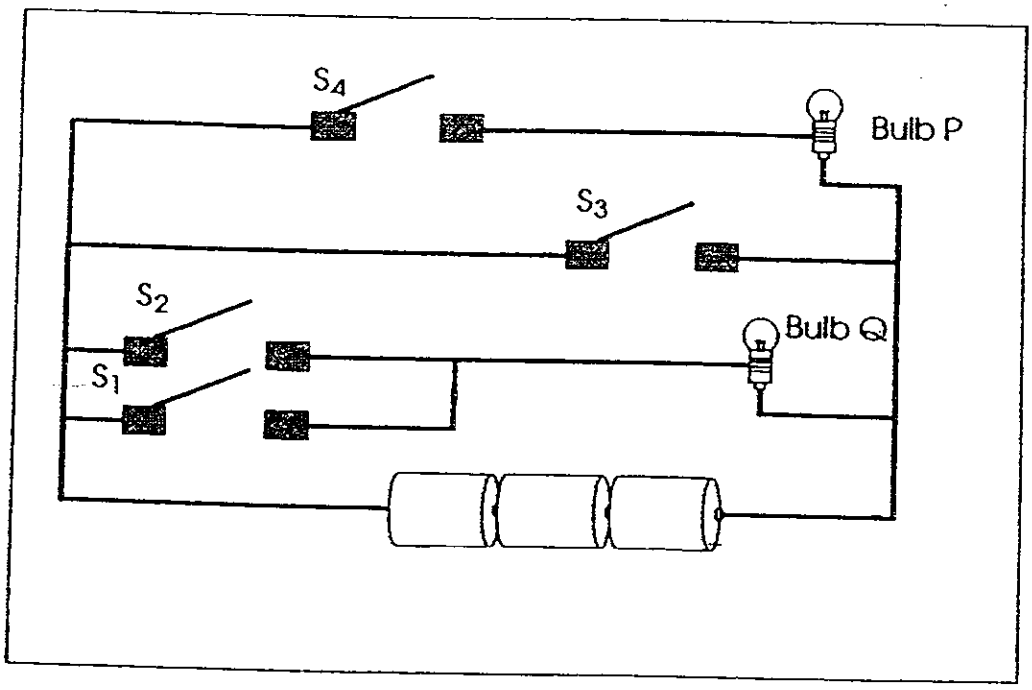
(c) What happened to the bulb when five batteries were used in the circuit? Explain clearly. [1]

_____

_____

3

42. Study the electric circuit below carefully.

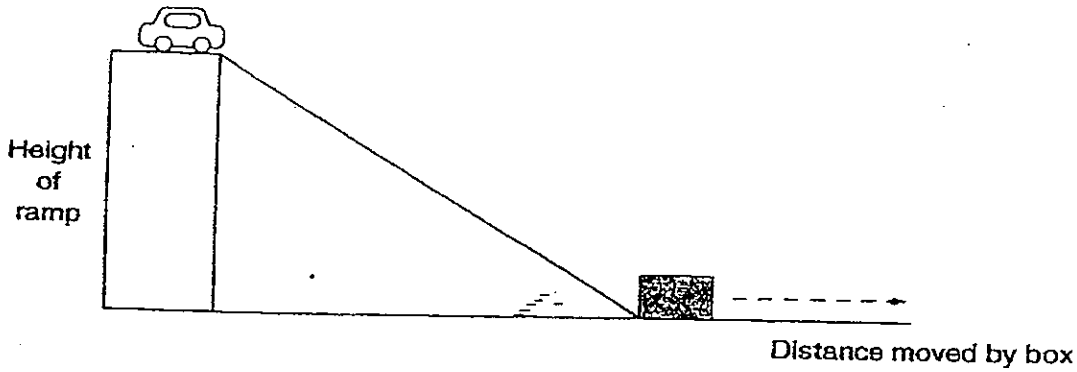


Put a tick (✓) in the box if the bulb lights up. [3]

		Bulb P	Bulb Q
(a)	When switches S1 and S3 are closed		
(b)	When switches S2 and S4 are closed		
(c)	When switches S2 and S3 are closed		

3

43. An experiment was set up by Chee Wei as shown in the diagram below.



When the toy car was released, it hit the styrofoam box at the foot of the ramp. The styrofoam box then moved in the direction indicated. The distance moved by the styrofoam box was measured.

Chee Wei increased the height of the ramp. He recorded his results in the table shown below.

Height of ramp (cm)	6	12	18	24
Distance moved by the styrofoam box (cm)	4	8	12	16

(a) What was the aim of Chee Wei's experiment? [1]

_____

_____

_____

(b) What is the relationship between the height of the ramp and the distance moved by the styrofoam box? [1]

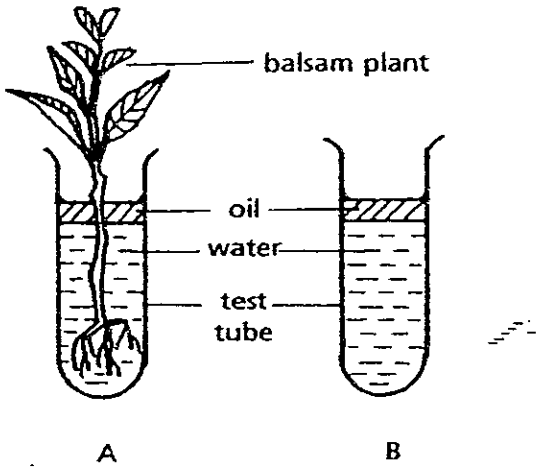
_____

_____

_____

2

44. Jasper conducts the following experiment as shown below.



The roots of the balsam plant are washed and then placed in test tube A. Another similar test tube, B, is set up without a balsam plant. The same amount of water is poured into both test tubes. Then, a layer of oil is added to cover the surface of the water in each test tube. Both test tubes are placed on a table in his room.

(a) After a few days, what will Jasper observe about the water level in the two test tubes? [1]

_____

_____

(b) Why does Jasper need to add oil into the test tubes? [1]

_____

_____

(c) What can Jasper conclude from this observation? [1]

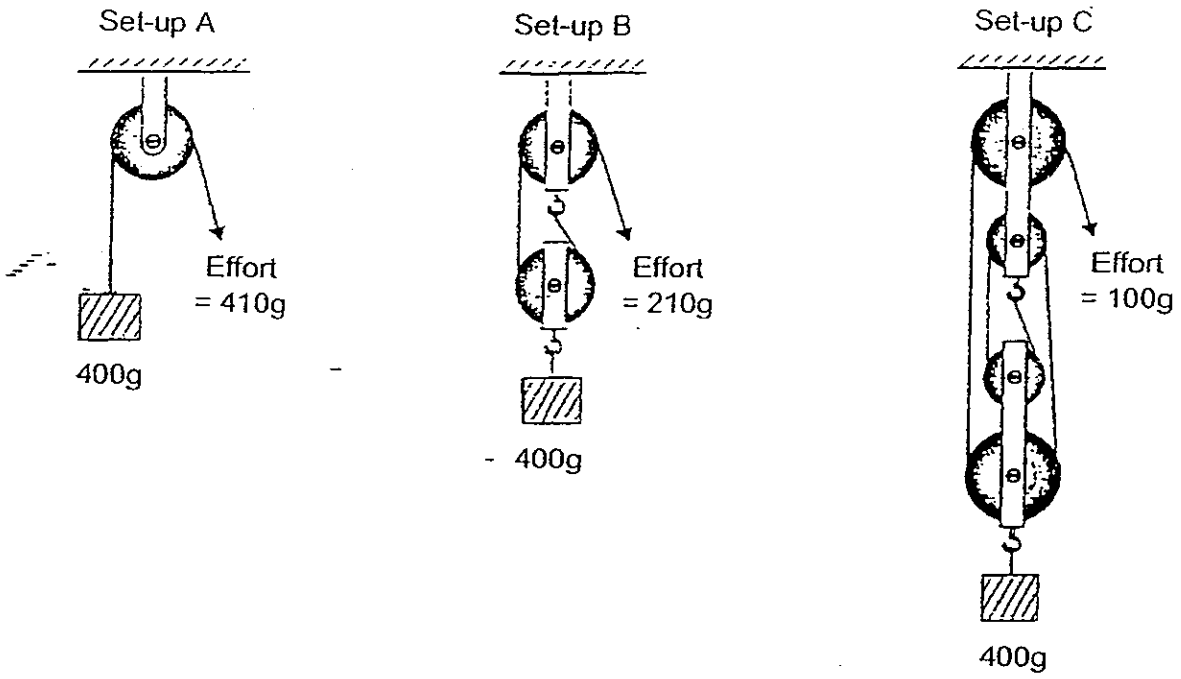
_____

_____

3

45. Mark carried out an experiment with 3 sets of pulleys. He set up the experiment as shown below.

He observed the effort needed to raise the load in each set-up.



(a) From the set-ups above, what pattern do you notice about the number of pulleys and the effort needed to raise the load? [1]

_____

_____

(b) If the load in set-up C is increased to 800g, what would be the amount of effort needed to lift the load? [1]

_____

_____

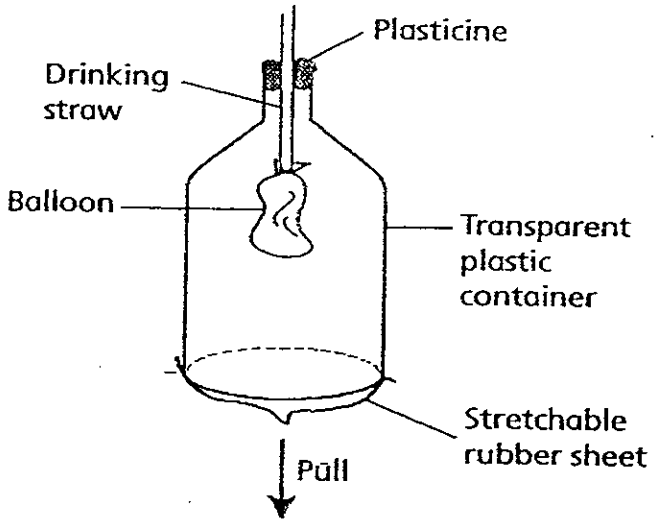
(c) State an advantage of using a combined pulley system at a construction site. [1]

_____

_____

3

46. Yiling constructs a set-up as shown below to represent one of the systems in our human body.



When she pulled the stretchable rubber sheet, the balloon became inflated. When she released the rubber sheet, the balloon became deflated.

(a) This set-up showed how one of the systems in our body works. What is the system called? [1]

_____

(b) Identify the part represented by each of the items used in the set-up. [1]

Straw: _____

Balloon: _____

(c) When we breathe out onto a mirror, the mirror becomes misty or 'blurred'. Explain why. [2]

_____

_____

_____

4

ANSWER SHEET

EXAM PAPER 2008

SCHOOL : AITONG PRIMARY SCHOOL
SUBJECT : PRIMARY 5 SCIENCE

TERM : SA 2

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

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

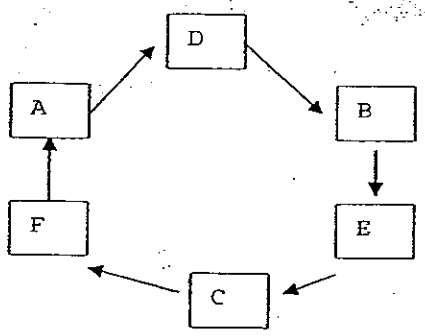
31)a)Sara will not see the Moon. This is because the moon is between the Earth and the sun, thus the sunlight of the sun is unable to shine on moon.

b)14 days later.

32)a)Y helps to trap sunlight and make food for the plant.

b)Onion cells does not have chloroplasts, thus it is a underground stem that does not make food and photosynthesis.

33)a)



b)Parts X shrivels because al the stored food has been used up.

34)a)Part D can be used to produce another banana plant.

b)The adult banana plant will not compete with its suckles for food water and space.

35)a)A: Pollination B: Fertilisation

b)The insects can help to pollinate the flower by sucking up the nectar of the plant and the pollen grains will stick on the insects body, so when the insect went to another flower to suck up the nectar of the flower it will transfer the pollen grains from another flower to this flower.

36)a)True b)False c)False d)Not

37)a)There is only one changed variable, which is the temperature of water.

b)The number of fish.

c)The number of times a fish opens its mouth in a minute.

38)a)Organism B. b)Organism E

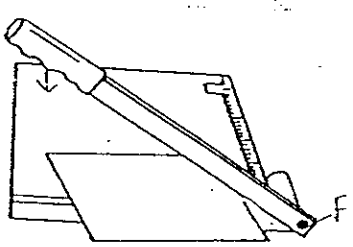
39)M1 M4

M2

M3

40)a)The diameter of the wheel of A is bigger than that of B.

b)



41)a)The batteries are placed in series method.

b)This is because the more the number of batteries is placed, the brighter the bulb.

c)The bulb was fused as there is too much current flower through the circuit.

42)a)Bulb Q b)Bulb P c)Bulb Q d)Bulb Q

43)a)Chee Wee wanted to find out if the height of the ramp will affect the distance moved by the Styrofoam box.

b)The greater the height of the lamp, the greater the distance moved by the Styrofoam box.

44)a)The water level in A will decrease while the water level in B will remain the same.

b)To prevent less of water in the test tubes by evaporation.

c)The roots hair of balsam plant takes in water.

45)a)The more the number of pulleys, the lesser effort is used.

b)The amount of effort will be 200g.

c)It helps to reduce the effort used.

46)a)The respiratory system.

b)Straw: Windpipe.

Balloon: Lung.

c)The air that we breathe out is warm, thus when it touch on the surface of the mirror, it condenses it becomes misty.