Index No. | | | | | | |

NAN HUA PRIMARY SCHOOL
TERM 3 NON-WEIGHTED ASSESSMENT 2020
PRIMARY 6

SCIENCE

BOOKLET A

28 Multiple Choice Questions (56 marks)

Total Time for Booklets A and B: 1 hour 45 minutes

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the space provided.
2. Do not turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answers in the Optical Answer Sheet (OAS) provided.

Marks Obtained

Booklet A		**/ 56**
Booklet B		**/ 44**
Total		**/ 100**

Name: _____ **(** **)** **Class: P 6** _____

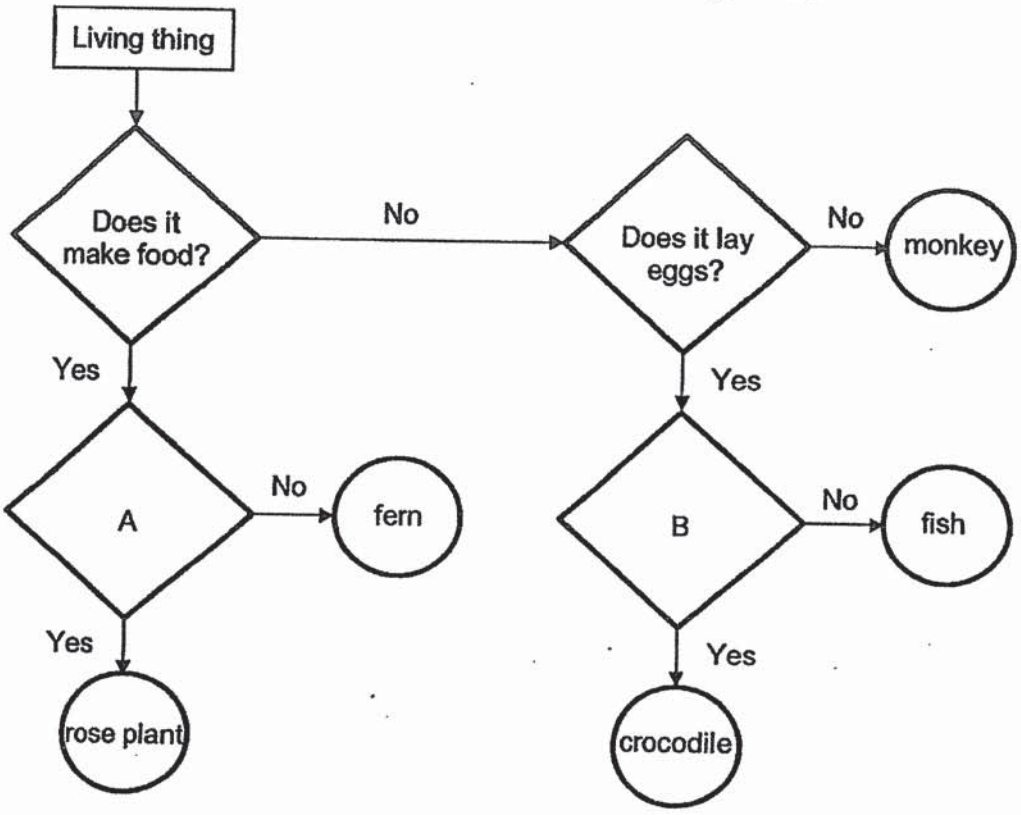
Date: 25 June 2020 **Parent's Signature:** _____

This Question Paper consists of **20** printed pages.

Section A: (28 × 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) and shade the correct oval on the Optical Answer Sheet.

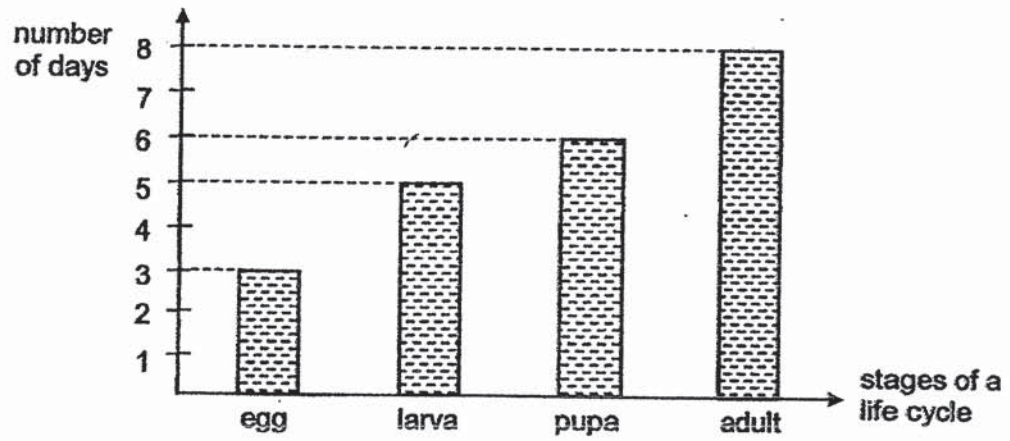
1 The flow chart below shows the characteristics of four organisms.



Which of the questions correctly match A and B?

	Part A	Part B
(1)	Does it have flowers?	Does it have gills?
(2)	Does it produce fruits?	Does it live in water?
(3)	Does it reproduce by seeds?	Does it have lungs?
(4)	Does it reproduce by spores?	Does it have scales?

2 The graph below shows the number of days for the various stages of the life cycle of insect A.



At which stage will the young of this insect be 6 days after the adult lays its eggs?

(1) egg
(2) larva
(3) pupa
(4) adult

3 The table below shows 3 cells, A, B and C, and the cell parts present in each cell.

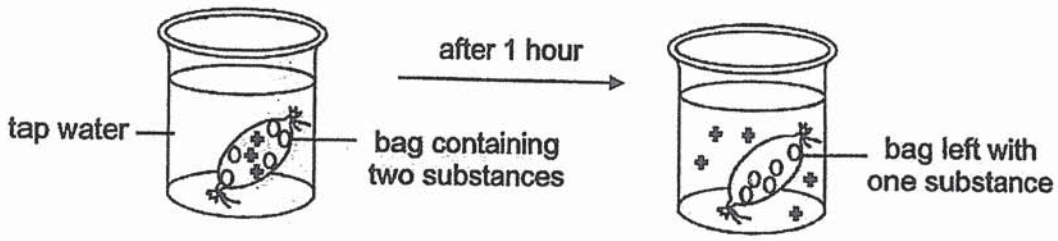
	Cell A	Cell B	Cell C
cell wall	✓		✓
cell membrane	✓	✓	✓
chloroplast	✓		
cytoplasm	✓	✓	✓
nucleus	✓	✓	✓

✓: present

Which of the following represents the cheek cell and the root hair cell?

	cheek cell	root hair cell
(1)	A	B
(2)	B	C
(3)	B	A
(4)	C	A

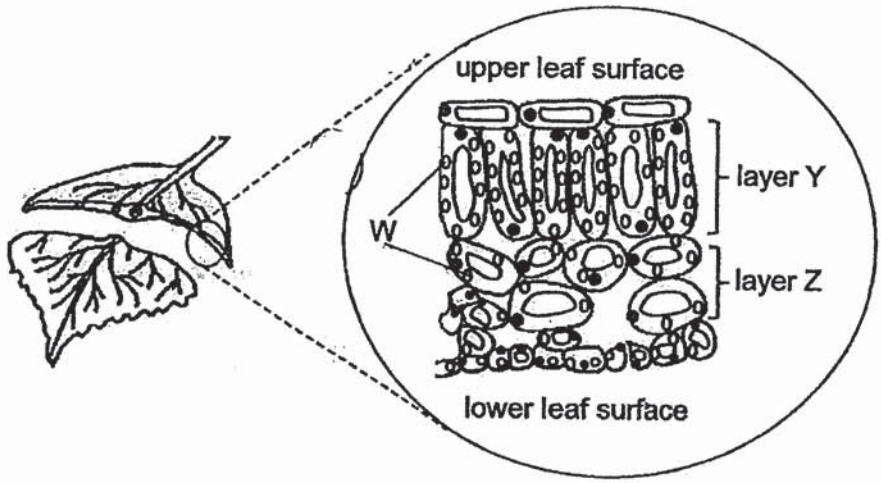
4 Study the diagram below.



Based on the experiment, which of the following statements is most likely to be true?

(1) The bag acts as a cell wall which gives the bag a regular shape
(2) The bag acts as a cell wall, allowing some substances to pass through.
(3) The bag acts as a cell membrane, allowing all substances to pass through.
(4) The bag acts as a cell membrane, allowing some substances to pass through.

5 The diagram below shows a section through a cut leaf of a plant.



W is a cell part found in the leaf cells. The number of W is **not** the same in layer Y and layer Z of the leaf.

Based on the diagram above, which of the following statement(s) is/are true on the distribution of W in a leaf?

A Layer Y traps more light than layer Z.
B Layer Y makes less food than layer Z.
C Layer Y is darker green in colour than layer Z.

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

6 Farmers always remove unwanted weeds from the vegetables that they grow.

This is because the weeds will compete with the vegetables for _____.

A water
B space
C sunlight
D nutrients

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

7 Daniel wanted to find out if the different lengths of the wing of three fruits, X, Y and Z, taken from the same plant, will affect their dispersal by wind. He dropped the three fruits from the same height and recorded the time each fruit took to reach the ground.

The table below shows his results.

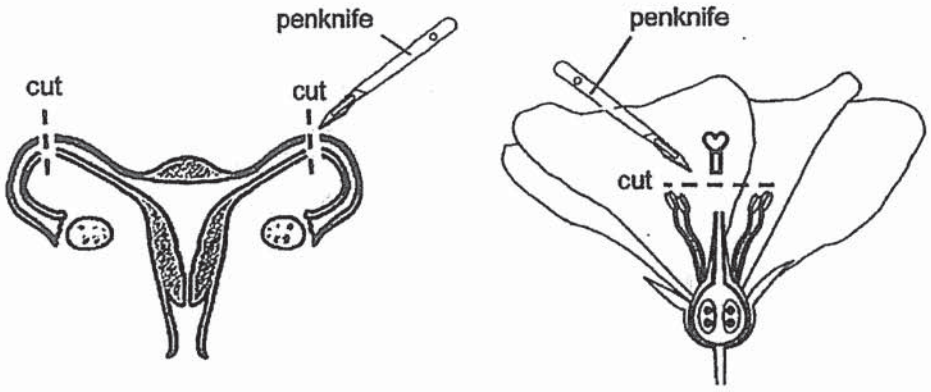
Fruits	Length of wing (cm)	Time taken (s)
X	6	3.2
Y	4	3.0
Z	2	2.7

He concluded that Fruit X could be carried away further by the wind.

How could Daniel improve his experiment?

(1) use three fruits of different masses
(2) dropped the three fruits at different heights
(3) use a fan and different wind speeds to blow the three fruits separately
(4) repeat the experiment two more times and calculate the average time taken for each fruit to reach the ground.

8 The diagrams below show the human and plant reproductive systems.
The two systems are cut at the parts shown below.



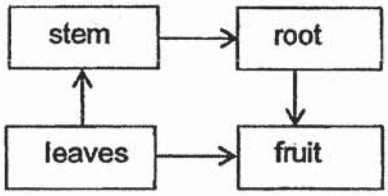
Which of the following statement(s) is/are correct after the cut?

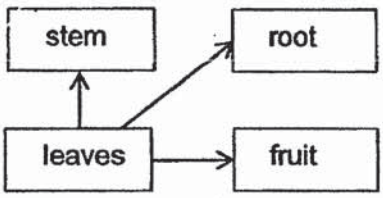
In both the human and plant reproductive systems, _____.

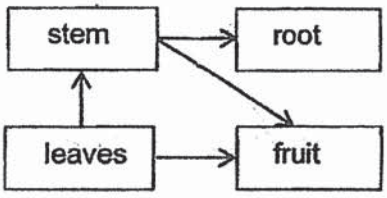
A the ovaries are not damaged
B fertilisation can still occur
C the female parts are cut.

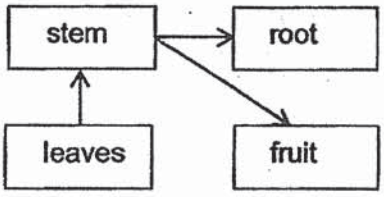
(1) A only
(2) B only
(3) A and C only
(4) B and C only

9 Which of the following correctly shows how food is transported in a plant?

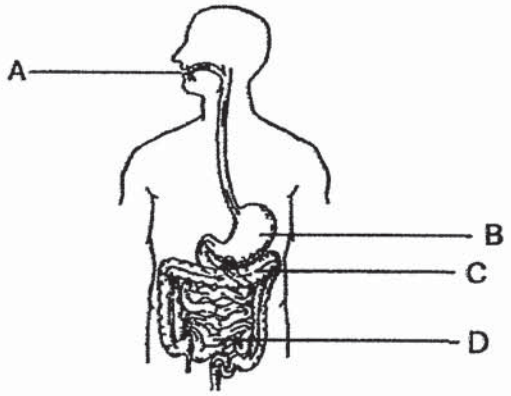
(1)


(2)


(3)


(4)


10 The diagram below shows the human digestive system.

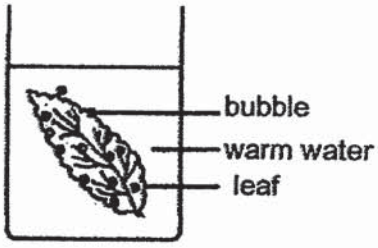


Which of the following statements are correct?

A Organ C absorbs water and minerals.
B Digestive juices are released at B, C and D only.
C Food is broken down into simpler substances at A, B and D.
D Absorption of digested food into the bloodstream occurs at D.

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

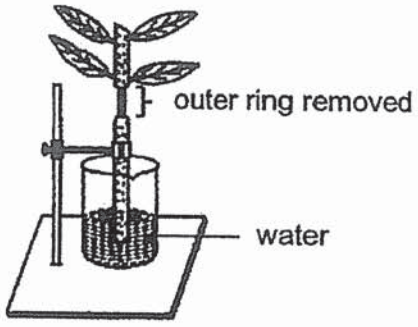
11 When a freshly plucked leaf is put inside a beaker of warm water, bubbles appeared on the surfaces of the leaf.



Which of the following statements about the bubbles is correct?

(1) The bubbles contained air.
(2) The bubbles contained chlorophyll.
(3) The bubbles contained dissolved mineral salts.
(4) The bubbles are formed when surrounding air dissolved in water.

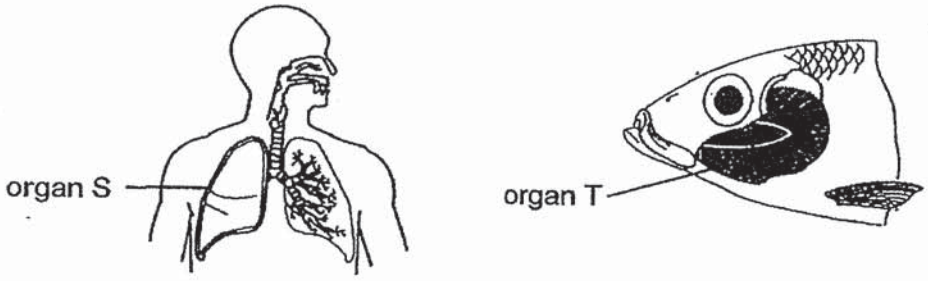
12 An experiment is carried out to find out more about the plant transport system. An outer ring around the stem of a healthy plant is removed. After a few days, it was observed that the plant remained healthy.



Which of the following statements is true about the outer ring that is removed?

(1) All the food-carrying tubes are removed.
(2) All the water-carrying tubes are removed.
(3) Only some of the food-carrying tubes are removed.
(4) Only some of the food-carrying tubes and all of the water-carrying tubes are removed.

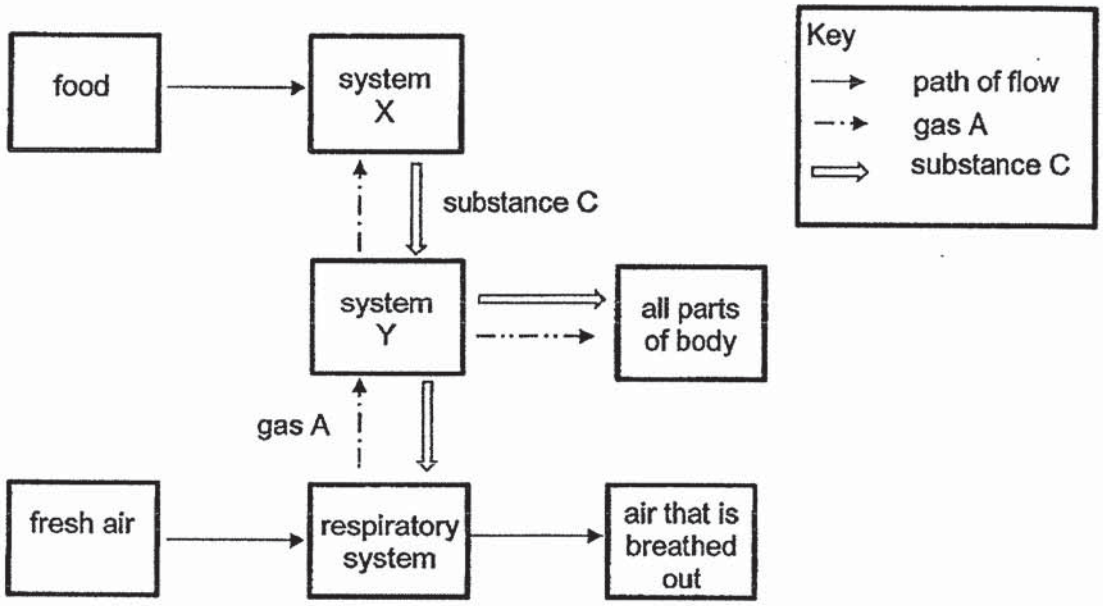
13 The diagrams below show the respiratory systems of the human and the fish.



Which of the following statements is correct about organs S and T?

(1) S and T remove oxygen from the body.
(2) S and T are made up of blood vessels only.
(3) S and T allow gaseous exchange to take place.
(4) S takes in oxygen from the air and from the water, but T only takes in oxygen from the water.

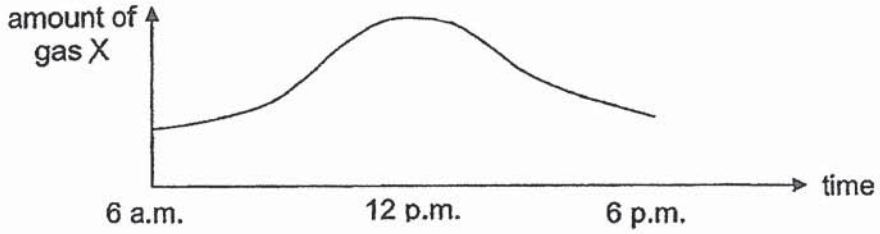
14 The chart below shows how substance C and gas A are transported in the human body.

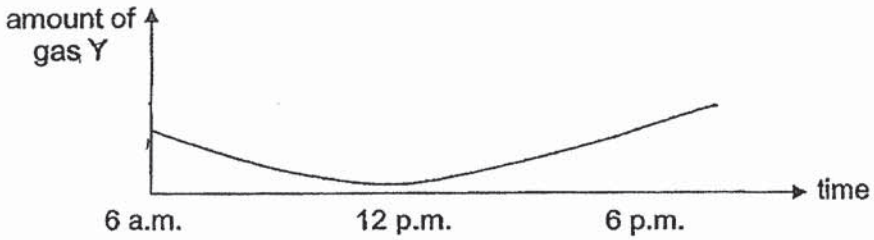


Which of the following correctly matches gas A, substance C and body systems X and Y?

	System X	System Y	Gas A	Substance C
(1)	digestive	circulatory	oxygen	digested food
(2)	digestive	respiratory	oxygen	digested food
(3)	respiratory	digestive	carbon dioxide	food
(4)	circulatory	digestive	carbon dioxide	food

15 A pot of plant in a sealed clear glass box was left in the garden for one day. The different amount of gases in the sealed glass box was recorded and plotted in the graphs below.



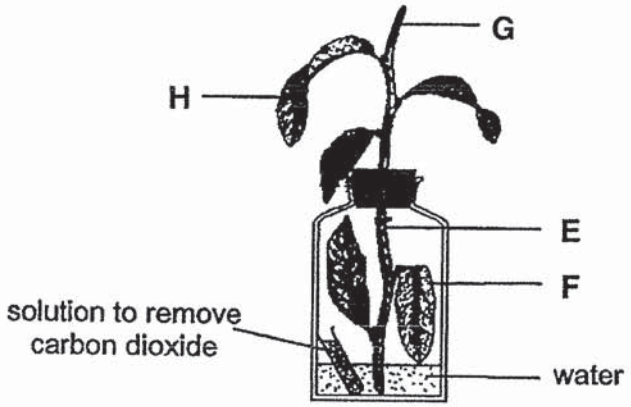


Based on the information above, which of the following statements are correct?

A Gas X is oxygen.
B Gas X is carbon dioxide.
C Gas Y is oxygen.
D Gas Y is carbon dioxide.

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

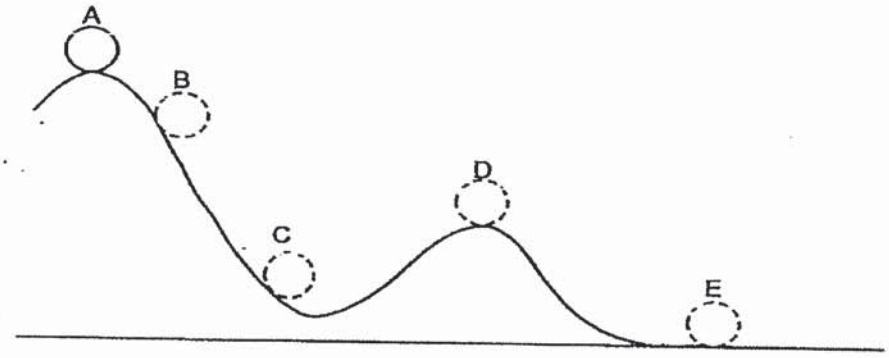
16 An experiment is set up to find out if carbon dioxide is needed for photosynthesis.



Which two parts of the plant should be taken to test for starch to reach a conclusion?

(1) E and G
(2) F and H
(3) H and F
(4) H and G

17 A ball was released from point A. It moved from point A and stopped at point E.

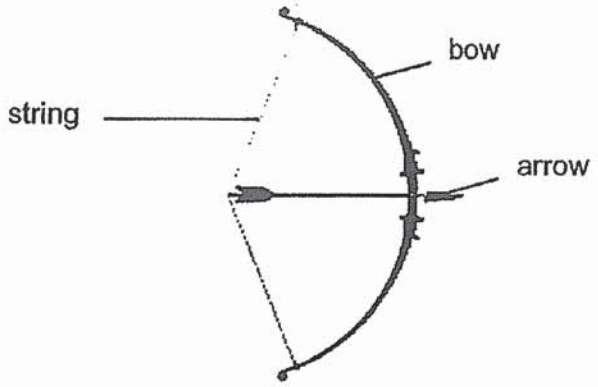


Which of the following statements about the energy of the ball are correct?

W At point E, the ball has no kinetic energy.
X At point C, the ball has more kinetic energy than at point B.
Y At point A, the ball has more kinetic energy than at point D.
Z At point D, the ball has more gravitational potential energy than at point C.

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

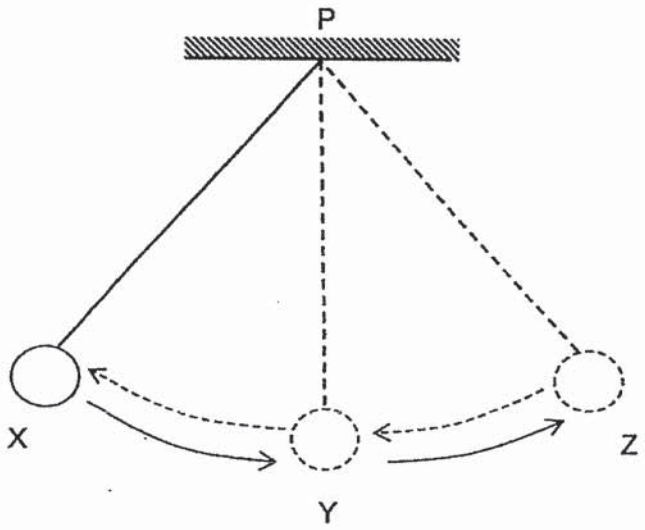
18 The diagram below shows a bow and an arrow.



Which of the following correctly shows the energy conversion when the string is pulled and then released?

(1)	Chemical potential energy	→	Kinetic energy	→	Gravitational potential energy
(2)	Elastic potential energy	→	Chemical potential energy	→	Kinetic energy
(3)	Kinetic energy	→	Chemical potential energy	→	Kinetic energy
(4)	Kinetic energy	→	Elastic potential energy	→	Kinetic energy

19 A metal ball hangs on a string which is fixed at point P. It is released from position X and it swings to position Y, position Z and then back. It swings to and fro several times before stopping at position Y.

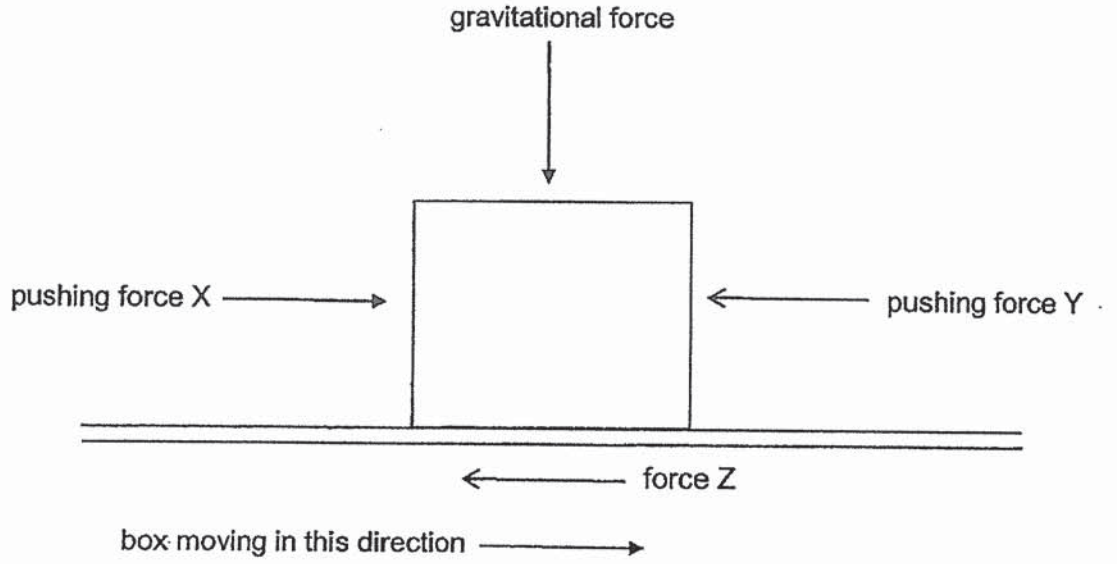


Which of the following statements are correct?

A The kinetic energy of the ball decreases from X to Y.
B The potential energy of the ball increases from Y to Z.
C The metal ball has the most kinetic energy when it was at position Y for the first time.
D Some of metal ball's energy has been converted to heat and sound energy during its path.

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

20 A box is being pushed by force X to move along the floor shown in the diagram below.



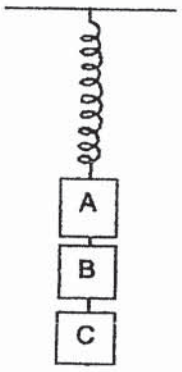
Which of the following statements describe the possible effects of the forces on the box?

A Gravitational force can stop the moving box.
B Pushing force X caused the stationary box to move.
C Pushing force Y may change the direction of the moving box.
D Force Z opposes the motion and increases the speed of the moving box.

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

21 An experiment was carried out with 3 objects, A, B and C, of different masses. When different combinations of the objects were hung on the spring, the length of the stretched spring was measured and recorded.

The original length of the spring was 10 cm.



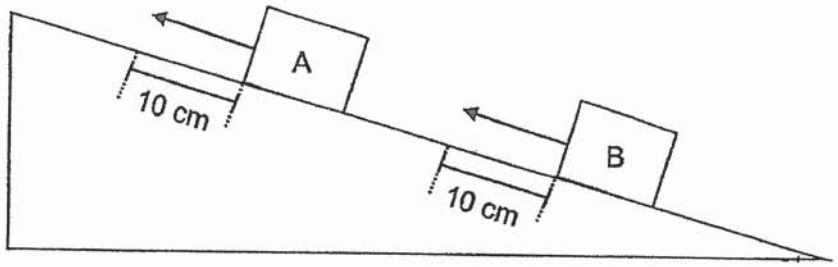
The table below shows the length of the spring after different objects were hung on it.

Objects	Length of spring (cm)
A	30
A and B	60
A, B and C	85

If the spring was not overstretched throughout the experiment, which of the following statements is correct?

(1) Object A has the smallest mass.
(2) Object A has a greater mass than object C.
(3) The extension of the spring when only object B is hung on it is 30 cm.
(4) The length of the spring is 50 cm when only object C is hung on the spring.

22 Two identical blocks, A and B, are placed at different positions on a ramp. Blocks A and B are then pulled up a distance of 10 cm on the ramp.

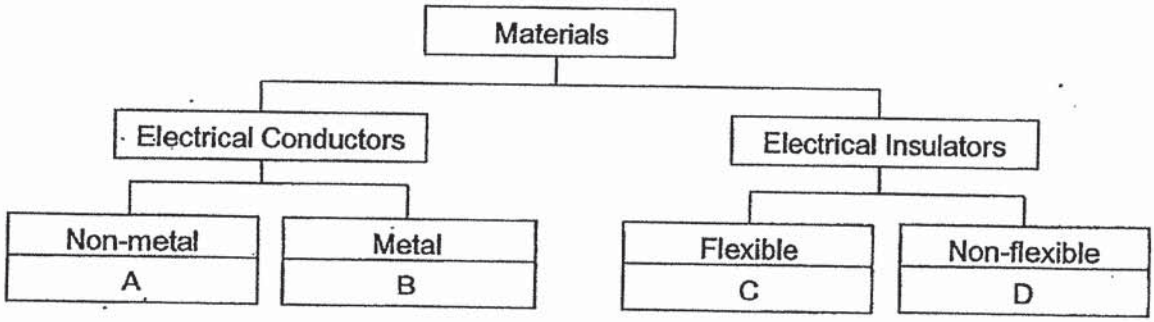


Which of the following statements are correct?

P Block A needs more force to be pulled up than block B.
Q Blocks A and B have the same amount of frictional force acting on them.
R Blocks A and B have the same amount of gravitational force acting on them.

(1) P and Q only
(2) P and R only
(3) Q and R only
(4) P, Q and R

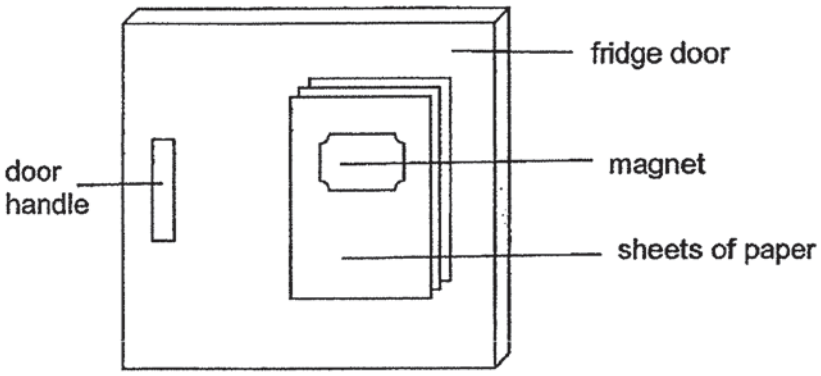
23 Study the classification table below.



In which group, A, B, C or D, can iron, plastic, glass and gold be placed?

	Iron	Plastic	Glass	Gold
(1)	A	C	B	D
(2)	A	D	C	A
(3)	B	A	D	A
(4)	B	C	D	B

24 Xiong wanted to find out the strength of the magnetic force of two magnets. He attached a piece of paper on his refrigerator door with magnet X. He then placed another piece of paper on the first paper and attached both to the refrigerator door using the same magnet. Xiong repeated the experiment with more pieces of paper until the papers could no longer be attached to the refrigerator door.



Xiong repeated the experiment with Magnet Y.
The table below shows the result of Xiong's experiment.

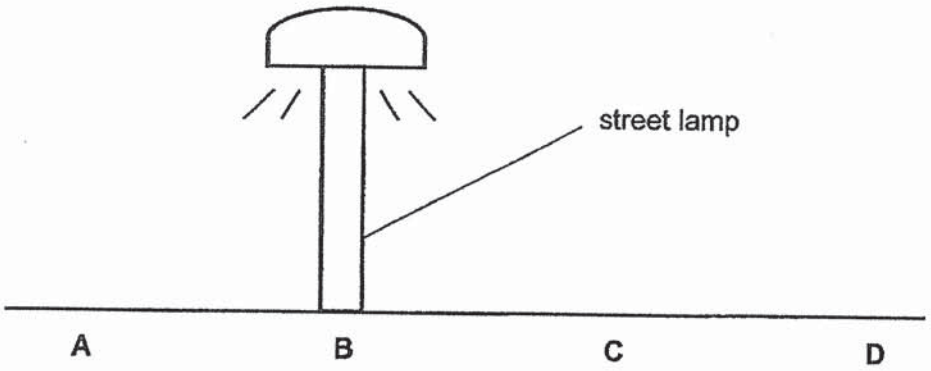
Number of papers used	Do the papers remain attached to the refrigerator door?	
	Magnet X	Magnet Y
1	Yes	Yes
2	Yes	Yes
3	Yes	Yes
4	No	Yes
5	No	Yes
6	No	No
7	No	No

Which of the following can be concluded based on the results of Xiong's experiment?

A Magnetic force can act at a distance.
B Magnet Y is a stronger magnet than Magnet X
C Gravitational force acting on the 5 papers is stronger than the magnetic force of Y when 5 papers are used in the experiment.

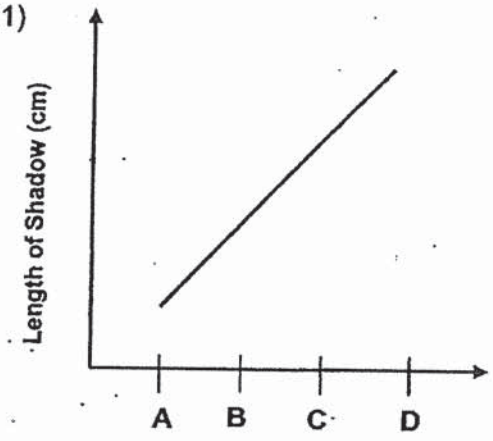
(1) A only
(2) A and B only
(3) B and C only
(4) A, B and C

25 On a dark night, Ahmad walked from A to D under a lit street lamp.

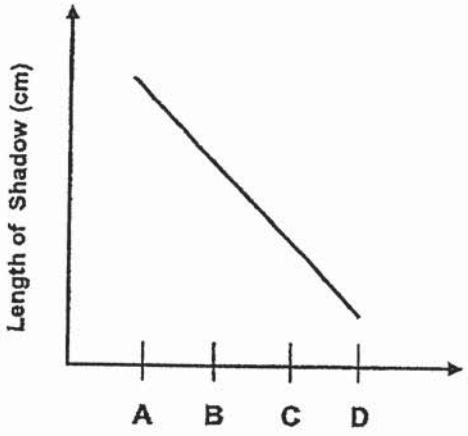


Which of the following graphs shows how the length of Ahmad's shadow changes from A to D under the lit street lamp?

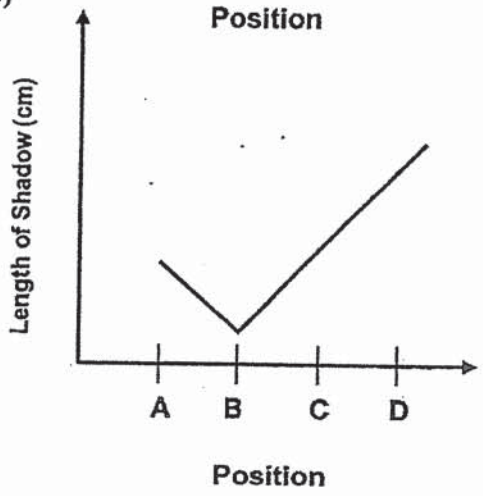
(1)



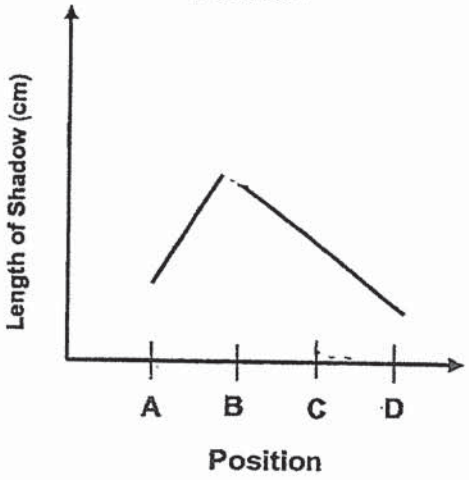
(2)



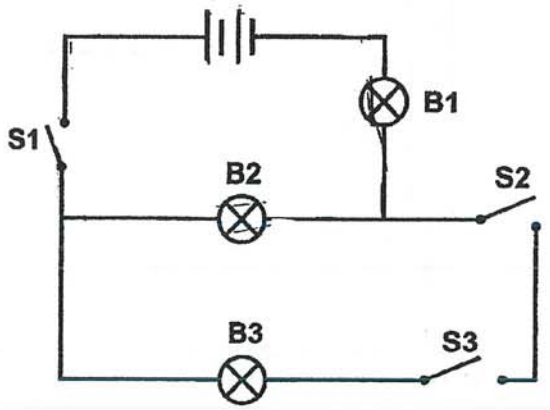
(3)



(4)



26 Johnny set up an electrical circuit as shown below. Bulbs B1, B2 and B3, and switches S1, S2 and S3 are connected in the circuit. All the bulbs and batteries are working properly.



Which of the following is **incorrect**?

	Switches			Do the bulbs light up?		
	S1	S2	S3	B1	B2	B3
(1)	closed	closed	open	yes	yes	no
(2)	open	open	closed	no	no	no
(3)	closed	open	closed	no	yes	yes
(4)	open	closed	closed	no	no	no

27 The table below shows the states of four substances, P, Q, R and S, at different temperatures.

Substances	States of substances		
	10°C	50°C	80°C
P	solid	liquid	gas
Q	liquid	liquid	liquid
R	liquid	gas	gas
S	solid	solid	liquid

Which of the following statements correctly describe substances P, Q, R and S?

A The boiling point of substance P is 82°C.
B The melting point of substance Q is 15°C.
C Substance R has the lowest boiling point.
D Substance S has the highest melting point.

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

28 The diagram below shows a kettle of boiling water on a hot stove.

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

A There is less water vapour in the air as the water is boiling.
B The water boiled and changed into steam and steam has kinetic energy.
C The mist that is seen above the spout of the kettle is in liquid state.
D The temperature of the boiling water increases when the water is heated longer.

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

----------*End of Booklet A*----------

Index No. | | | | | | |

NAN HUA PRIMARY SCHOOL
TERM 3 NON-WEIGHTED ASSESSMENT 2020
PRIMARY 6

SCIENCE

BOOKLET B

12 Structured / Open-ended questions (44 marks)

Total Time for Booklets A and B: 1 hour 45 minutes

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the space provided.
2. Do not turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write your answers in this booklet.

Marks Obtained

Section B		/ 44

Name: _____ ( ) **Class: P 6** _____

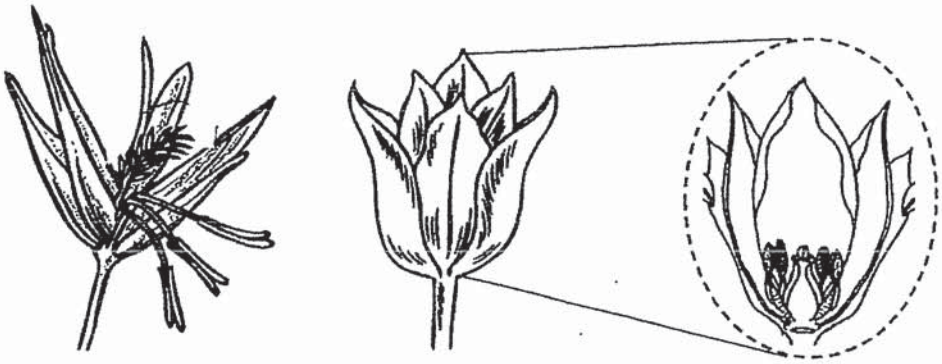
Date: 25 June 2020 **Parent's Signature** _____

This Question Paper consists of 16 printed pages.

Section B: (44 marks)
Write your answers to question 29 to 40.
The number of marks available is shown in brackets [ ] at the end of each question or part question.

29 Flowers play an important role in the reproduction of flowering plants.

The diagrams below show two different types of full-bloomed flowers with both the male and female reproductive parts still intact.



Flower X | Flower Y | cross section of Flower Y

(a) On flower X, circle and label the part of the flower where the pollen grain should land for pollination to take place. [1]

(b) Name the method of pollination for Flower X and Flower Y. [2]

Flower X - _____

Flower Y - _____

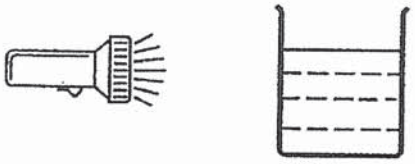
(c) Name one characteristic of flower X that suggests that it is pollinated by the method named in part **(b)**. [1]

_____

_____

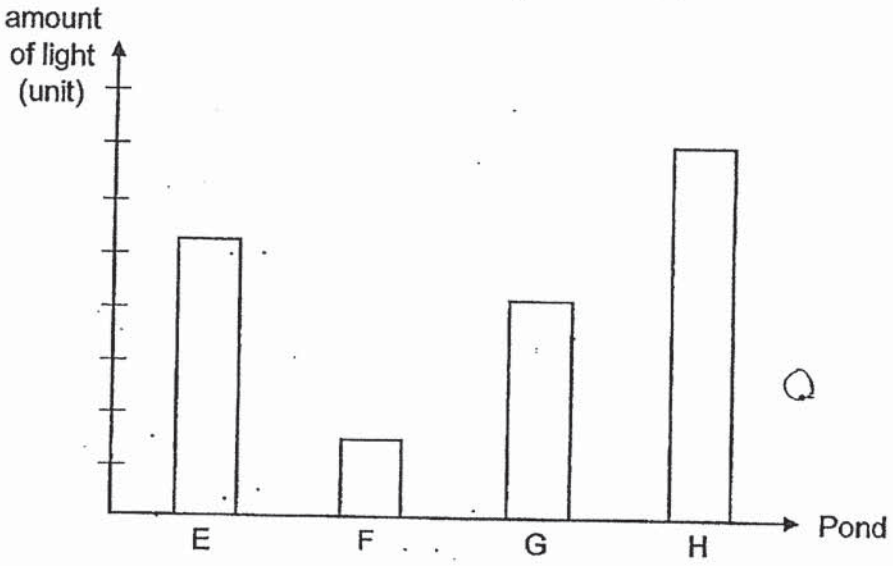
Score 4

30 Ali collected four beakers of water from four different ponds, E, F, G and H. He used the set-up below to determine the amount of light passing through each beaker of pond water.



torch beaker of pond water

The graph below shows the amount of light recorded.



(a) What apparatus should be used to measure the readings? [1]

(b) In the boxes below, arrange the different pond water, E, F, G and H, in decreasing order, based on the amount of light passing through the pond water. [1]

most light least light

Go on to the next page

(c) Which pond would be the most suitable for totally submerged plants to thrive in? Explain your answer. [2]

_____

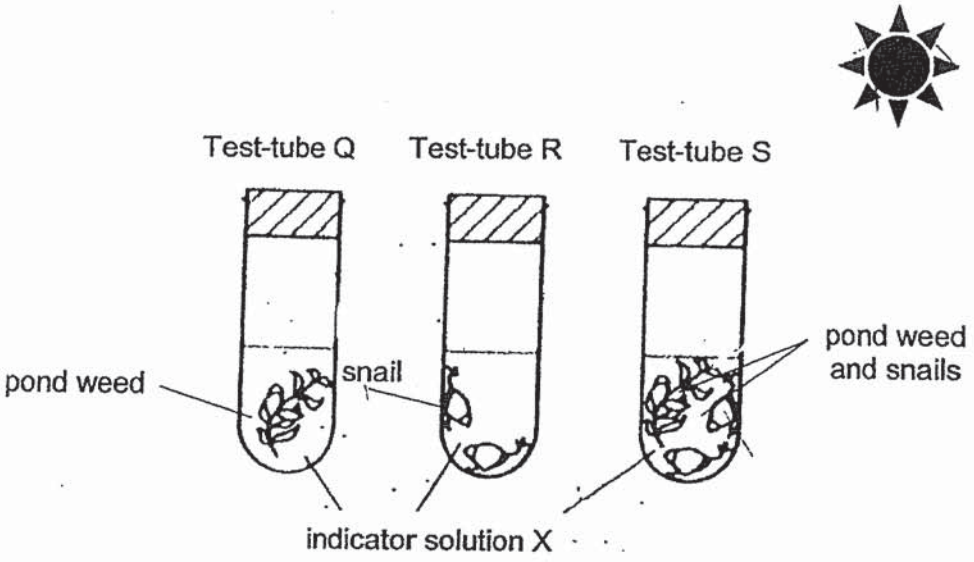
_____

Score	/ 4

31 The table shows how indicator solution X changes colour when the concentration of carbon dioxide in it changes.

Concentration of carbon dioxide	Colour change
Increases	Red to yellow
Decreases	Red to purple

On a sunny day, Samantha set up the experiment shown below and put the three test-tubes on a window-sill. After 2 hours, she observed the colour of the indicator solution X and recorded the results in a table.



(a) Complete the table below. [1]

Test tube	Colour of the indicator solution X
Q	
R	
S	Red

(b) Explain your answer in **(a)** for Test-tube Q. [1]

(c) Explain why the indicator solution X remained red in Test-tube S. [1]

Score	3

32 Diagram 1 below shows the movement of substance X and water in the plant transport system.

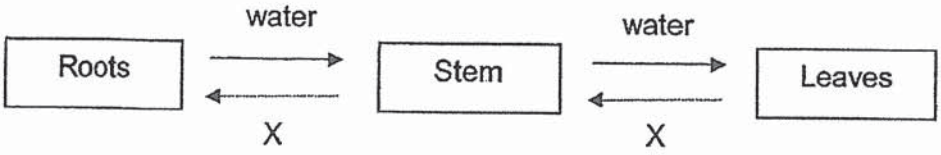
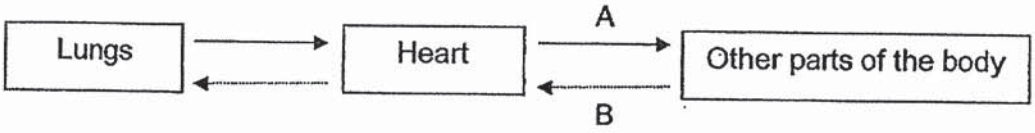


Diagram 2 below shows the movement of blood in the human circulatory system.



(a) Identify substance X carried in the plant transport system. [1]

_____

(b) What happens to the water after it reaches the leaves? [1]

_____

_____

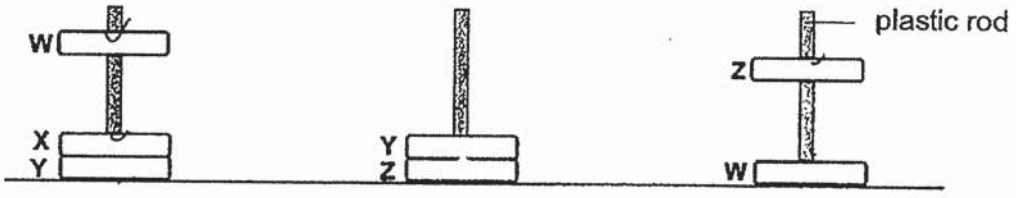
(c) State a difference, in terms of the amount of substances present, between the blood in A and the blood in B. [1]

_____

_____

Score 3

33 James has four types of metal rings, W, X, Y and Z. He passed the different rings through three smooth plastic rods as shown in the diagram below.
Only one type of metal ring is **not** a magnet.



(a) Based on his observations as shown above, which of the metal rings are definitely magnets? Give a reason for your answer. [1]

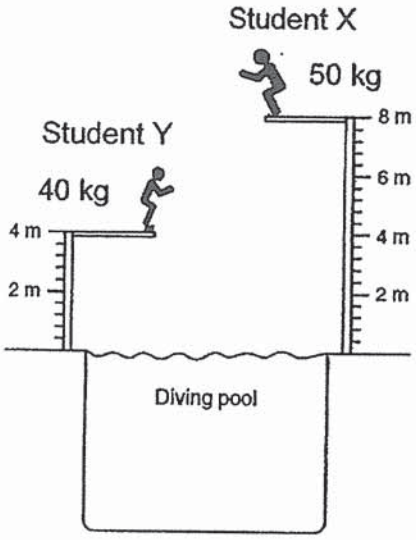
_____

_____

(b) Using any of the two types of metal rings listed above, draw a set-up that James would **not** observe in the box below. Label the two metal rings clearly. [1]

Score	2

34 The diagram below shows two students standing on a platform ready to dive into the pool.



(a) Which student, X or Y, has more gravitational potential energy? Give two reasons for your answer. [2]

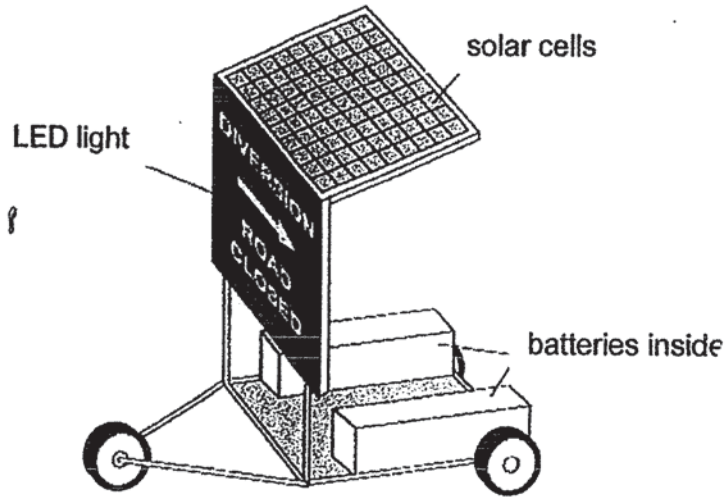
(b) Student X dives from the platform into the water. Explain, in terms of energy, why Student X's kinetic energy decreases as he enters the water. [1]

(c) Another swimmer, in the picture below, dived into the pool from a diving board.

What is the source of energy for the swimmer? [1]

Score 4

35 The picture shows a temporary road traffic information board.



The batteries power the LED light used in the information board.

The solar cells keep the batteries charged.

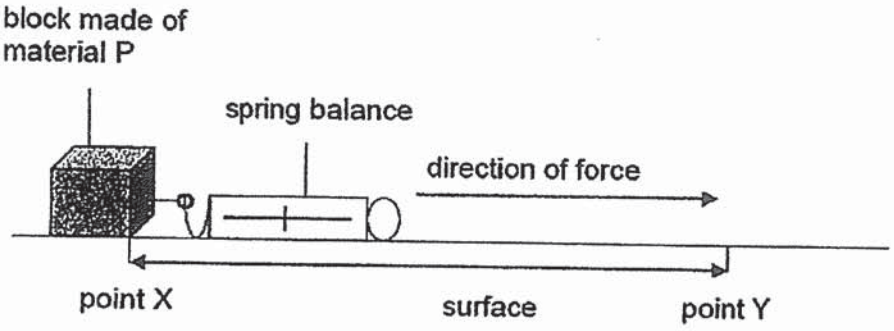
(a) State the energy change to show how the information board makes use of solar energy to provide useful information to road users? [1]

(b) Name a form of energy that is not useful in the above information board. [1]

(c) What happens to the energy mentioned in (b)? [1]

Score	3

36 Gurmit had three blocks which were made of different materials. The blocks were of the same mass. He pulled them one at a time across a surface from point X to Y as shown in the diagram below.



The force needed to pull each block across the surface was measured and recorded in the table below.

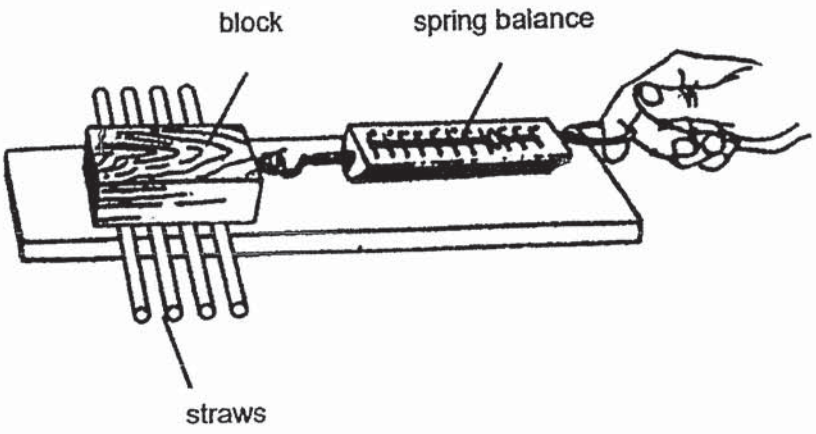
Material of block	Force needed to pull each block (units)
P	25
Q	18
R	30

(a) Why is a force needed to pull all the three blocks across the surface? [1]

(b) Gurmit wants to use one of the materials, P, Q or R, to make the soles of shoes worn by kitchen staff who needs to walk on the oily and wet kitchen floor daily. Which material should he choose? Explain your answer clearly. [3]

Go on to the next page

(c) John told Gurmit that he could reduce the amount of force needed to pull each block across the surface by putting a few straws underneath the blocks, as shown in the diagram below.



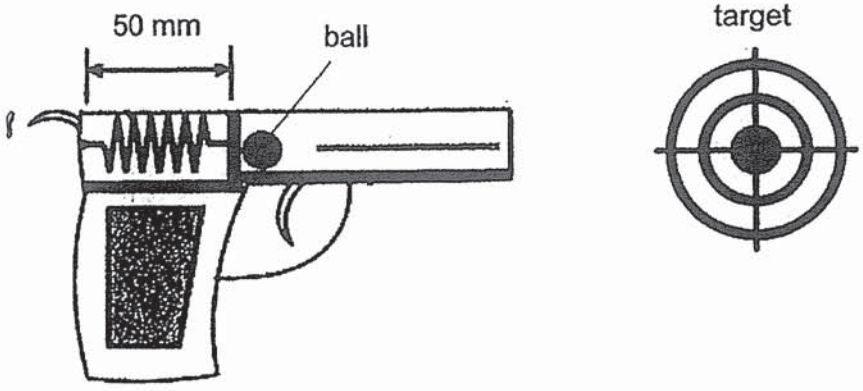
Do you agree with John? Explain your answer. [1]

_____

_____

Score	5

37 The diagram shows a toy gun that works using a spring. The original length of the spring is 100 mm. The gun is then locked in the position shown below. When the trigger is pulled, the ball will shoot out to hit a target.

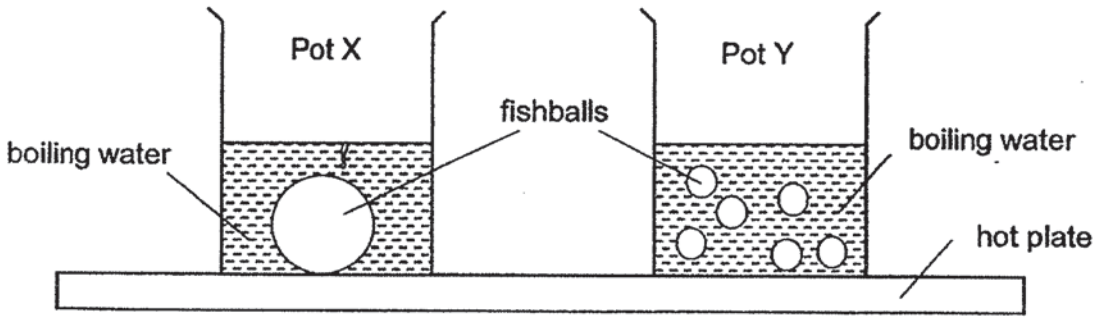


(a) State two forces that are acting on the ball when the toy gun is locked in the position shown above. [2]

(b) Explain, in terms of forces, why the ball will shoot out when the trigger is pulled. [2]

Score 4

38 Mrs Tan placed a 200 g big fishball into a pot, X, and 6 small fishballs with a total mass of 200 g into another similar pot, Y. The amount of boiling water in both pots was the same.



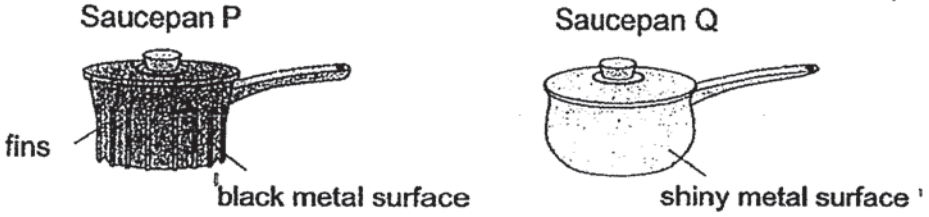
The pots were then placed on a hot plate to cook the fishballs at the same time. Mrs Tan found that the fishballs in pot Y took a shorter time to be cooked.

(a) Why did the fishballs in pot Y cook faster? [2]

_____

_____

(b) Mrs Tan went to the mall to buy a new saucepan. A sales assistant told her that saucepan P would cook food faster than saucepan Q on a stove, although both saucepans were made of the same material.



Describe how the features of saucepan P cause the food to be cooked faster. [2]

Fins : _____

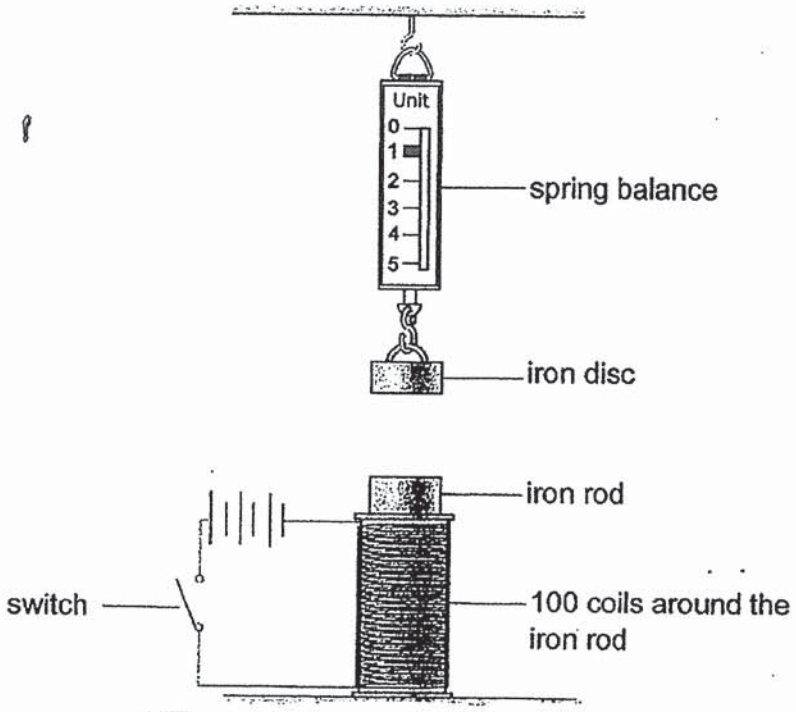
_____

Black metal surface : _____

_____

Score 4

39 Devi conducts an experiment to measure the force exerted on the iron disc when the switch is closed. The reading on the spring balance with the iron disc hung on it when the switch is opened is 1 unit.



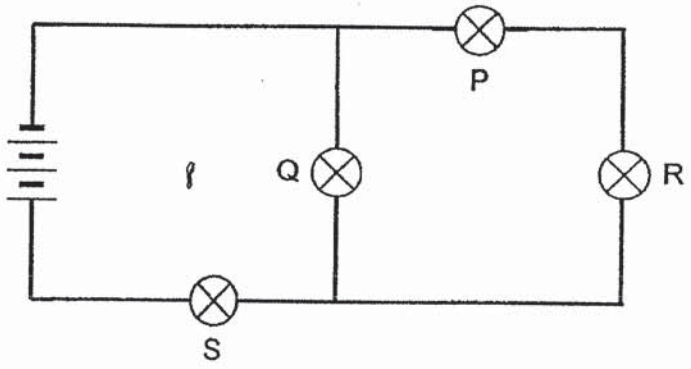
(a) Explain why the reading on the spring balance increases when the switch is closed. [2]

(b) Describe two ways that Devi can do to increase the readings on the spring balance. [2]

(c) What would the reading on the spring balance be if the iron rod is replaced by a glass rod of the same mass when the switch is closed? Explain your answer. [1]

Score 5

40 Johnson set up a circuit shown below. He wanted to put in a switch which could allow him to switch on or off a particular bulb while keeping the other bulbs lit.



(a) Mark with a cross, "X", on the circuit diagram above to show where he should place the switch. [1]

(b) If bulb P is replaced with a closed switch in the above set-up, what will happen to the brightness of bulb R? Explain your answer. [2]

----------End of Booklet B----------

Score	3

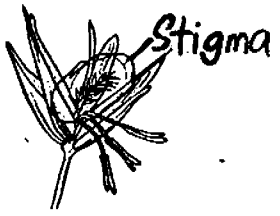
ANSWER KEY

YEAR : 2020
LEVEL : PRIMARY 6
SCHOOL : NAN HUA PRIMARY
SUBJECT : SCIENCE
TERM : CA1

BOOKLET A

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

BOOKLET B



Flower X

Q29 (a). Stigma

(b). Flower X- Pollinated by wind
Flower Y- Pollinated by animal

(c). Flower X has the anthers and stigma of the flower hanging out of the flower.

Q30 (a). A light sensor should be used.

(b). H , E , G , F

(c). Pond H. Water in Pond H allows most light to pass through. The to tally submerged plants can trap most light with chlorophyll in chloroplast to carry out most photosynthesis to make most food. Thus, Pond H would be most suitable for totally submerged plants to thrive in.

Q31 (a). Q : purple
R : yellow

(b). Test tube Q has only the Pond need. The Pond need would photosynthesis as there is sunlight , and Pond need would take in carbon dioxide. The concentration of carbon dioxide in test tube Q would decrease , and thus, the indicator of solution X would turn purple.

(c). Test tube S had both the Pond need and snails. The Pond need would take in carbon dioxide while photosynthesizing and the Pond snails would release carbon dioxide while respiring. Thus, the concentration of carbon dioxide remained almost the same and indicator solution X remained red in test – tubes.

Q32 (a). Sugar

(b). The water is used when photosynthesis occurs. The plant traps sunlight using the chlorophyll in chloroplast and uses water and carbon dioxide to make more sugar.

(c). The blood in A has more oxygen than the blood in B, and the blood in B has more carbon dioxide than the blood in A.

Q33 (a). Metal rings W,X and Z. Metal rings W and X repelled each other, and Metal rings W and Z repelled each other. Only magnets can repel each other and thus, W,X and Z are magnets.

(b).

Q34 (a). Student X. Student X is more mess than student Y and student X is at a higher height than student X. Thus, student X would have more gravitational potential energy than student Y.

(b). As Student X enters the water, kinetic energy is converted to Sound and Heat energy. Hence his kinetic energy decreases.

(c). The digested food in his body.

Q35 (a). Light energy - Chemical Potential energy -Electrical energy -Light energy.

(b). Heat energy

(c). The heat energy is transferred.

Q36 (a). There is friction between the block and the surface.

(b). R. Material R has the most friction between the block and the surface. Soles made of this material will prevent the person from slipping and falling on the oily and wet floor.

(c). The straws act as rollers to reduce friction between the block and the surface.

Q37 (a). Gravity

(b). When the trigger is pulled, the compressed spring will return to original length, thereby exerting a pushing force on the ball , causing the ball to shoot out.

Q38 (a). The fishballs have more surface area in contact with the boiling water and gained more heat from the boiling water / more heat was transferred from the boiling water to the fishballs.

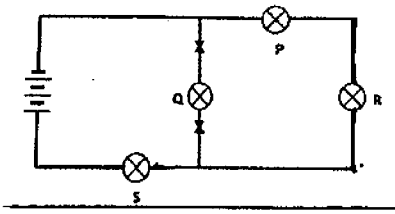
(b). Fins : There will be more surface area in contact with the heat source and the food will gain more heat from the heat source.
Black shiny surface : Black surface absorbs more heat and the food will gain more heat and the food will gain more heat from the heat source.

Q39 (a). There is a closed circuit and electric current flows through the circuit , turning the iron rod into an electromagnet. The electromagnet attracted the iron disc and pulled the iron disc downwards, stretching the spring in the spring balance.

(b). Add more batteries in the circuit
Add more coils around the iron rod

(c). 1 unit. The glass is not a magnetic and cannot be magnetized.

Q40 (a).



(b). Bulb R will become brighter. This is because the remaining bulbs are connected in series, so more electric current will flow through bulb R in the closed circuit.

3rd D