NAN HUA PRIMARY SCHOOL
CONTINUAL ASSESSMENT 1 2018
PRIMARY SIX
SCIENCE

Name : _____ ( )

Class : Primary 6 / ____

Date : 7 March 2018

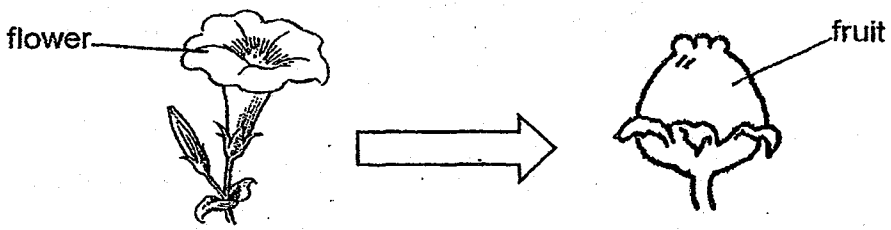
Duration : 1 hr 45 min

MARKS	
Sect A:	/ 56
Sect B:	/ 44
Total :	**/ 100**

Parent's Signature : _____

Section A: (28 x 2 marks = 56 marks)
For each question from 1 to 28, 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. What are the two processes that take place before a flower becomes a fruit?



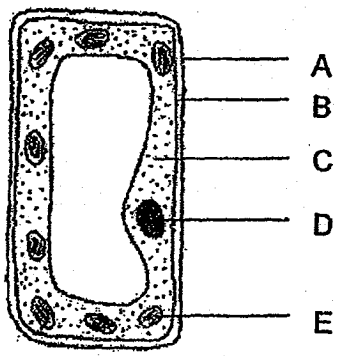
(1) Pollination and fertilisation
(2) Germination and pollination
(3) Germination and fertilisation
(4) Pollination and seed dispersal

2. Which of the following statement(s) is/are correct about the human reproductive system?

A Sperms are produced in the testes.
B The embryo develops in the womb of the female.
C One female egg can be fertilised by many sperms.
D Fertilisation of the egg occurs in the female human reproductive system.

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

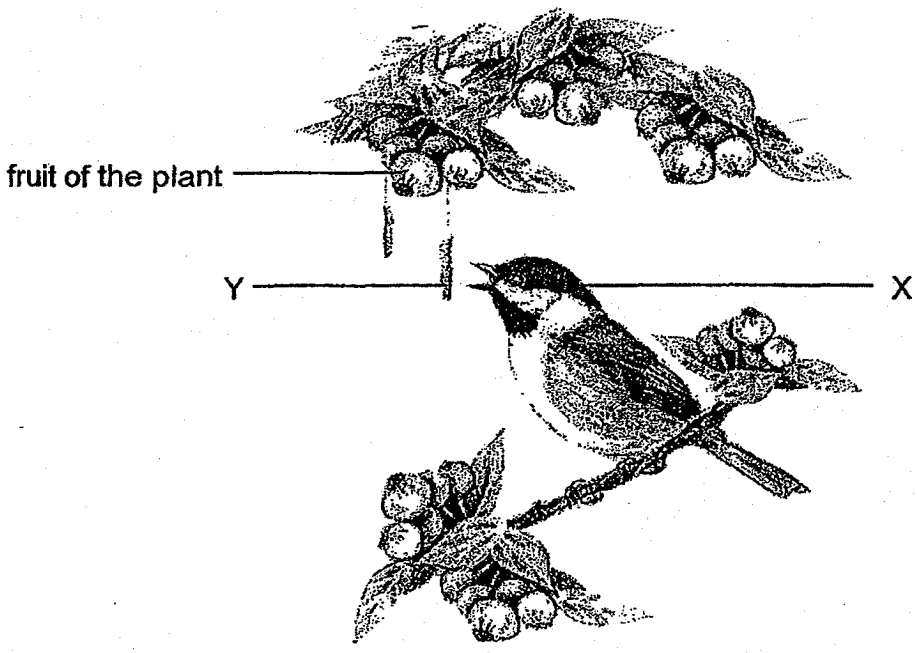
3. The diagram below shows a plant cell with different parts labelled A, B, C, D and E.



Which one of the following identifies the parts of the cell correctly?

	can also be found in animal cells	controls the movement of substances in and out of the cell	contains chlorophyll to trap light
(1)	A, B and D	A	C
(2)	A, B and C	B	D
(3)	B, C and D	B	E
(4)	B, C and D	A	E

4. Dan spotted organism X on a plant. Organism X feeds on both the fruit of the plant and organism Y. Organism Y feeds on the leaves of the plant.



He then wrote the following statements.

A The plant gets its energy from the soil it grows in.
B Organism Y gets its energy from the plant as it feeds on it.
C Organism X gets its energy from the plant and organism Y as it feeds on them.

Which of the above statements is/are true?

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

5. The table below shows the characteristics of four organisms, P, Q, R and S. A tick (✓) indicates that the organism has the characteristic.

Organism	Has feathers	Lives in water	Lays eggs	Has 3 body parts
P			✓	✓
Q			✓	
R	✓		✓	
S		✓		✓

Which one of the following statements about organisms P, Q, R and S is correct?

(1) Organism P is a reptile.
(2) Organism Q is an insect.
(3) Organism R is a bird.
(4) Organism S is a fish.

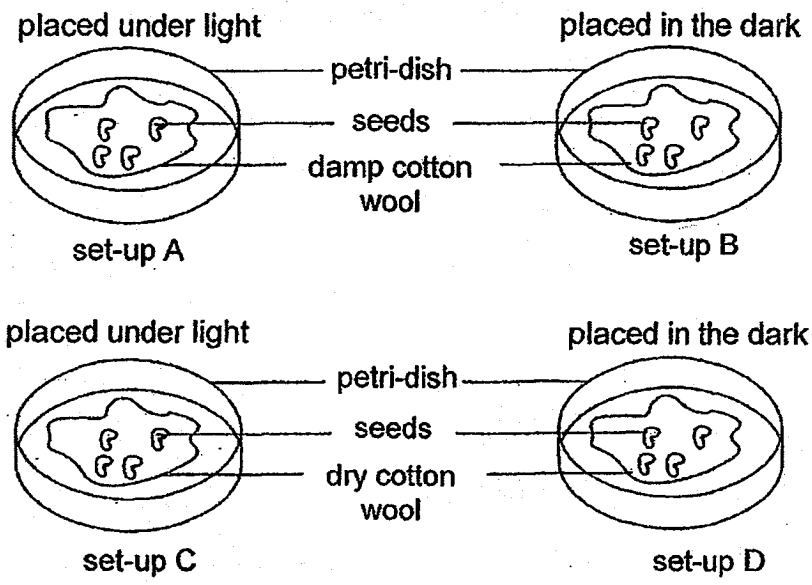
6. Eric wanted to make observations of the life cycle of a beetle. He kept the young of a beetle, W, X, Y and Z, in four separate containers. The young are at different stages of development. He then placed 20 g of food next to each of them. He measured the mass of food left in the containers after two days and recorded the results in the table shown below.

Young of the beetle	Mass of food left after two days (g)
W	16
X	8
Y	10
Z	20

Which of the following young of the beetle, W, X, Y or Z, is most likely to be in the pupa stage?

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

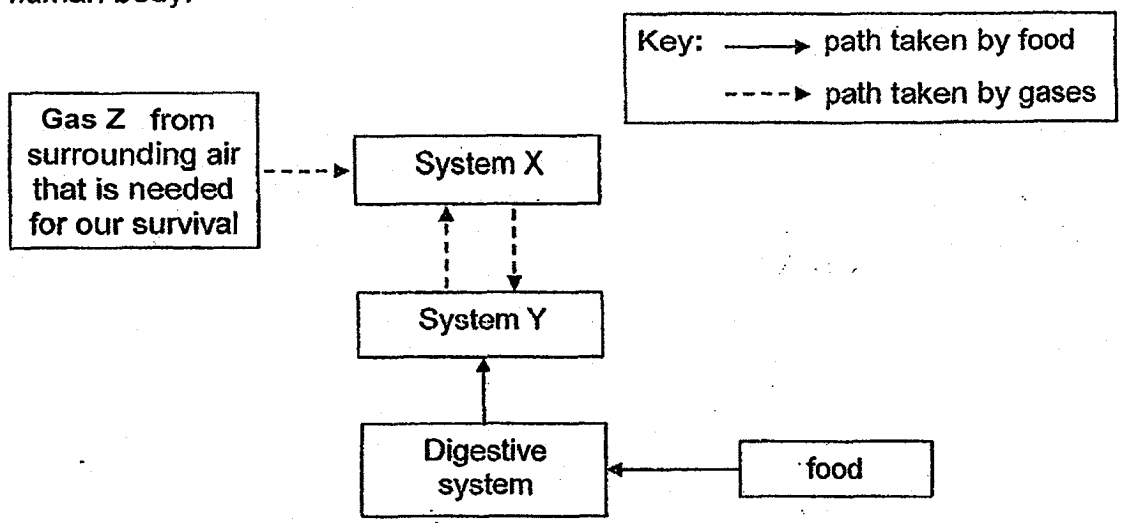
7. Mary carried out an experiment in a warm room using the four set-ups shown below.



Which set-up(s) did the seeds **not** germinate?

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

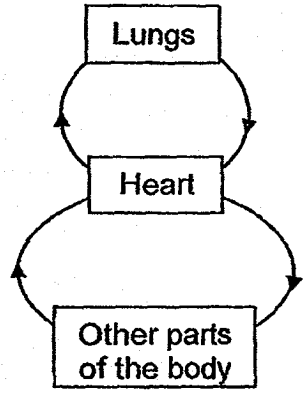
8. The diagram below shows how food and various gases are transported in the human body.



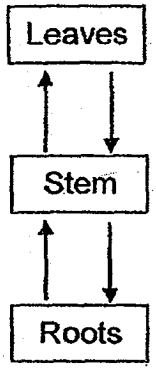
Identify system X, system Y and gas Z.

	System X	System Y	Gas Z
(1)	Respiratory	Circulatory	Oxygen
(2)	Respiratory	Circulatory	Carbon dioxide
(3)	Circulatory	Respiratory	Oxygen
(4)	Circulatory	Respiratory	Carbon dioxide

9. The diagrams below show the direction of the flow of materials in the human circulatory system and the plant transport system.



Human Circulatory System



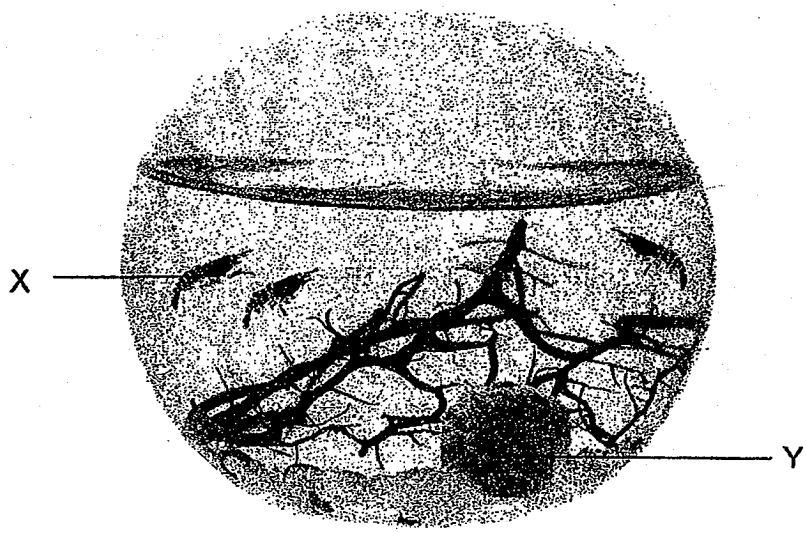
Plant Transport System

Which statements about the two systems are correct?

A Both systems transport food and water only.
B Both systems use tubes to transport materials.
C Both systems transport materials in one direction only.
D The human circulatory system has a heart to pump materials around whereas the plant transport system does not.

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

10. Amy recently bought an ecosphere as shown below.



An ecosphere is a fully enclosed system. X is an animal whereas Y is a plant. X feeds on Y. The organisms in it do not need any additional food source to survive. However, Amy needs to make sure that the ecosphere is placed in a location that has sunlight.

Which of the following is/are the reason(s) for Amy to place the ecosphere in a location that has sunlight?

A Y gets its energy from the Sun directly.
B X gets its energy from the Sun indirectly.
C The Sun provides nutrients for the survival of Y.

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

11. Many power stations burn fossil fuels such as coal and natural gas to generate electricity for our daily uses.

We need to conserve such energy sources because fossil fuels _____.

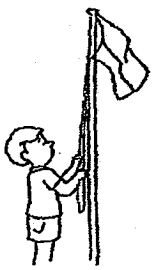
A are renewable
B are our only source of energy
C take millions of years to form
D help the environment to stay clean when we burn it

Which of the above statements is/are correct?

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

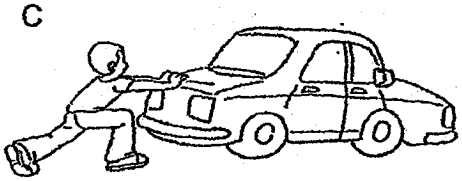
12. Study the diagrams below carefully.

A

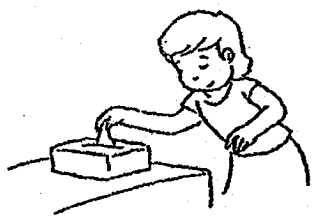


B

C



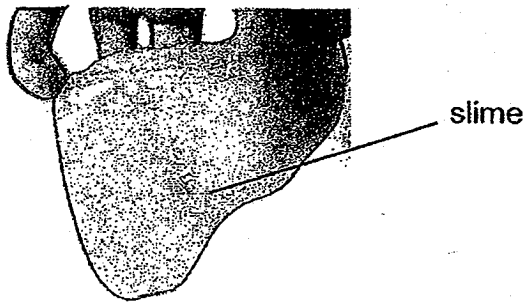
D



Which activity **does not** involve a push force?

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

13. Alan is playing with some slime by kneading the slime.



What is the effect of the force on the slime?

(1) Make the slime move faster.
(2) Change the mass of the slime.
(3) Change the shape of the slime.
(4) Increase the volume of the slime.

14. Study the diagram below.

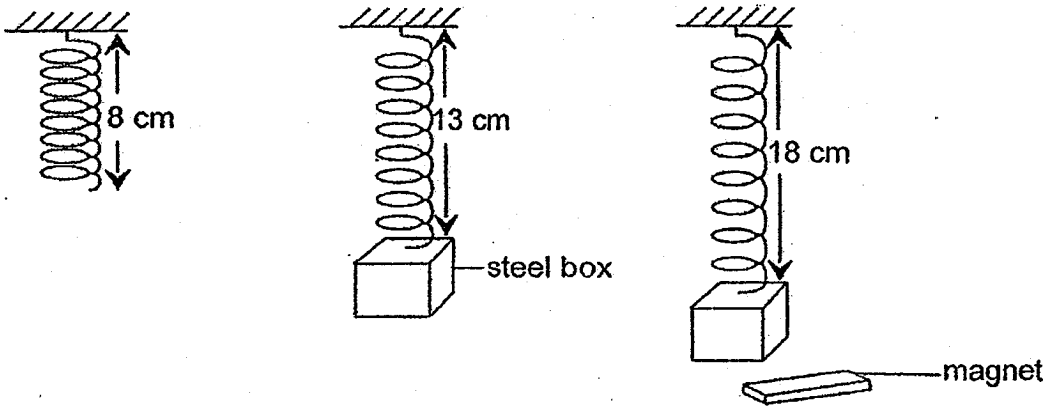


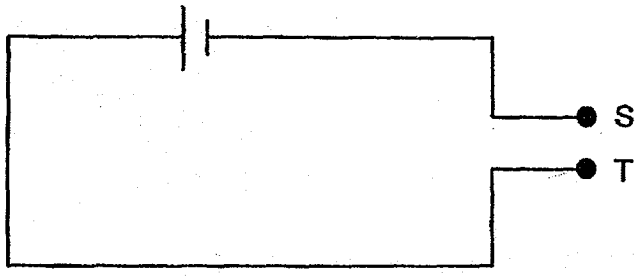
diagram 1 diagram 2 diagram 3

Which type(s) of forces cause(s) the spring to extand in diagrams 2 and 3 above?

A Magnetic force acting on the steel box.
B Elastic spring force exerted by the spring.
C Gravitational force acting on the steel box.
D Frictional force acting between the steel box and the spring.

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

15. Frank created a circuit tester as shown below because he wanted to test the electrical conductivity of some materials. He connected points S and T to the material that he was testing.

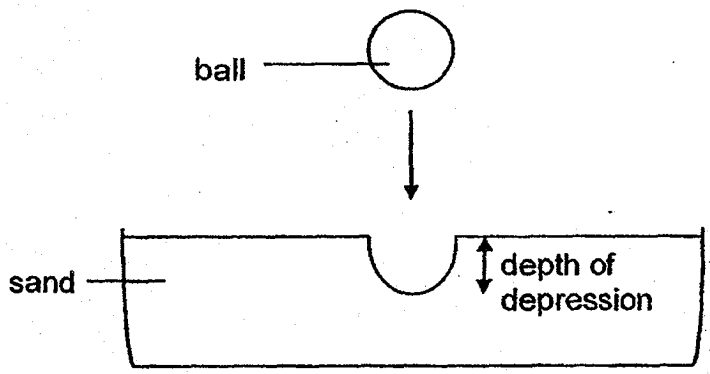


However, his teacher told him that his circuit tester will not work.

What can Frank do to make sure that his circuit tester will allow him to know if the material he is testing is a conductor of electricity?

(1) Add a bulb.
(2) Add a switch.
(3) Use a shorter wire.
(4) Use two batteries instead of one.

16. Gerard dropped four identical balls into a tray of sand from different heights.



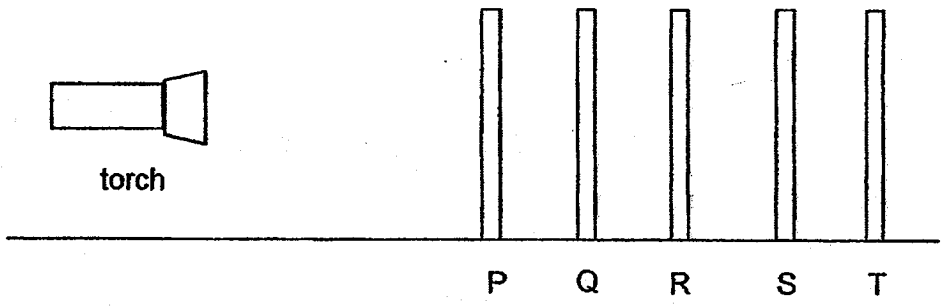
He then measured and recorded the depth of the depression made by the balls in the table below.

Ball	Depth of depression (mm)
A	8
B	4
C	15
D	10

Which one of the balls was dropped from the lowest height above the sand?

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

17. Henry set up an experiment to find out which of the card(s), P, Q, R, S and T, allow(s) light to pass through. Each card is of the same size and thickness. He cut out a star-shaped hole in the middle of one of the cards.



He turned on the torch and a bright star-shaped patch of light is seen on card S.

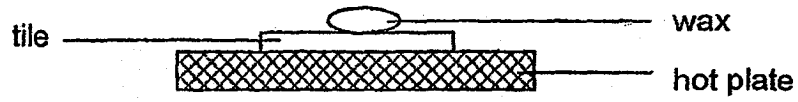
His friends made four statements about his experiment.

A None of the cards is translucent.
B Henry cut the star-shaped hole in card S.
C Both cards P and Q do not allow light to pass through them.
D Out of the first three cards, P, Q and R, at least two of them must allow light to pass through them.

Which of the above statements is/are definitely correct?

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

18. Ismail carried out an experiment to find out the heat conductivity of four types of tiles, A, B, C and D. The tiles are of the same size, shape and thickness. Ismail placed an identical drop of wax on each of the tile and placed the tile on a hot plate as shown below.



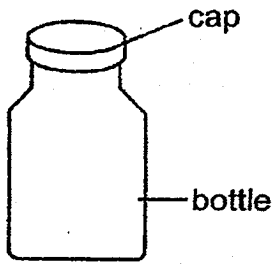
He recorded the time taken for the wax to melt completely in the table below.

Tile	Time taken for the wax to melt completely (s)
A	45
B	89
C	27
D	103

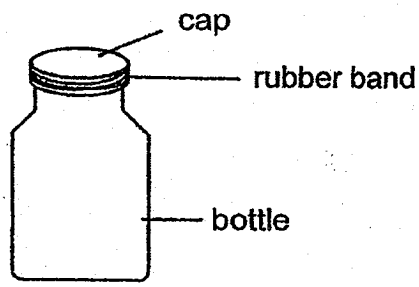
Which one of the following correctly arranges the tiles from the best conductor of heat to the poorest conductor of heat?

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

19. Alan found it difficult to turn the cap of a bottle of milk.



After he wound a rubber band around the cap, he could turn the cap more easily.



Why was Alan able to turn the cap more easily when he wound the rubber band around the cap?

(1) The rubber band reduced the friction between the cap and the hand.
(2) The rubber band reduced the friction between the cap and the bottle.
(3) The rubber band increased the friction between the cap and the hand
(4) The rubber band increased the friction between the cap and the bottle.

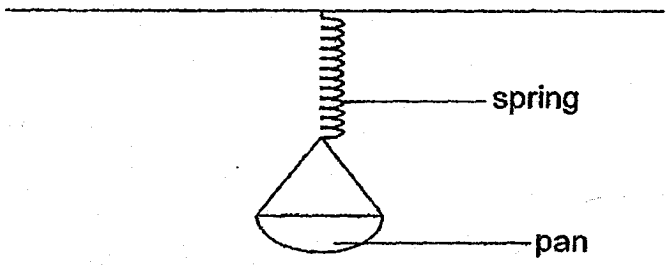
A ping pong ball was pushed with the same amount of force across four different surfaces, W, X, Y and Z. The table below shows the distance travelled by the ping pong ball before it came to a stop.

Surface	W	X	Y	Z
Distance travelled (cm)	67	15	33	55

Which of the following correctly describes the amount of frictional force between the ping pong ball and the surfaces?

(1) The friction between surface X and the ping pong ball is the least.
(2) The friction between surface W and the ping pong ball is the greatest.
(3) The friction between surface Y and the ping pong ball is greater than the friction between surface Z and the ping pong ball.
(4) The amount of frictional force between the ping pong ball and all the four surfaces is the same.

21. Study the diagram below.

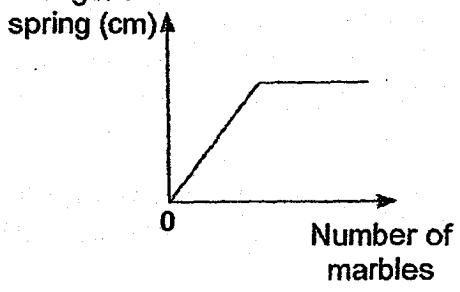


Identical marbles were placed on the pan, one by one, and the following results were recorded in the table below.

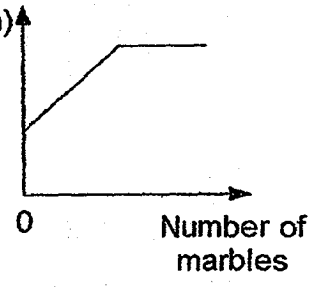
Number of marbles on the pan	1	2	3	4	5	6	7
Length of spring (cm)	6	8	10	12	14	14	14

Which graph correctly shows the data recorded?

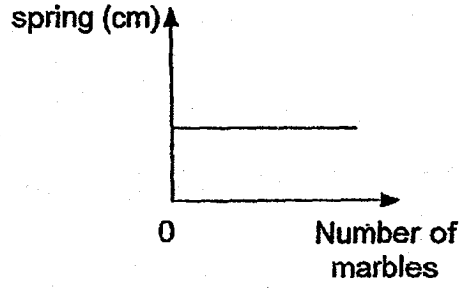
(1)



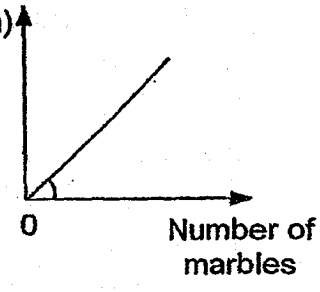
(3)



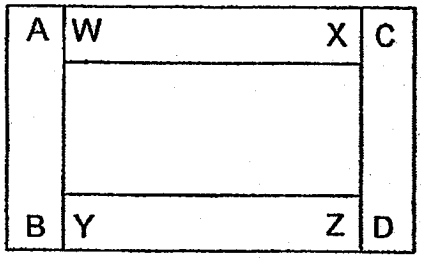
(2)



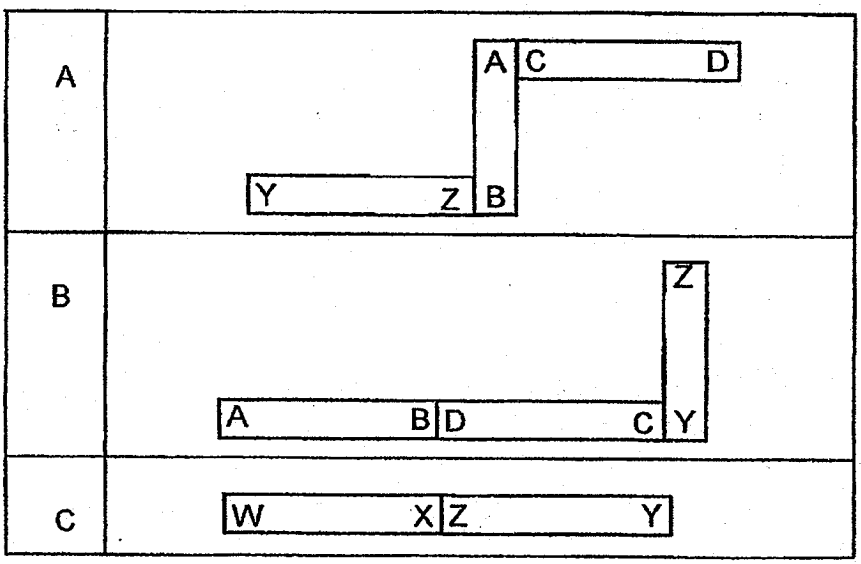
(4)



22. Four pieces of magnets were put together and their ends were marked as shown below.

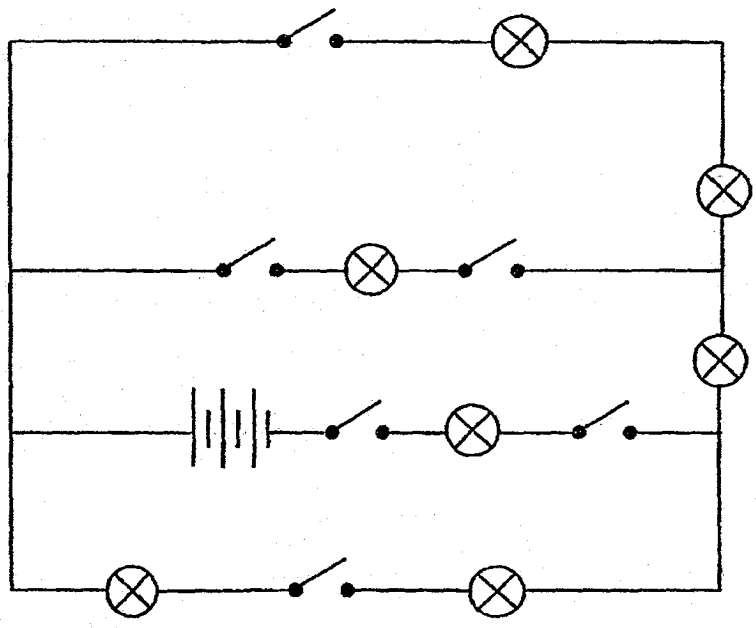


Which of the arrangements shown below are possible?



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

23. The diagram below shows a circuit.

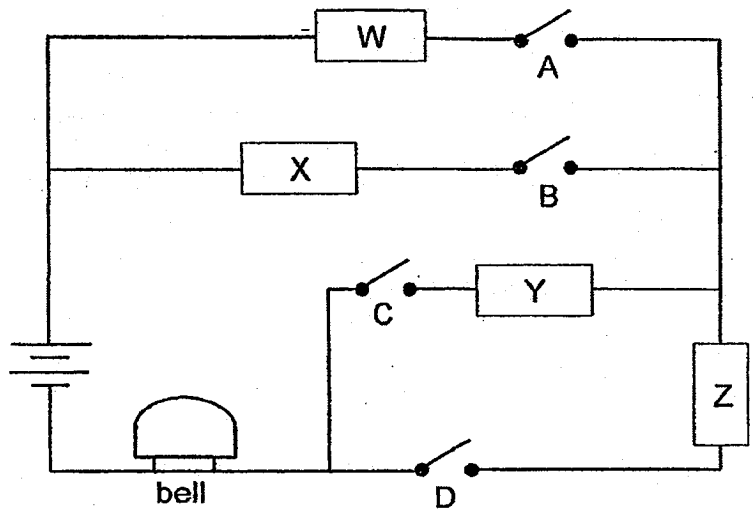


What is the minimum number of switches that needs to be closed in order to light up only three bulbs?

(1) five
(2) two
(3) three
(4) four

24. Jaden conducted an experiment to find out if objects W, X, Y and Z, are conductors of electricity.

He set up the circuit as shown below.



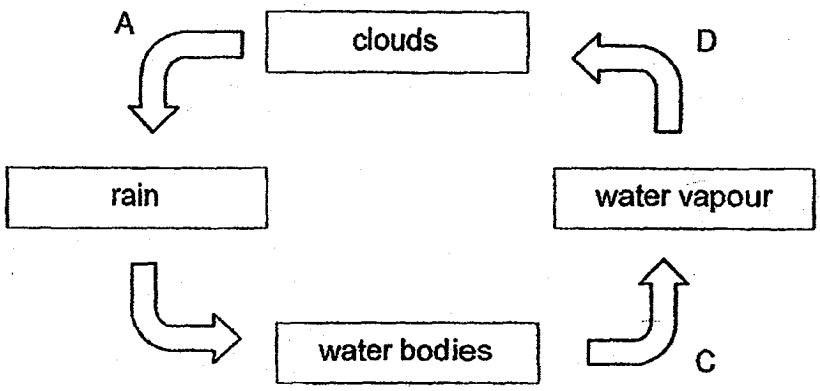
Jaden recorded his observations in the table below.

Test	Switch A	Switch B	Switch C	Switch D	Did the bell ring?
1	closed	open	closed	open	yes
2	closed	open	open	closed	no
3	open	closed	closed	open	no
4	open	closed	open	open	no

Which of the materials, W, X, Y and Z, is/are conductor(s) of electricity?

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

25. **Study the water cycle below.**

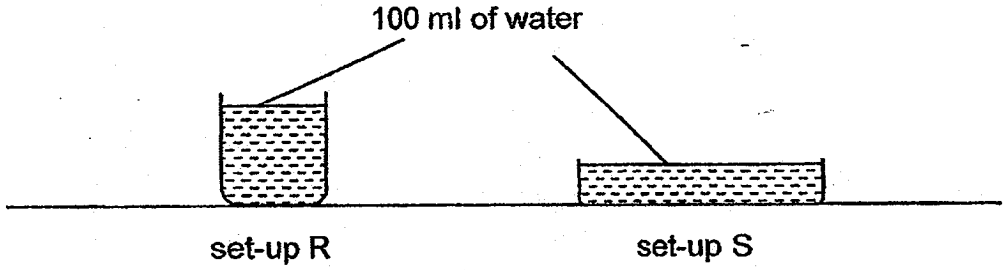


Which of the following correctly show the changes in the state of water at points A, B, C and D?

Point	Change in state
A	gaseous to liquid
B	no change
C	liquid to gaseous
D	gaseous to liquid

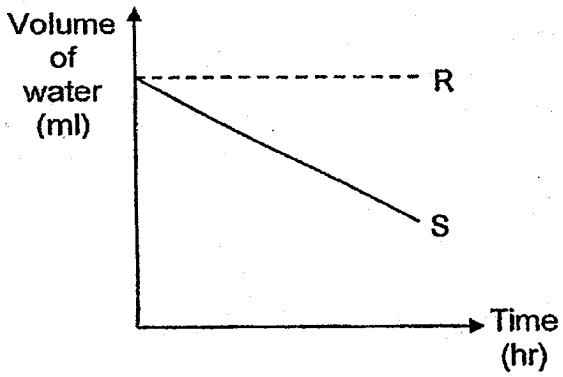
(1) A and C only
(2) B and D only
(3) A, B and C only
(4) B, C and D only

26. Kai Xiang conducted an experiment to investigate how the exposed surface area of water would affect the rate of evaporation using the set-ups shown below. He filled each container with 100 ml of water and left the set-ups in a well-ventilated room.

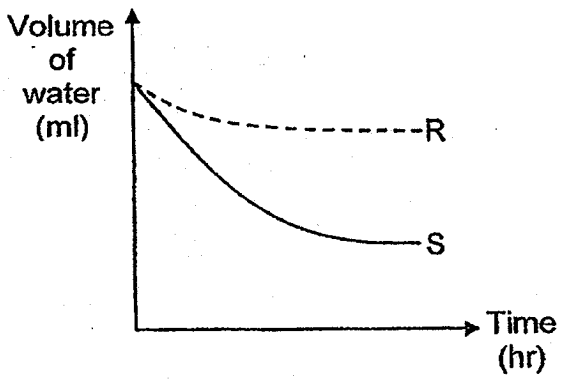


Which one of the following graphs correctly represents the amount of water left in the containers at the end of the experiment?

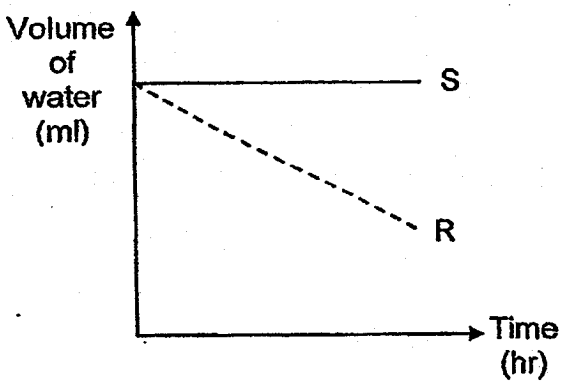
(1)



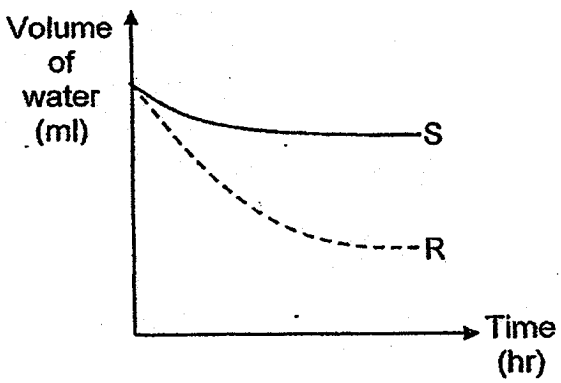
(2)



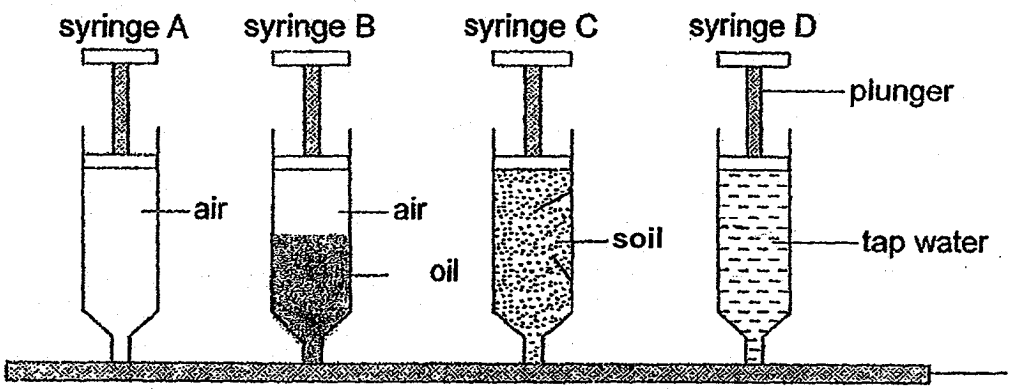
(3)



(4)



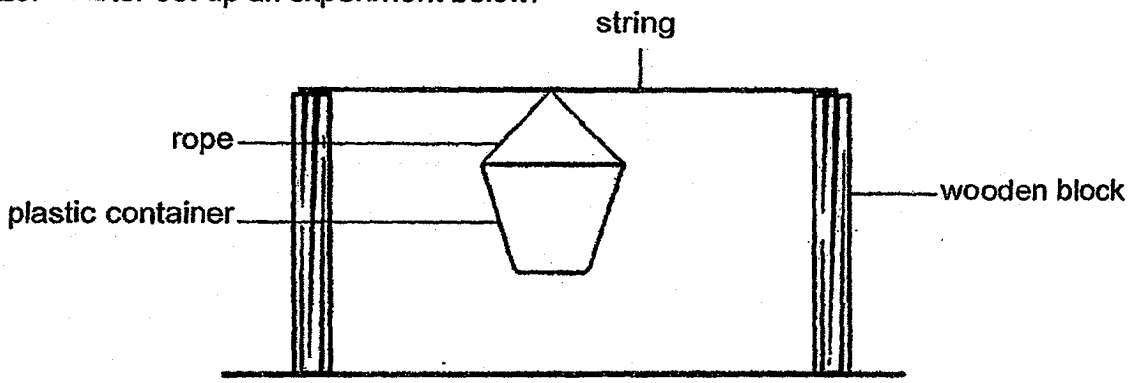
27. Study the four syringes below.



Which plunger(s) can be pushed inwards?

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

28. Peter set up an experiment below.



He put in 100 g weights into the plastic container one by one until the string **broke**. He recorded his findings in the table below.

Material of string	Number of 100 g weights
W	8
X	16
Y	3
Z	10

Based on the results, which string should he use for his fishing reel to catch big fishes?

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

End of Section A

NAN HUA PRIMARY SCHOOL
CONTINUAL ASSESSMENT 1 2018
PRIMARY SIX
SCIENCE

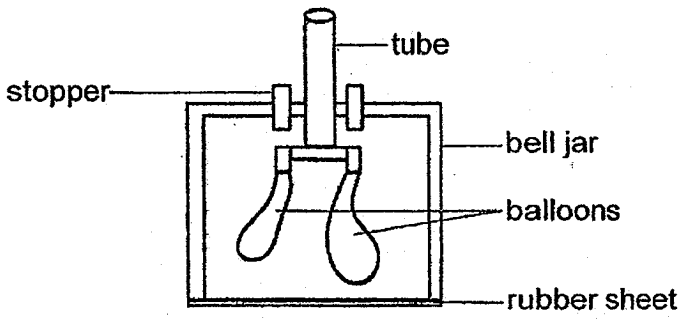
MARKS
/44

Name : _____ ( )

Class : Primary 6 / ____

Section B: (44 marks)
Write your answers to questions 29 to 41.
The number of marks available is shown in brackets [ ] at the end of each question or part question.

29. Betty used some materials to make a model of the human respiratory system.



(a) Name the part in the respiratory system represented by the balloons. [1]

_____

(b) State two differences between the exhaled gas and the inhaled gas. [2]

_____

_____

_____

Score	/3

30. Lakshmi conducted an experiment to find out whether the rate of photosynthesis changes with time in a day. She placed a pot of plant in an open field and plucked one leaf from the same plant at regular intervals.

She then used iodine solution to test the leaves for the presence of starch. The iodine solution will turn dark blue when starch is present in the leaf.

She recorded the results in the table shown below.

	Time at which the leaf was plucked			
	12 p.m.	**6 pm**	**12 a.m.**	**6 a.m.**
Observation (areas with dark blue patches)				

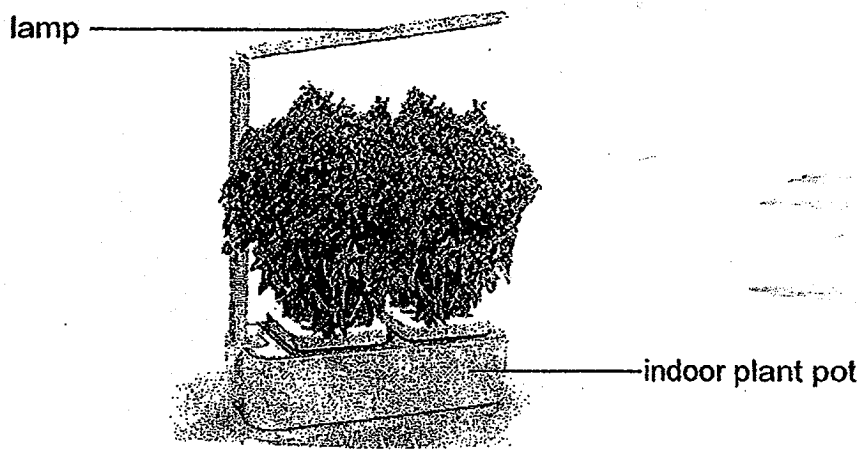
(a) She observed that the amount of starch present in the leaves starts to decrease **after 6 pm.** Give two reasons to explain the decrease. [2]

_____

_____

_____

Lakshmi recently bought an indoor plant pot with an attached lamp as shown below.



She turned on the lamp at 6 p.m. each day and turn it off at 6 a.m. the next day She realised that the plants in this indoor plant pot grows at a faster rate as compared to the plants in a normal plant pot that was placed at the same location.

(b) Explain why the plants in the indoor plant pot grew at a faster rate? [1]

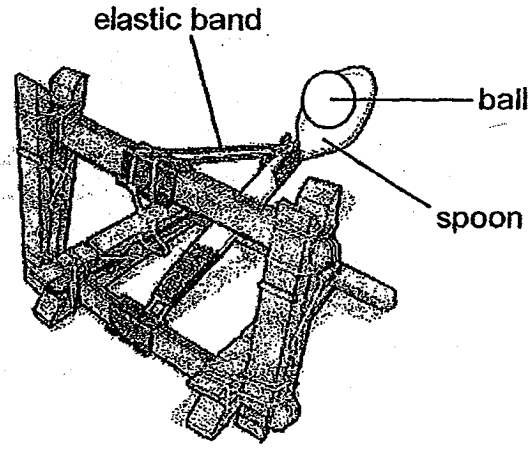
_____

_____

_____

Score	/ 3

31. Mary made a catapult using some common items found at home. She wanted to find out how the distance travelled by the ball will be affected by the length the elastic band was stretched.



She conducted an experiment and recorded the results in the table below.

Length of stretched elastic band (cm)	Distance travelled by the ball (cm)
3	16
4	23
5	31

(a) Name the energy possessed by the stretched elastic band. [1]

_____

(b) What is the relationship between the length of the stretched elastic band and the distance travelled by the ball? [1]

_____

_____

Mary wanted to make some changes to the catapult to make the ball travel a further distance.

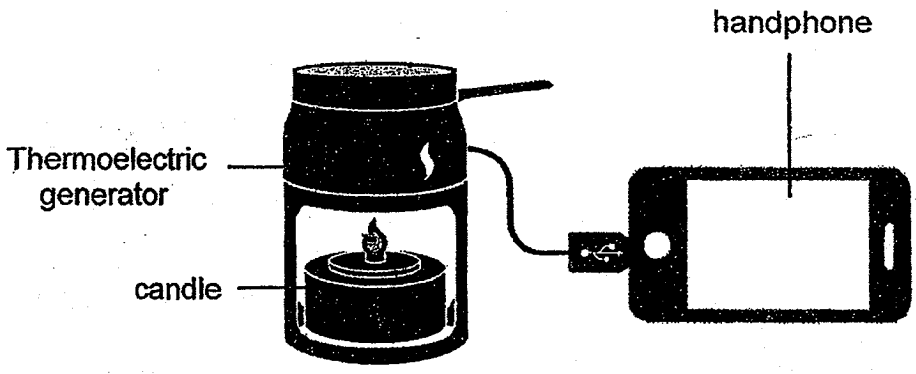
(c) Without changing the length of the stretched elastic band, suggest another change she can make to allow the same ball to travel a further distance. [1]

_____

_____

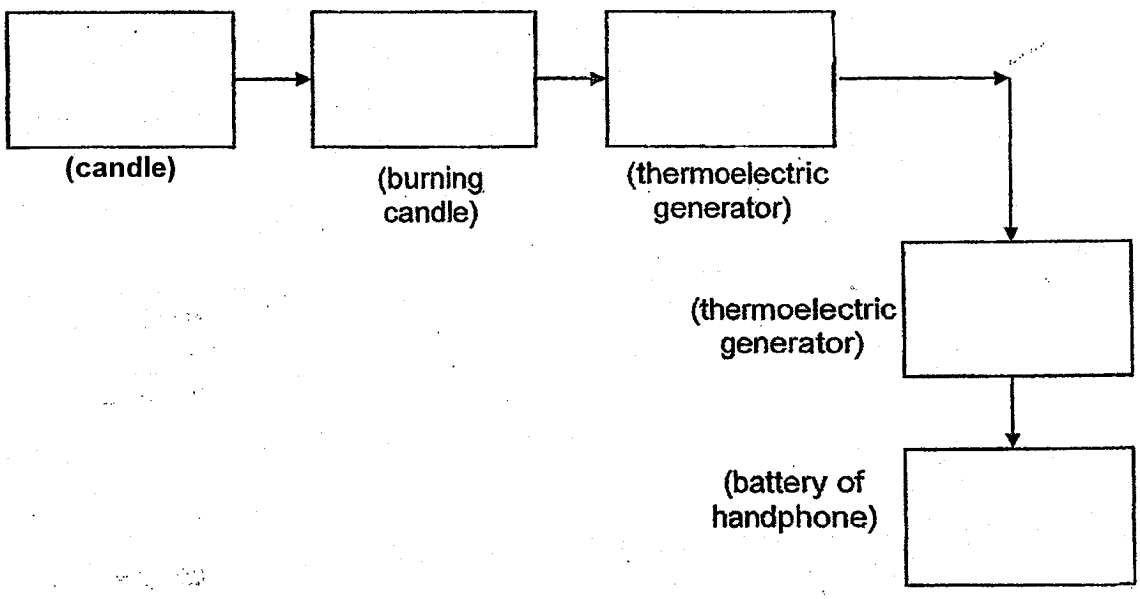
Score	/ 3

32. Neil purchased a candle charger as shown below.



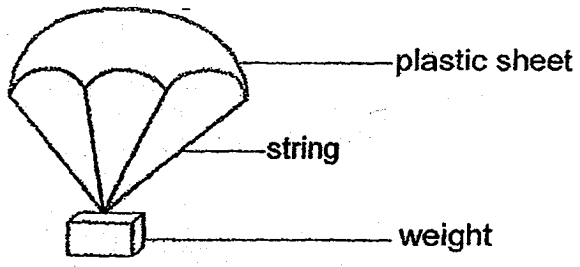
The candle charger makes use of a candle to heat up the thermoelectric generator which will then generate enough electricity to be used to charge the battery of a handphone.

What is the energy conversion for the candle charger? [2]



Score	/ 2

33. A parachute made of a plastic sheet, a weight and some strings was dropped from the same height several times.



It stayed afloat for a few seconds before falling to the ground. The results were recorded in the table below.

	1st try	2nd try	3rd try	Average
Time taken to reach the ground (s)	6	7	5	6

(a) State the force that was acting on the parachute which caused it to fall to the ground. [1]

_____

(b) Without **changing the weight and the height** from which the parachute was dropped, suggest one way to make the parachute stay in the air longer? Explain your answer. [2]

_____

_____

_____

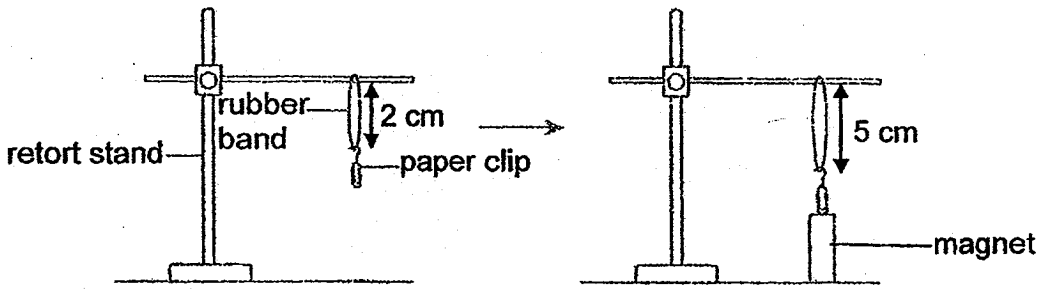
(c) Why is the experiment repeated a few times? [1]

_____

_____

Score	4

34. The diagram below shows what happens when a magnet is brought near to a paper clip.



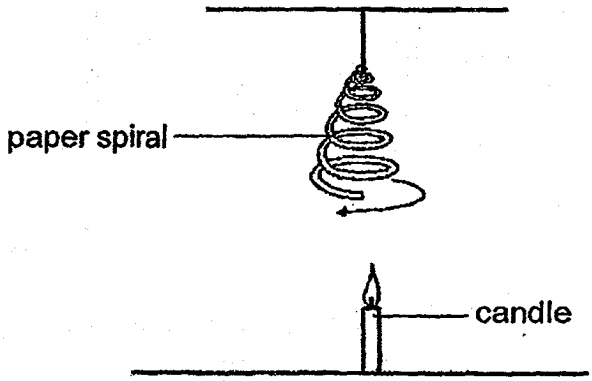
(a) State the force that is exerted on the paper clip by the magnet when it is brought near it. [1]

(b) State a property of the material of the paper clip that enables the force in (a) to be exerted on the paper clip. [1]

(c) When the magnet was removed, the length of the rubber band became 4 cm. Explain why. [1]

Score	/ 3

35. Olivia hung a paper spiral above a candle. She then lighted the candle and observed that the paper spiral started to spin as shown below.



Olivia counted the number of spins made by the paper spiral per minute and recorded her results in the table below. She then repeated the experiment two more times.

	1st try	2nd try	3rd try
Number of spins per minute	20	18	22

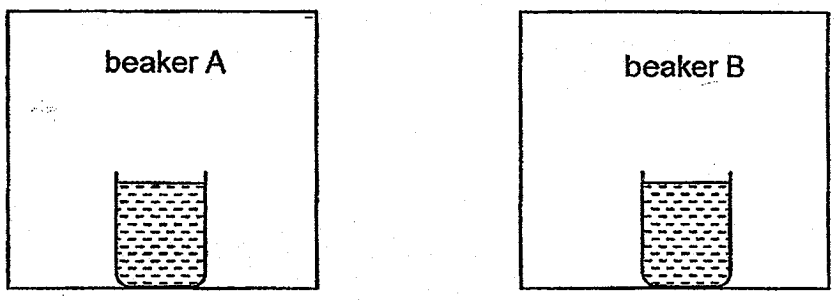
Olivia then added two more lighted candles below the paper spiral and the number of spins per minute increased.

(a) Explain why the number of spins per minute is affected by the number of candles. [2]

(b) How does keeping the distance between the paper spiral and the candle the same help to ensure a fair test? [1]

Score /

36. Patricia placed two beakers, A and B, in Room 1 and Room 2 respectively as shown in the diagram below. The beakers are made of the same material and are of the same size and shape. Both beakers also contained an equal volume of water at 100 °C.



Room 1
(surrounding temperature: 30 °C)

Room 2
(surrounding temperature: 15 °C)

Patricia then measured the temperature of the water every five minutes and recorded the results in the table below.

	Temperature of water in the cup (°C)						
Cup	**0 min**	**5 min**	**10 min**	**15 min**	**20 min**	**25 min**	**30 min**
A	100	91	83	74	62	55	43
B	100	85	X	65	49	32	28

(a) What could be the value of X? [1]

_____

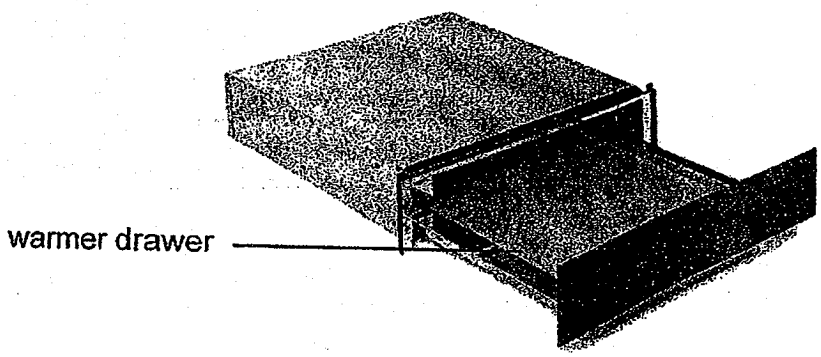
(b) The water in beaker B lost heat faster. Explain why. [1]

_____

_____

While renovating her kitchen, Patricia decided to add in a warmer drawer in her cabinet as shown in the picture below.

The interior temperature of the warmer drawer can be adjusted by Patricia. She can then keep her hot food in the warmer drawer so that it can remain hot for a longer period of time.



(c) Which temperature, 60°C or 80°C, do you think Patricia should set for her warmer drawer so that her soup that had just boiled can be kept hot for a longer period of time? Explain your answer clearly. [2]

_____

_____

Score	4

37. When a cyclist wants to stop the bicycle he is riding, he presses the brake at the handle which is connected to a brake pad which will stop the wheels. The bicycle will then move a short distance before stopping.

The distance travelled between the time when the driver presses the brake and the time the bicycle stops completely is called the braking distance.

Peter wanted to change the brake pads in his bicycle and tested four types of brake pads.

The table below shows the braking distances of the four types of brake pads.

Brake Pad	A	B	C	D
Braking distance (cm)	200	70	110	30

(a) Which brake pad should Peter choose so that he can stop the bicycle the fastest. Give a reason for your choice. [1]

_____

_____

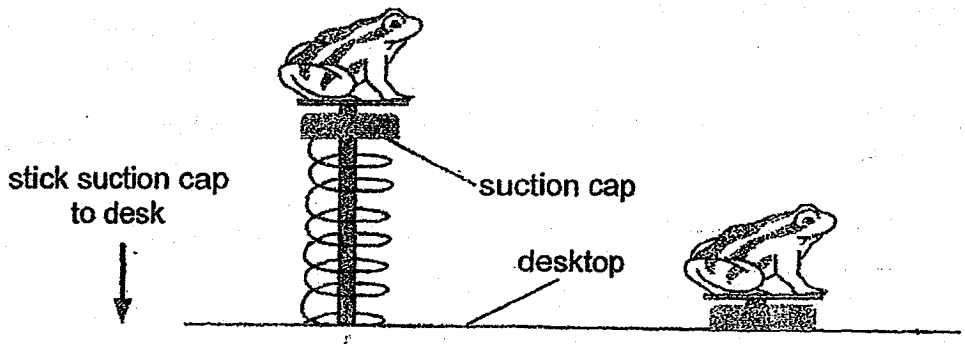
(b) After changing to his new brake pads, Peter was cycling on the road after it had rained. He found that the braking distance was longer when he tried to stop the bicycle. Explain why. [1]

_____

_____

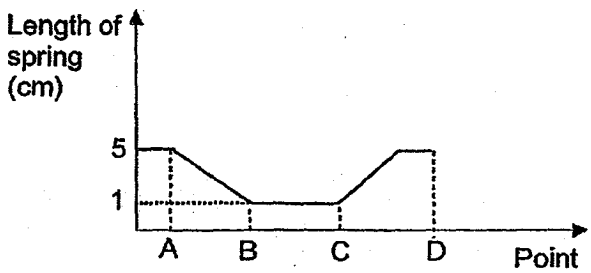
Score	2

38. The diagram below shows how a toy frog could be played.



First, compress the spring so that the suction cap sticks to the desktop. When the suction cap becomes loose, the frog will leap up.

The graph below shows the length of the toy at different time.



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

_____

(b) From the graph, why did the length of the spring remain the same at point B to C when more force was exerted on the toy frog? [1]

_____

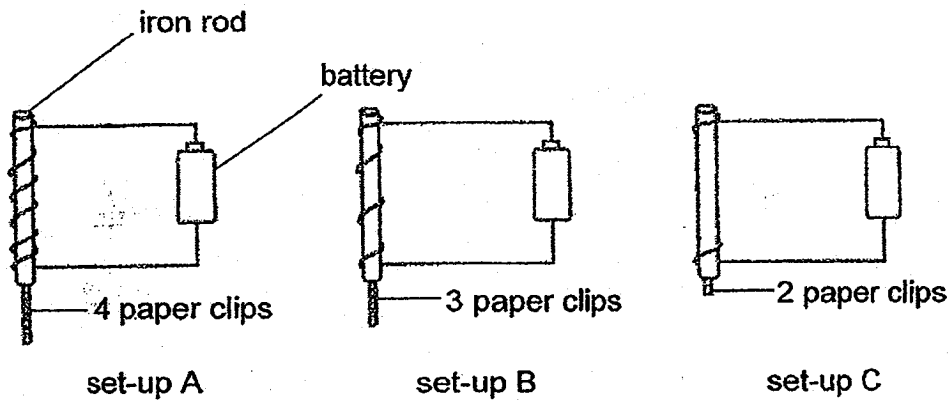
_____

(c) A lump of plasticine was added to the toy frog to increase the mass of the toy frog. The toy frog leapt a lower height. Explain in terms of forces, why this is so. [2]

_____

_____

39. Mr Tan conducted an investigation and the results are shown in the set-ups below. The batteries, iron rod and the paper clips used in the set-ups are identical.



set-up A set-up B set-up C

(a) State the variable which is changed in the experiment. [1]

_____

_____

(b) Besides the number of paper clips attracted, what else could Mr Tan measure in order to find out which electromagnet is the strongest? [1]

_____

_____

(c) Mr Tan's pupil, Stella, wanted to attract more paper clips using set-up A.

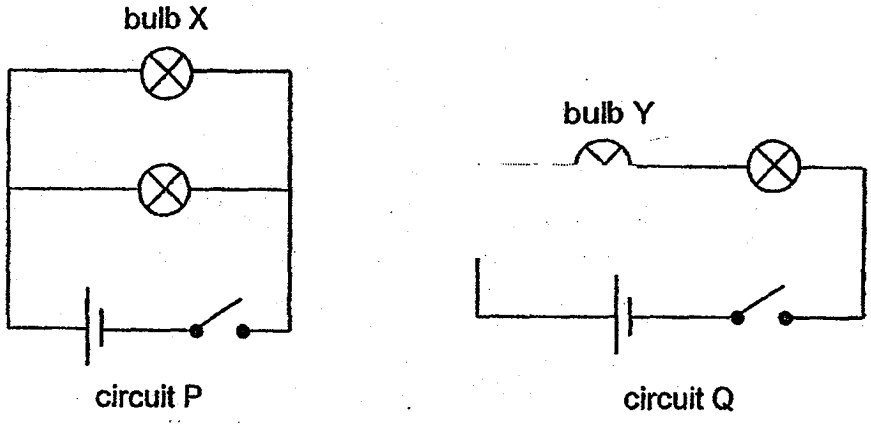
Give two suggestions to be made in the set-up so that it can attract more paper clips. [2]

_____

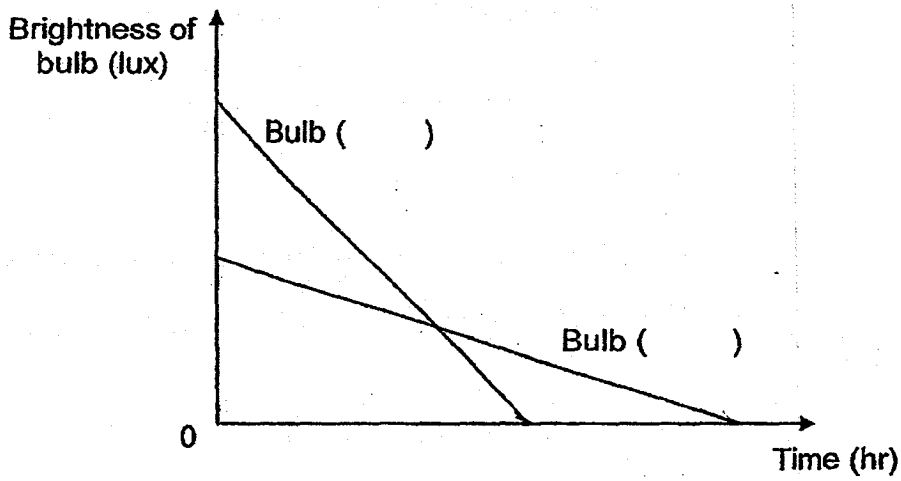
_____

Score	/ 4

40. Randy set up two circuits as shown in the diagram below.



He closed the switch and measured the brightness of bulb X and bulb Y till they no longer shone. He then plotted a graph as shown below based on his results.



(a) Label the line graphs using X and Y to indicate the time taken for bulb X and bulb Y to reach 0 lux. [1]

(b) Why did the brightness of bulb X and bulb Y reach 0 lux eventually? [1]

_____

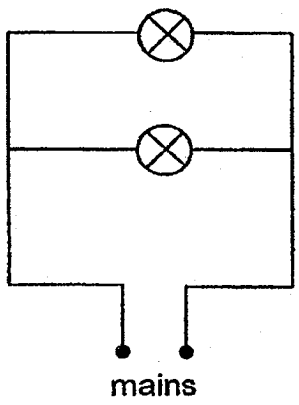
_____

(c) Without removing any bulbs, name two changes Randy can make to circuit P if he wants bulb X to shine for a longer period of time. [2]

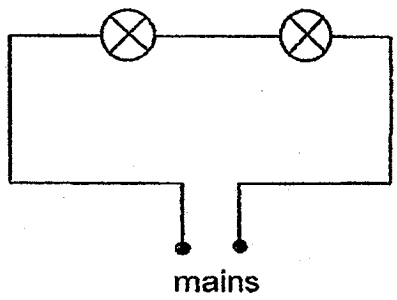
Change 1: _____

Change 2: _____

Randy recently bought a Christmas tree. He wanted to light up his Christmas tree. His friend told him that he could arrange the bulbs in the circuit in either a parallel or series arrangement as shown below.



circuit A



circuit B

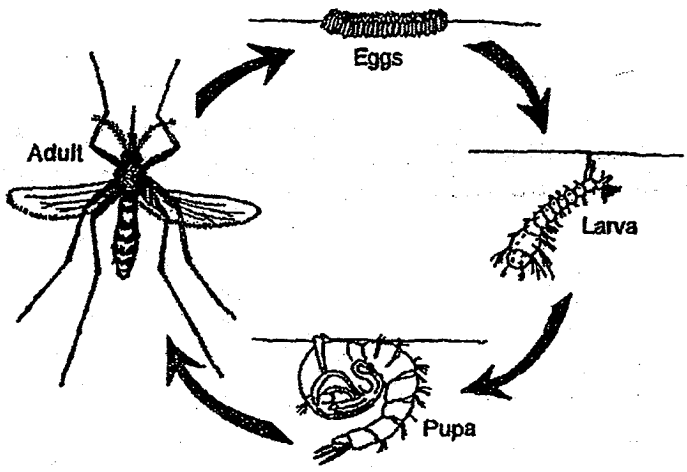
(d) Which circuit, A or B, should Randy use? Explain clearly why. [1]

_____

_____

Score	5

41. Nelson studied the life cycle of organism A shown below.



Nelson classified organism A as an insect.

(a) State one characteristic of the adult that helped Nelson classify organism A as an insect. [1]

_____

_____

Organism A lays a lot of eggs at one time.

(b) Explain how laying many eggs each time helps organism A to ensure the continuity of its own species. [1]

_____

_____

Nelson studied the effect of surrounding temperature on the life cycle of organism A and recorded his observations in the table below.

Temperature (°C)	Number of days for one complete life cycle
20	27
25	18
30	11
35	9

(c) From Nelson's observations, how would temperature affect the length of one complete life cycle of organism A? [1]

_____

_____

The young of organism A lives in water while the adult lives on land.

(d) Suggest one advantage for the young and the adult to live in different surroundings.

[1]

_____

_____

End of Paper

Score	4

EXAM PAPER 2018(P6)

SCHOOL : NAN HUA

SUBJECT : SCIENCE

TERM : CA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
1	4	3	3	3	4	3	1	3	3
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
2	2	3	2	1	2	2	2	3	3
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
3	3	3	2	4	2	3	2		

29)a)Lungs.

b)Inhaled gas has more oxygen than exhaled gas and inhaled gas has lesser carbon dioxide than exhaled gas.

30)a)After 6p.m. no light for plant so no photosynthesis is carried out. So no sugar is produced and converted to starch.

At the some time, starch in the plant is converted to sugar for the plant for life processes.

b)There was more light given to plant when photosynthesis is occurring.

31)a)Elastic potential energy

b)When the length of stretched elastic band increases, the distance travelled by ball increases.

31)c)Add another elastic band to the setup.

32)Chemical potential→heat energy→heat energy→electrical energy→chemical potential energy

33)a)Gravitational force.

b)Change the plastic sheet to a bigger one. There are more surface area in contact with air. There will be more air resistance acting on the plastic, so stay in air longer.

c)To ensure the realiability of the results.

34)a)Magnetic force a attraction.

b)The paper clip is made of a magnetic material.

c)The rubber band is overstretched and cannot return to its original length.

35)a)There are more candles, then there are more chemical potential energy in candle converted to more heat energy of flame. More heat energy of flame is transfer to more heat energy of air. More heat energy of air is converted to more kinetic energy is transfer to more kinetic energy of spinning spiral.

b)Changing the distance between the spiral and candle will affect the number of spins.

36)a)76℃

b)The temperature difference between the water and air in room 2 is greater compared to in room 1 ,so water in beaker B will lose heat faster to air in room 2.

c)80℃. The temperature difference between 80℃ and soup is lower. The soup will lose heat to the surrounding air in the drawer slower.

37)a)Brake pad D, It has the least braking distance when the brake was pressed.

b)When it rains, there is less friction between the wheels and the road. This causes the road to be more slippery and braking distance was longer.

38)a)5cm.

38b)The spring was compressed to the maximum and cannot be compressed anymore.

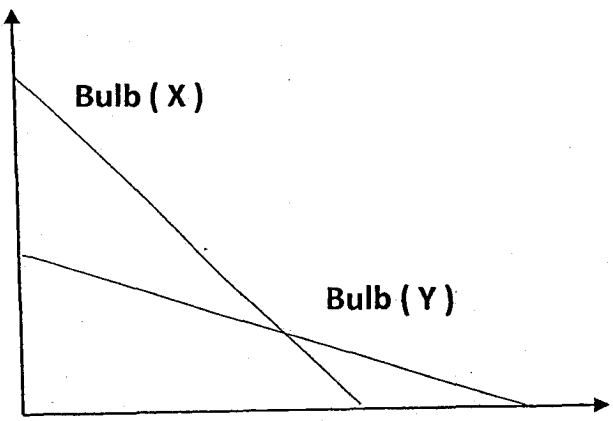
c)The elastic spring force need to overcome the weight of the frog. But when the mass of the frog increased, the elastic spring force did not increase, With the same amount of elastic spring force overcoming the increased weight the toy jumped lower.

39)a)The number of coils of wire around the iron rod.

b)Distance the paper clip is away from the magnet until clip is attracted.

c)Increase the number of coils around the iron rod, Add more batteries.

40)a)



b)All the chemical potential energy is converted to other forms of energy Y.

c)Change 1 : Change it to series arrangement.

Change 2 : Add more batteries.

d)Circuit A. I fore bulb fuse the others bulb will still be lighted.

41)a)The adult will have three body parts if its an insect.

b)The some of the eggs have been eaten or not hatch, the others will still ensure the continuity of its own species.

c)The temperature increases, the number of days for one complete life cycle is shorter.

d)The adults and young will not compete for food.