RAFFLES GIRLS' PRIMARY SCHOOL
PRELIMINARY EXAMINATION
PRIMARY SIX
2022

SCIENCE
(BOOKLET A)

Name: _____ ( ) **Date : 23 August 2022**

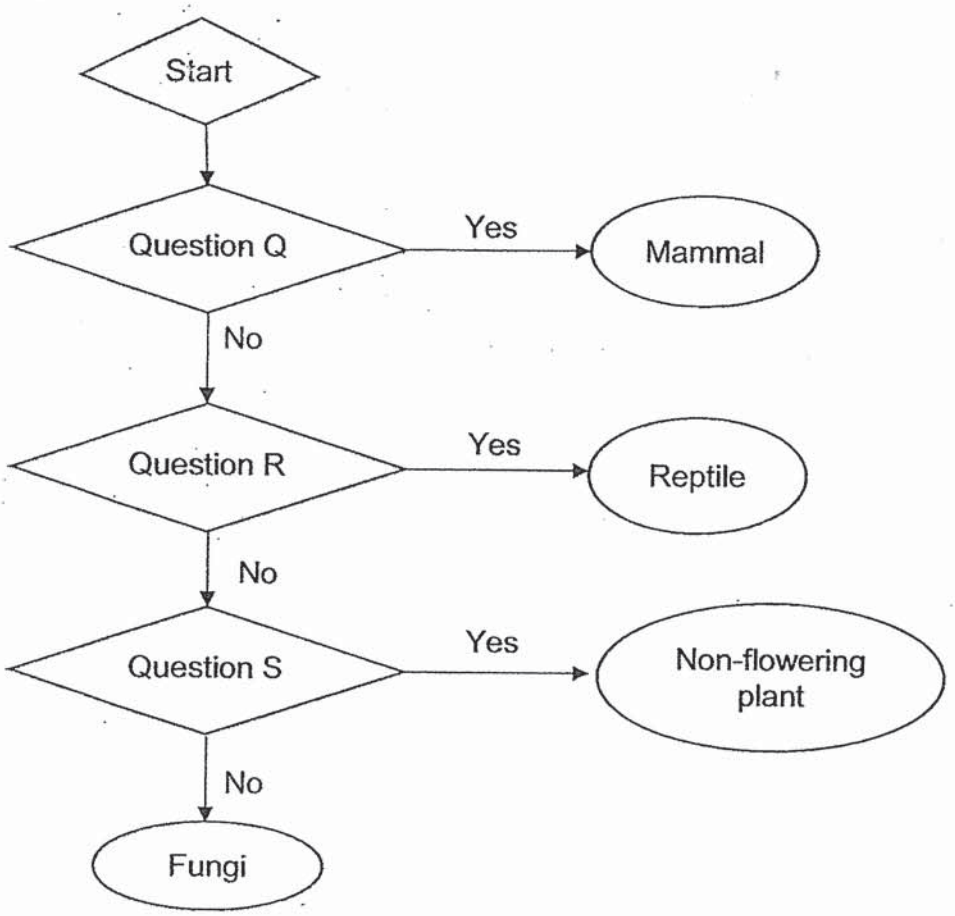
Class: P6 _____ **Total Time : 1h 45min**

INSTRUCTIONS TO CANDIDATES

1. **Write your name, class and index number in the spaces provided above.**
2. **Do not turn over this page until you are told to do so.**
3. **Follow all instructions carefully.**
4. **Answer all questions.**
5. **For Question 1- 28, use 2B pencil to shade your answers on the Optical Answer Sheet (OAS).**

Booklet A	56
Booklet B	44
Your score **out of 100**	
AL score	
Parent's signature	

1 Study the flowchart.



Which of the following can be questions Q, R and S?

	Question Q	Question R	Question S
(1)	Does it lay eggs?	Does it reproduce from spores?	Does it make its own food?
(2)	Does it produce milk for its young?	Does it lay eggs?	Does it make its own food?
(3)	Does it lay eggs?	Does it reproduce from spores?	Does it reproduce from seeds?
(4)	Does it produce milk for its young?	Does it make its own food?	Does it reproduce from seeds?

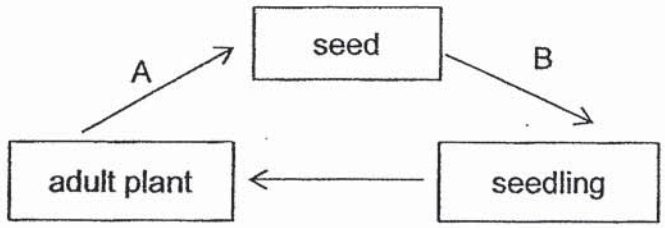
2 John wanted to investigate the conditions required for the growth of mould. He used four identical slices of bread and toasted two of the four slices. He placed each slice of bread into each box of identical size and placed them at different locations as shown in the table below.

Box	Type of bread	Material of box	Location
A	Not toasted	Wood	Near the window
B	Toasted	Clear plastic	Near the window
C	Not toasted	Wood	In the fridge
D	Toasted	Clear plastic	In the fridge

In which box would John most likely observe mould growing on the bread after a few days?

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

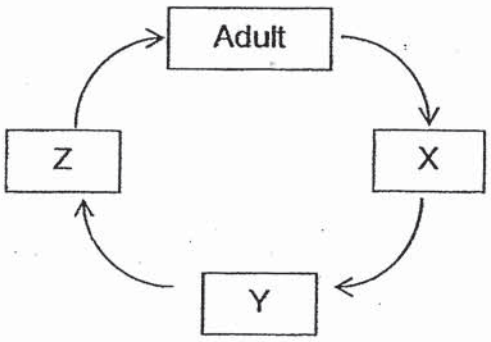
3 The diagram shows the stages of development of a flowering plant.



Which of the following processes are correct?

	Processes at A	Process at B
(1)	Pollination, Dispersal	Fertilisation
(2)	Pollination, Fertilisation	Germination
(3)	Fertilisation, Germination	Pollination
(4)	Dispersal, Germination	Fertilisation

4 The diagram shows the life cycle of an insect.



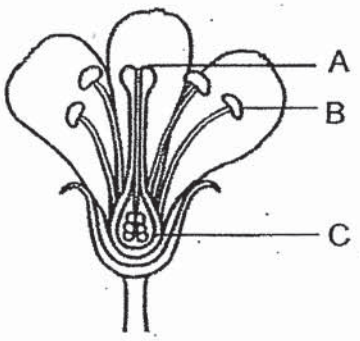
The insect has wings at certain stage(s) in its life cycle. The table shows the number of days the insect spent at each of the stages, X, Y and Z, when it is exposed to different surrounding temperatures.

Stage	Number of days spent at each stage	
	Temperature of surrounding : 22°C	Temperature of surrounding : 28°C
X	5	3
Y	18	11
Z	14	8

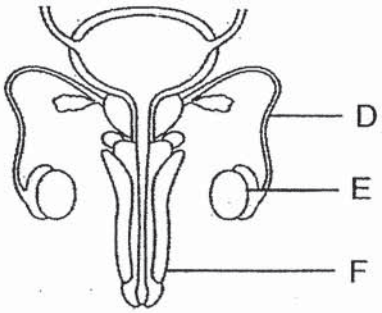
Based on the information given, which of the following statements is correct?

(1) The insect starts to fly at stage Y.
(2) The insect does not feed at stage X and Y.
(3) Its eggs take a shorter time to hatch at 28°C than at 22°C.
(4) The duration of one complete life cycle of the insect when exposed to a surrounding temperature at 28°C is longer than at 22°C.

5 The diagrams show the parts of the plant and human reproductive systems.



Plant reproductive system

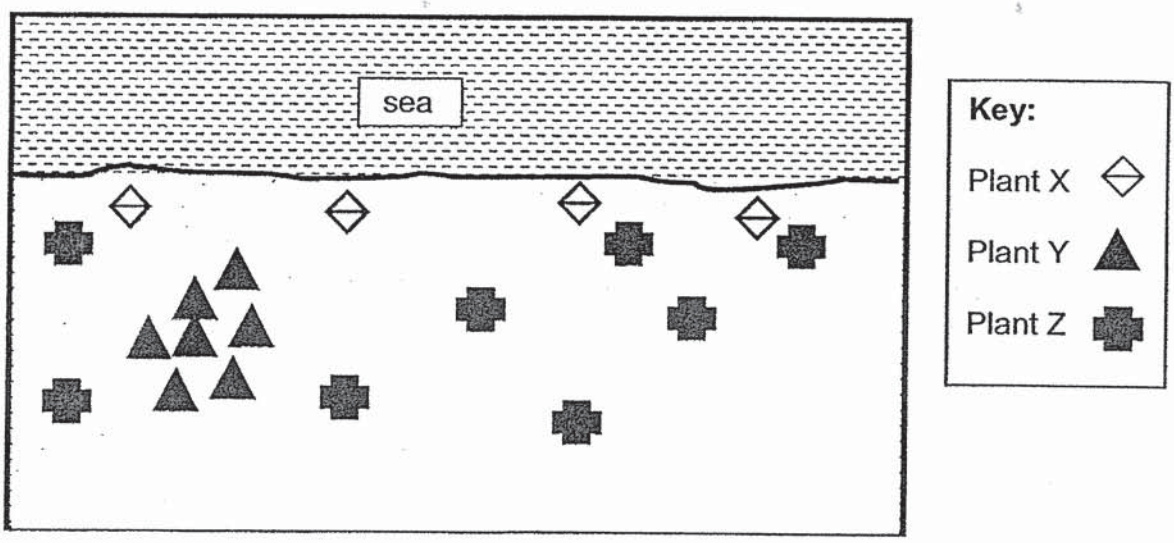


Human reproductive system

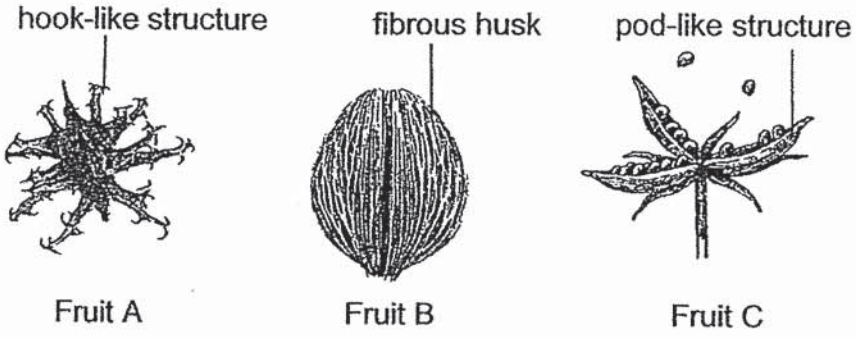
Which of the following identify the parts of the plant and human reproductive systems that have a similar function?

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

6 The diagram shows the distributions of plants, X, Y and Z, growing in an area near the sea.



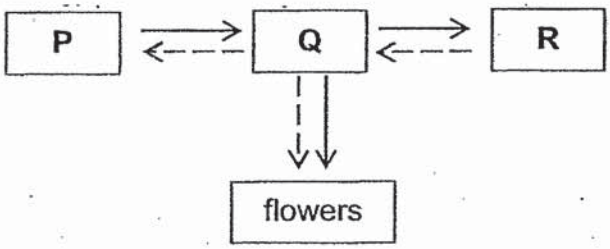
The following diagrams show fruits A, B and C.

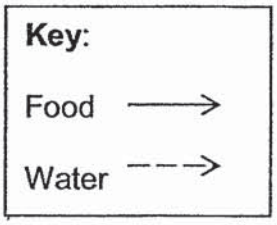


Which of the following correctly matches plants X, Y and Z to its fruit?

	Plant X	Plant Y	Plant Z
(1)	A	B	C
(2)	B	A	C
(3)	B	C	A
(4)	C	B	A

7 The diagram shows how food and water are transported in a plant.

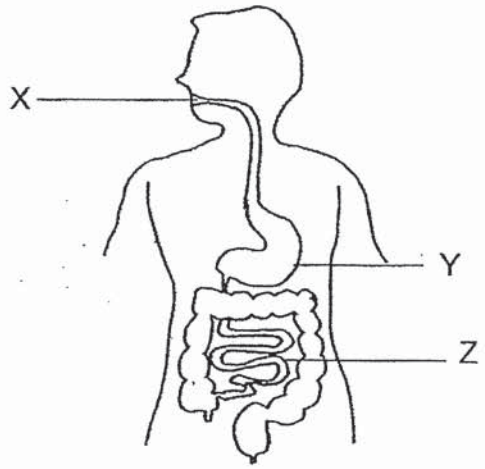




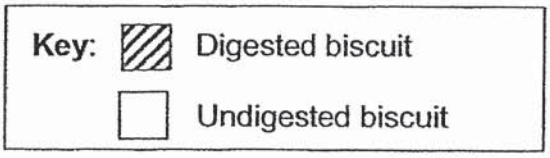
Which of the following shows the parts of the plants correctly?

	P	Q	R
(1)	Roots	Stem	Leaves
(2)	Leaves	Roots	Stem
(3)	Stem	Roots	Leaves
(4)	Leaves	Stem	Roots

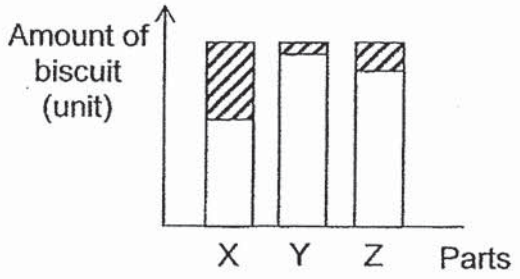
8 The diagram shows a human digestive system.



Which one of the following graphs correctly shows the amount of digested and undigested biscuit in parts X, Y and Z as the biscuit moves through the digestive system?



(1)



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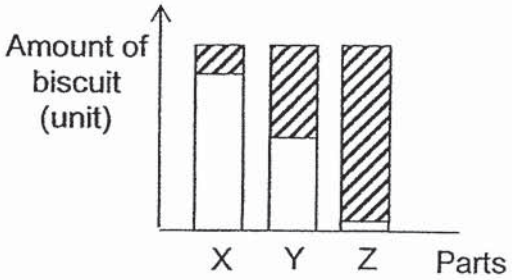

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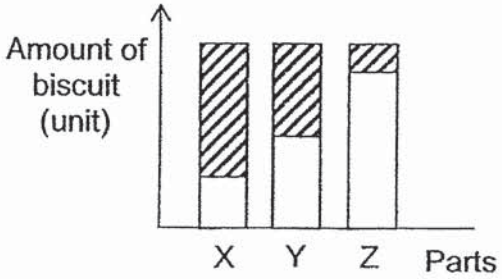

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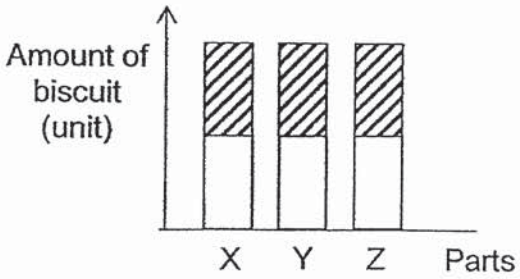
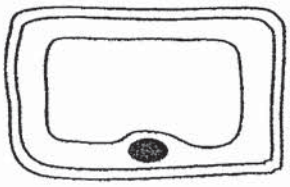
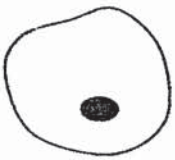


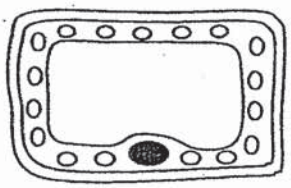
9 Study the cells, A, B and C.



Cell A



Cell B



Cell C

Which of the following correctly shows where the cells, A, B and C, were taken from?

	Cell A	Cell B	Cell C
(1)	Flower	Cheek	Leaf
(2)	Leaf	Root	Stem
(3)	Leaf	Cheek	Stem
(4)	Root	Fruit	Leaf

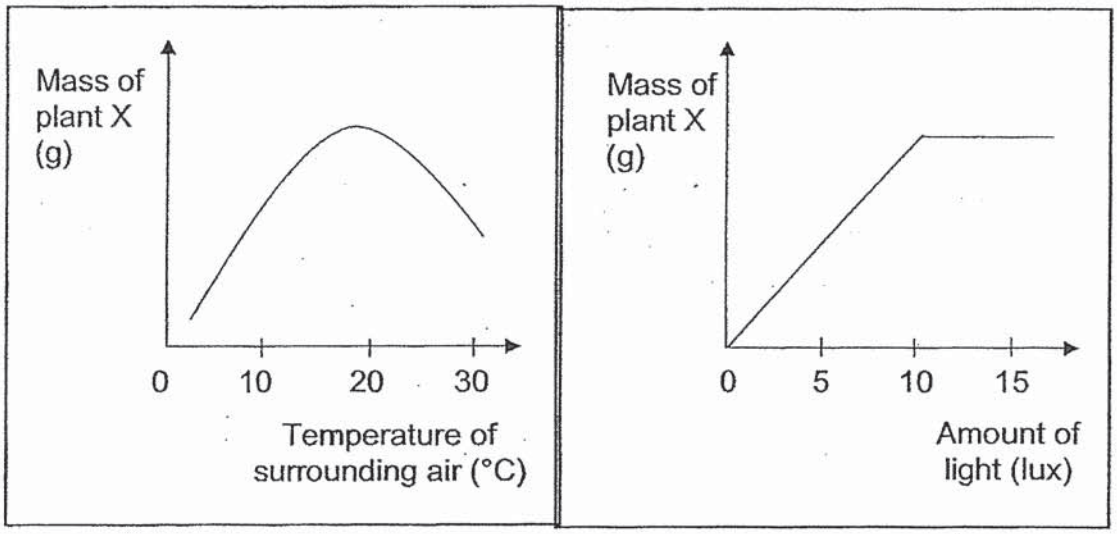
10 Peter conducted an experiment to find out the effect of different coloured lights on the number of eggs laid by hens.

Set-up	Colour of light	Type of chicken feed	Temperature of surrounding (°C)	Number of hours per day exposed to light (h)
A	Red	Worms	21	16
B	Blue	Worms	21	16
C	Green	Worms	35	16
D	Yellow	Corn	21	16

Which set-ups should Peter use for his investigation?

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

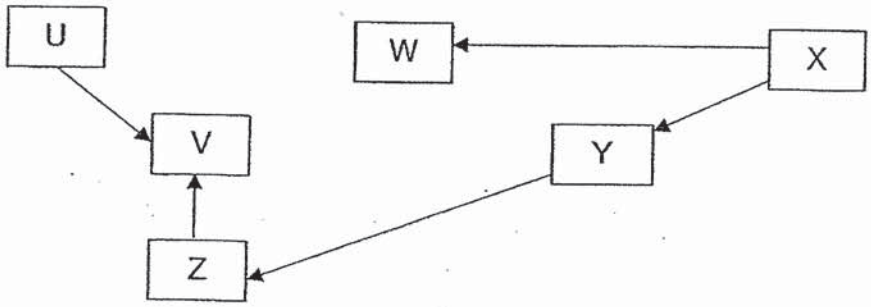
11 William wanted to find out the effect of light and temperature on plant growth. He recorded his results in the graphs.



Based on the results of his experiment, which of the following conditions are most favourable for plant growth?

	Temperature of surrounding air (°C)	**Amount of light (lux)**
(1)	5	15
(2)	10	10
(3)	20	10
(4)	30	15

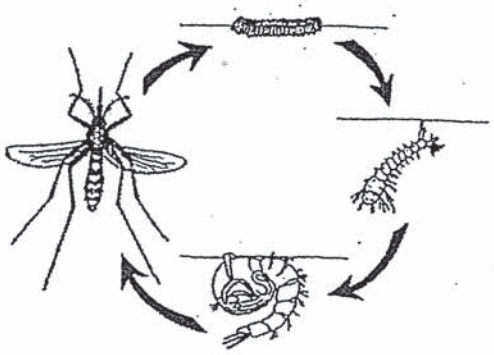
12 The diagram shows a food web.



Based on the information, which of the following is correct?

(1) X feeds on W and Y.
(2) U is the only food producer.
(3) V is a plant and animal eater.
(4) Z is a plant and animal eater.

13 The diagram below shows the life cycle of a mosquito.



Scientists discovered that when a male mosquito carrying bacteria W mates with a female mosquito, the eggs produced will not hatch.

Which of the following would most likely happen over time when scientists release large population of male organism X with bacteria W into the environment?

A Decrease in the number of larva.
B Increase in the number of hatchable eggs.
C Decrease in the population of mosquitoes.

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

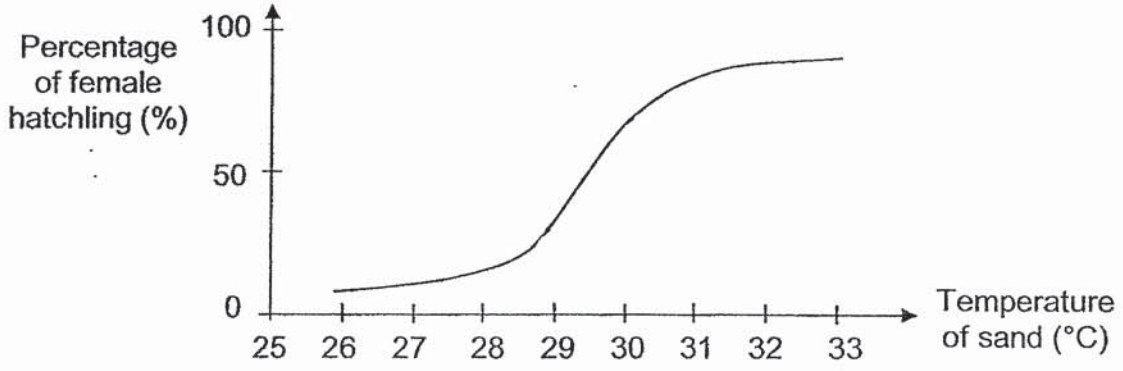
14 George recorded the observations of flowers E, F and G in the table. Only flowers E and F belong to the same type of plant. A tick (√) indicates the presence of the characteristic.

Flower	Produces nectar	Has female reproductive part(s)	Has male reproductive part(s)	Gives off a strong rotting meat smell
E		√		√
F			√	√
G	√	√	√	

He saw an insect and its larvae that feed on rotting meat.
Which of the following about the insect is likely to be correct?

(1) The insect is attracted to flower G.
(2) The insect feeds on the nectar of flower G.
(3) The insect transfers pollen grains from flower F to flower E.
(4) The insect transfers pollen grains from flower G to flower E.

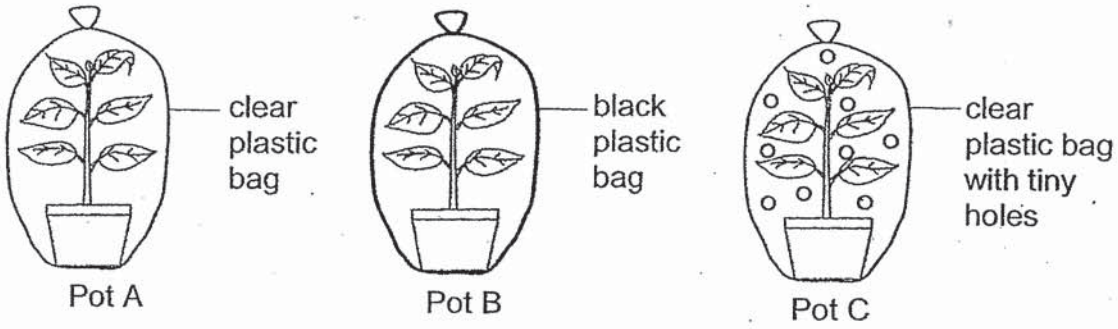
15 The temperature of the sand where organism T lays its eggs will determine whether the hatchling is a male or female. The graph shows the effects of temperature on the percentage of female organism T being hatched.



Which temperature range would result in the greatest decrease in the number of male organism T?

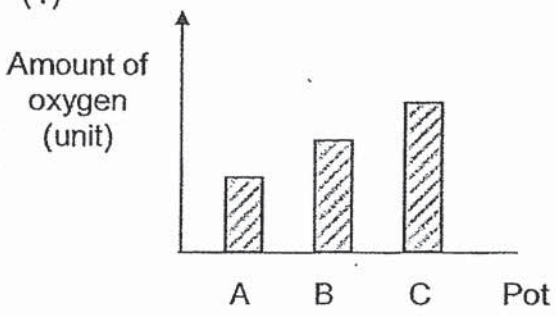
(1) 26°C to 27°C
(2) 27°C to 28°C
(3) 29°C to 30°C
(4) 32°C to 33°C

16 Megan wrapped three identical pots of plants with different types of plastic bags of the same size. She left the pots of plants under bright light for several hours.



Which graph correctly represents the amount of oxygen in the plastic bags after several hours?

(1)



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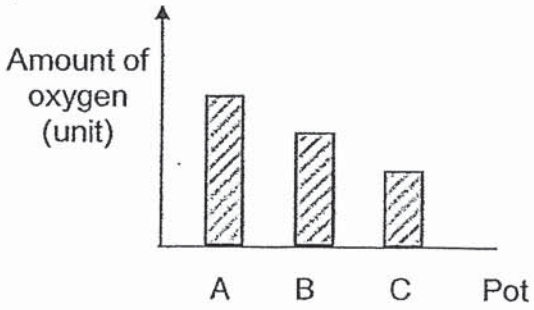

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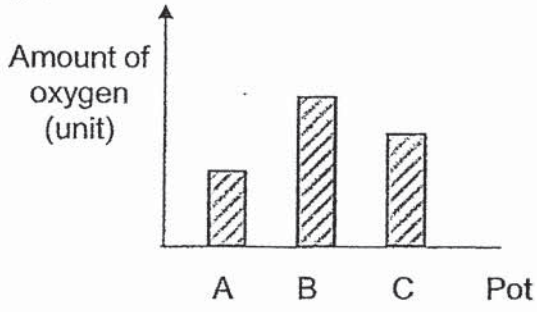

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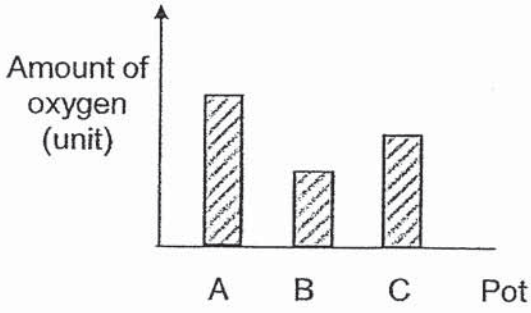
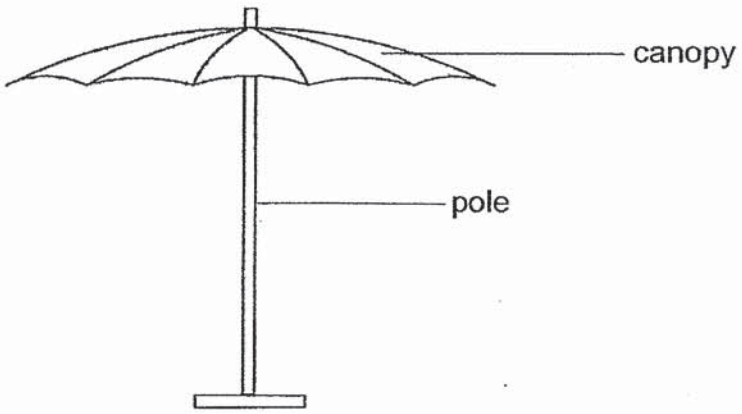


17 The table shows the properties of four materials, P, Q, R and S. A tick (√) indicates the presence of the property.

Material	Property			
	Waterproof	Flexible	Allows light to pass through	Strong
P	√			√
Q	√	√	√	
R	√	√		√
S			√	

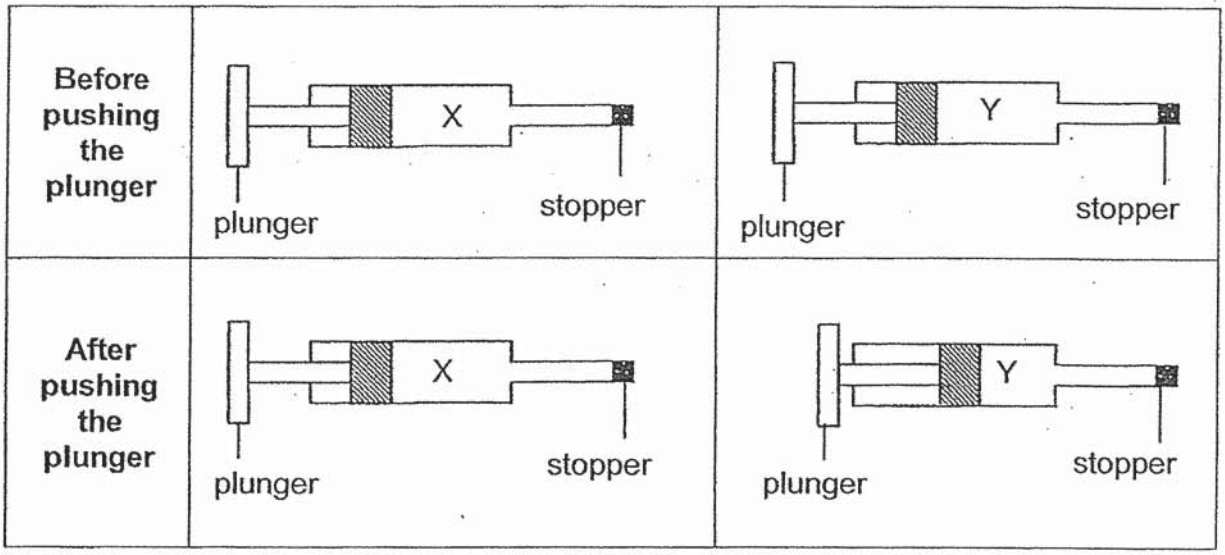
The diagram shows an outdoor umbrella that can be used to shield the user from the sun and rain. The canopy can be folded when it is not in use and the pole supports the canopy.



Which of the following materials are most suitable for making the canopy and the pole?

	Canopy	Pole
(1)	P	R
(2)	Q	S
(3)	R	P
(4)	S	Q

18 The diagrams show two identical syringes filled with $50cm^3$ of substances X and Y before and after the plungers had been pushed in with the same amount of force.



Which of the following shows the changes in the volume and the mass of substances X and Y after pushing the plungers in?

	Volume of substance		Mass of substance	
	X	Y	X	Y
(1)	Same	Decrease	Same	Same
(2)	Same	Same	Same	Same
(3)	Decrease	Decrease	Decrease	Decrease
(4)	Same	Decrease	Same	Decrease

19 The table shows the states of three substances, X, Y and Z at different temperatures.

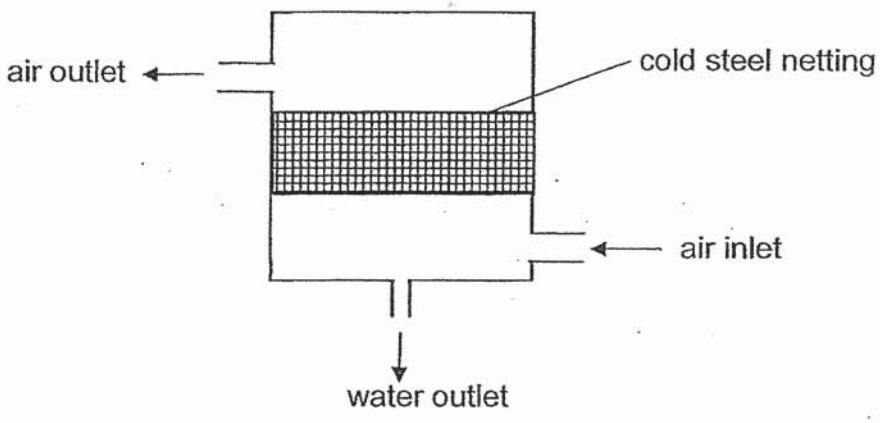
Substance	State of substance at		
	50°C	90°C	110°C
X	Solid	Solid	Solid
Y	Solid	Liquid	Gas
Z	Solid	Liquid	Liquid

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

A X has the highest melting point.
B Y has a lower boiling point than Z.
C Z has a higher freezing point than X.

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

20 The diagram shows a machine that is able to produce water from the surrounding air that passes through it.



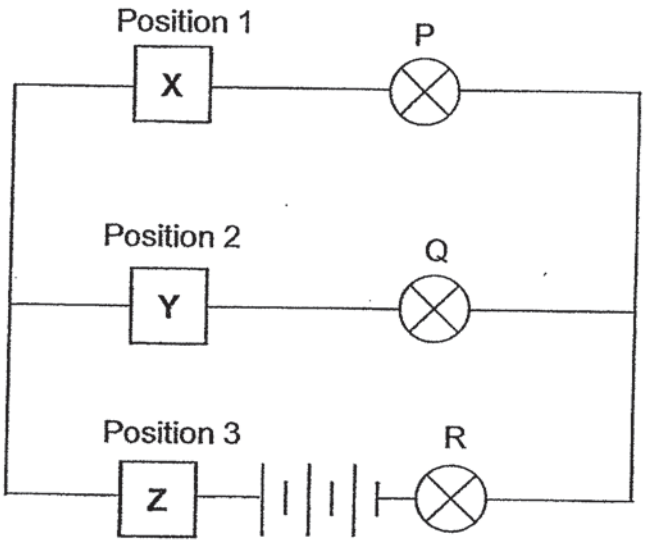
Surrounding air, with temperature ranges from 24°C to 35°C, enters through the air inlet and passes through a sheet of cold steel netting before leaving through the air outlet. The temperature of the netting is kept constant at 10°C.

Which of the following change(s) will increase the volume of water collected over a fixed period of time?

A Increase the size of the air inlet.
B Increase the surface area of the steel netting.
C Increase the temperature of the netting to 20°C.

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

21 The circuit diagram consists of three identical bulbs, P, Q and R, and three different materials, X, Y and Z, placed at positions 1, 2 and 3, respectively.

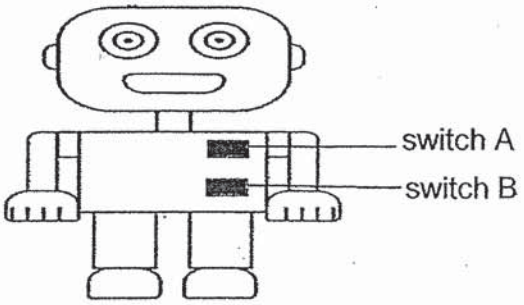


It was observed that only bulbs P and R lit up but not bulb Q. The positions of materials X, Y and Z were then rearranged and observations of the bulbs were recorded.

Which one of the following is a possible observation?

	Position			Bulb		
	1	2	3	P	Q	R
(1)	X	Z	Y	Lit	Unlit	Unlit
(2)	Y	X	Z	Unlit	Lit	Lit
(3)	Y	Z	X	Lit	Unlit	Lit
(4)	Z	Y	X	Unlit	Unlit	Lit

22 The diagram shows a battery-operated toy.

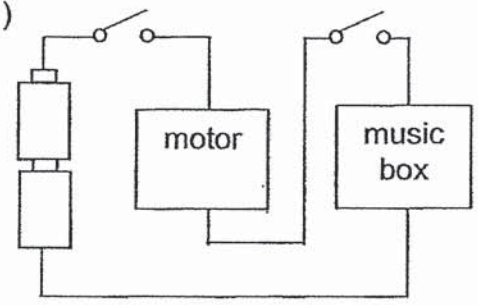


Within the toy, there were a motor and a music box to spin the head of the toy and to produce music respectively. When the switch(es) was/were closed, the following observations were made.

Switch(es) closed	Observation
A only	• The head did not spin • There was music
B only	• The head spun. • There was no music.
Both A and B	• The head spun. • There was music.

Which of the following shows the correct arrangement of the electrical components in the toy?

(1)



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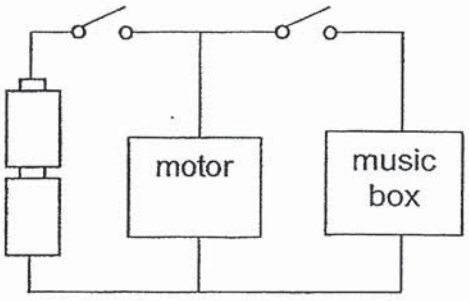
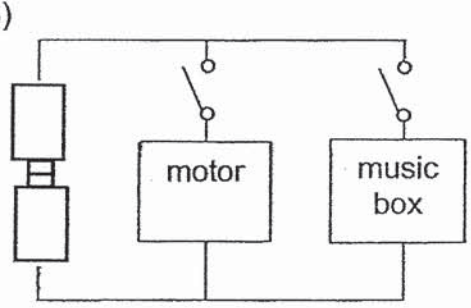
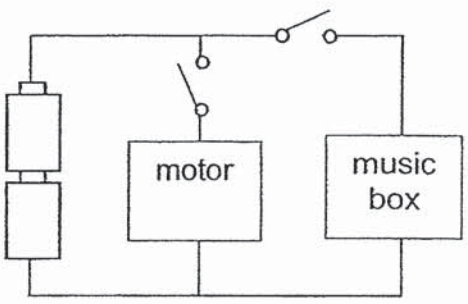


(3)

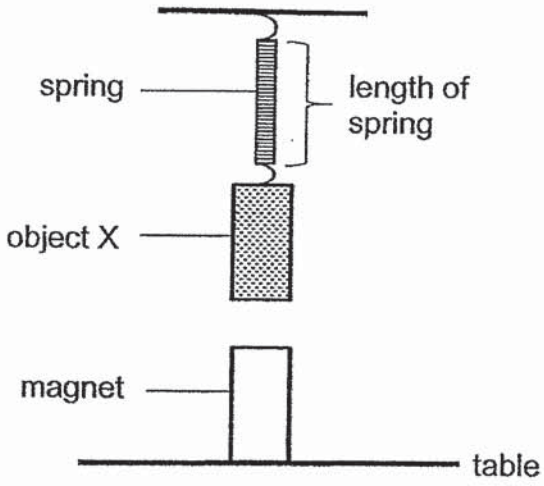


(4)



23 Jasmine conducted an experiment using two objects, X and Y, which were of the same mass but different materials. She hung object X on a spring and fixed the magnet to a table, as shown in the diagram.

She observed that the length of spring attached to object X remained the same before and after placing the magnet below it.



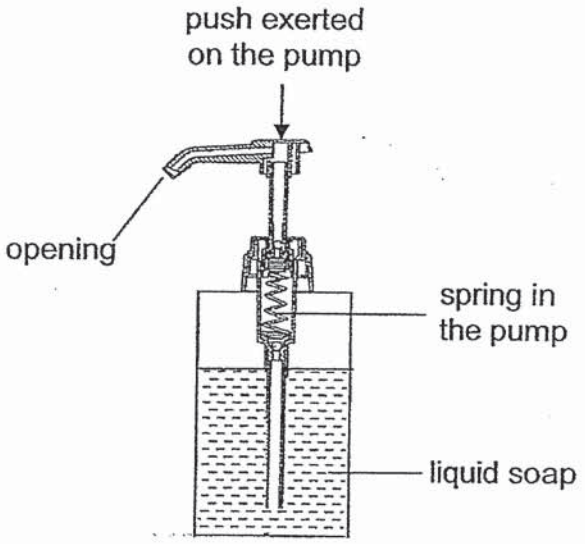
After she has replaced object X with object Y, she observed that the length of spring attached to object Y was shorter than when object X was attached to the spring.

Based on the observations, which of the following statement(s) is/are definitely true?

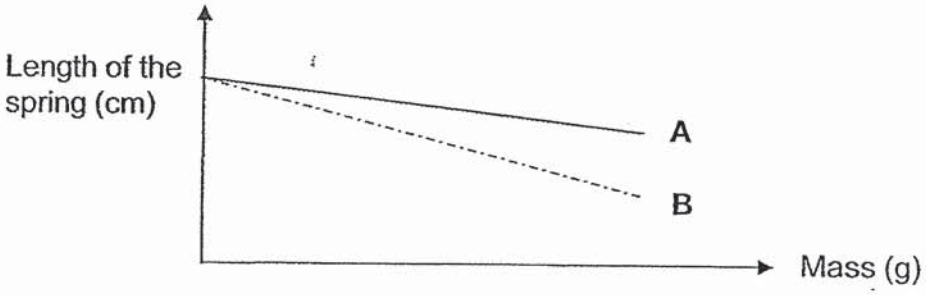
A Object Y is a magnet.
B Object X is a magnetic material.
C Object Y is attracted to the magnet.
D Object X is heavier than object Y.

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

24 The diagram shows a pump bottle containing liquid soap. When Jane pushes the pump down, the spring in the pump compresses, squeezing the liquid soap out of the bottle through the opening.



The graph below shows how the lengths of springs A and B change when different masses were rested on top of the spring.

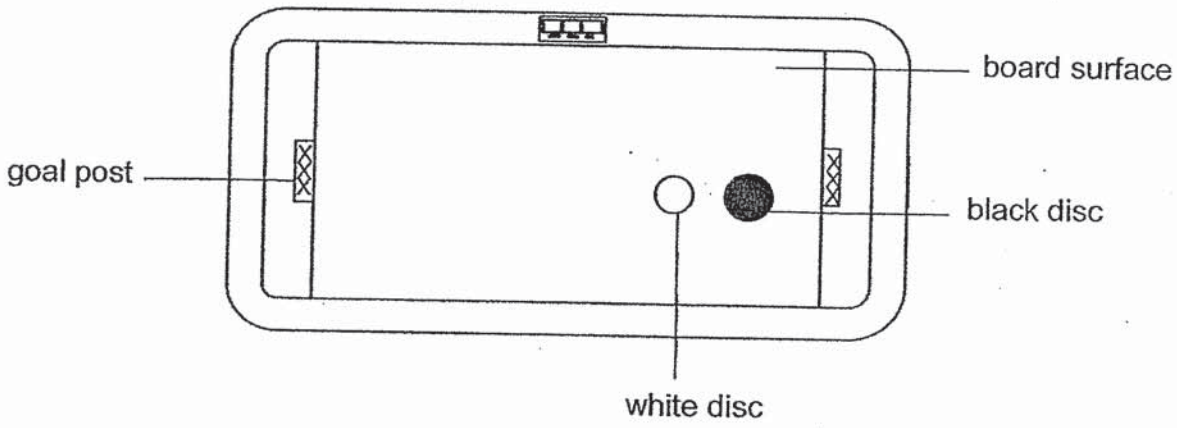


Jane wanted to pump out the liquid soap more easily.

Which of the following shows the spring that she should use and the correct corresponding explanation?

	Spring	Explanation
(1)	A	Less force is needed to push down the pump.
(2)	B	Less force is needed to push down the pump.
(3)	A	More force is needed to push down the pump.
(4)	B	More force is needed to push down the pump.

25 The diagram shows a game whereby the player will slide the black disc on the board surface to hit the white disc into the goal post.



Aaron tried to play the game on different board surfaces, A, B and C, by using the same amount of force to slide the black disc to hit the white disc.

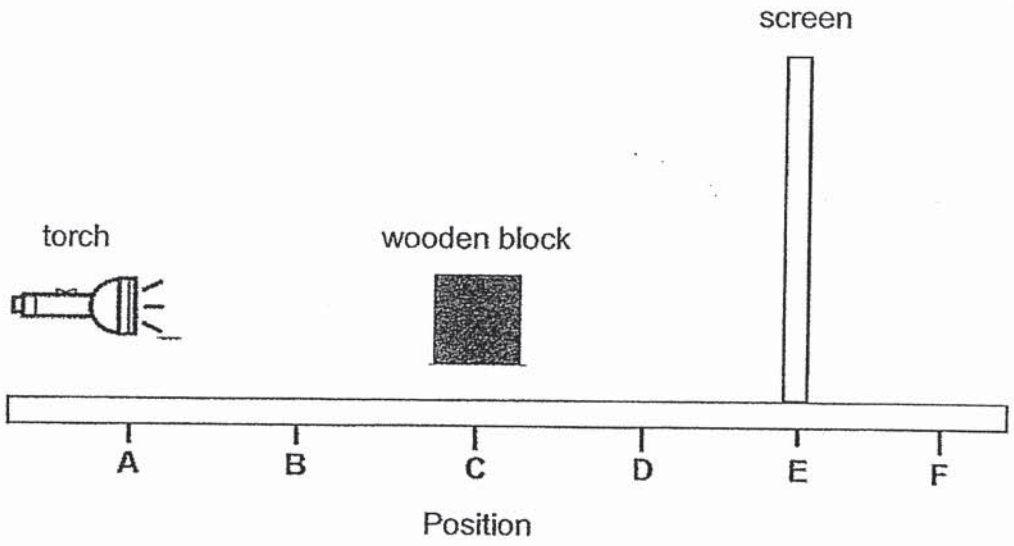
He recorded the distance travelled by the white disc on each board surface in the table.

Board surface	Distance travelled (cm)
A	140
B	120
C	100

Which of the following statements is definitely correct?

(1) Surface B was rougher than surface A.
(2) The white disc travelled faster on surface B than on surface A.
(3) The white disc on surface A was least likely to reach the goal post.
(4) There was more friction between the white disc and surface B than between the white disc and surface C.

26. Thomas shone a torch at a wooden block as shown. A shadow was cast on the screen.

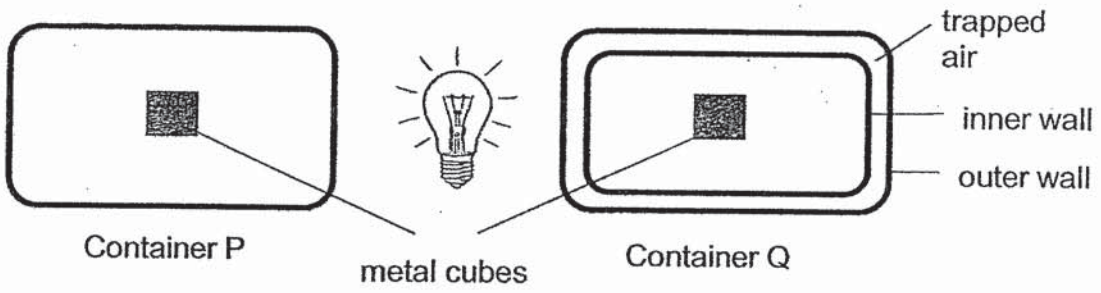


Which of the following positions should the torch, the wooden block and the screen be placed in order to cast the biggest shadow?

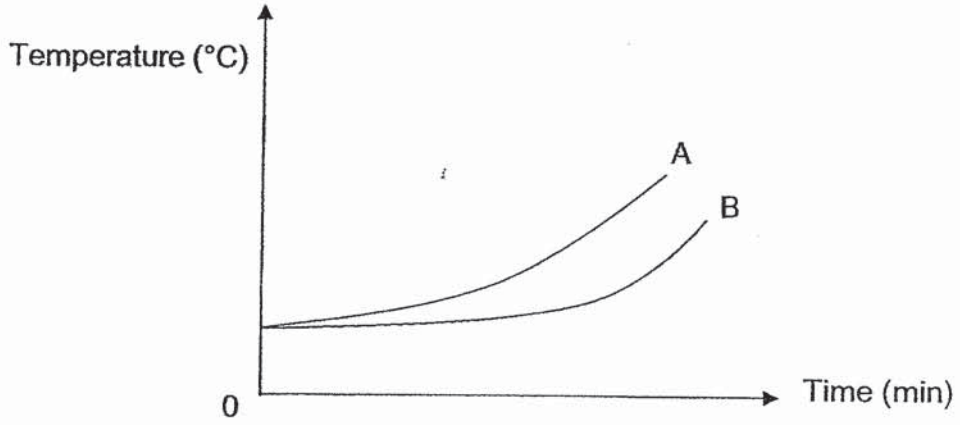
	Torch	Wooden block	Screen
(1)	A	C	E
(2)	B	D	F
(3)	A	B	F
(4)	B	D	E

27 The diagram shows a lit bulb placed at the same distance from two containers P and Q. Container P is single wall container while Container Q is a double wall container that has a layer of trapped air between the two walls.

Both containers were made from the same material and of the same size.



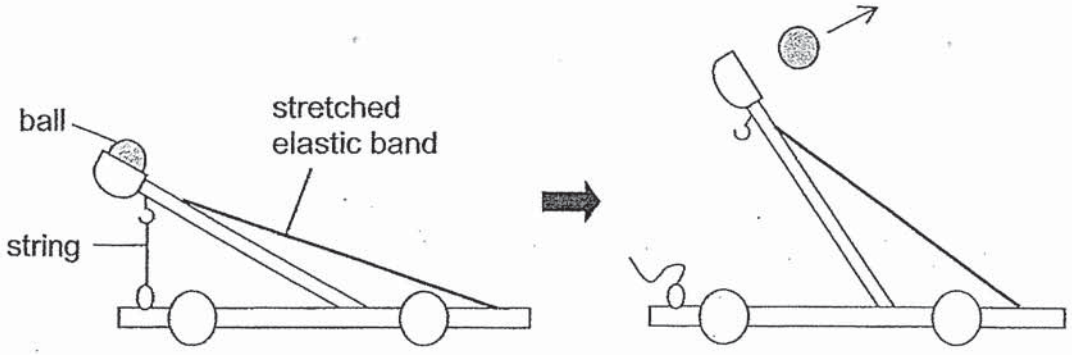
The temperature of the metal cubes in both containers are recorded as shown in the graph.



Which of the following shows the correct graph and the explanation for the change in the temperature of the metal cubes in the containers?

	Container	Graph	Explanation
(1)	P	A	Solid is a poorer conductor of heat.
(2)	P	B	Solid is a better conductor of heat.
(3)	Q	A	The trapped air is a better conductor of heat.
(4)	Q	B	The trapped air is a poorer conductor of heat.

28 The diagram shows a launcher before and after the piece of string was cut.



Which of the following correctly shows the change made to the set-up and its corresponding explanation that would result in **greater distance** travelled by the ball?

	Change	Explanation
(1)	Use a ball of greater mass	The elastic band would store less elastic potential energy before the string was cut.
(2)	Use a longer elastic band	The elastic band would store more elastic potential energy before the string was cut.
(3)	Use a thicker elastic band	The elastic band would store less elastic potential energy before the string was cut.
(4)	Use a shorter string	The elastic band would store more elastic potential energy before the string was cut.

RAFFLES GIRLS' PRIMARY SCHOOL
PRELIMINARY EXAMINATION
PRIMARY SIX
2022

SCIENCE
(BOOKLET B)

Name: _____( ) Date : 23 August 2022

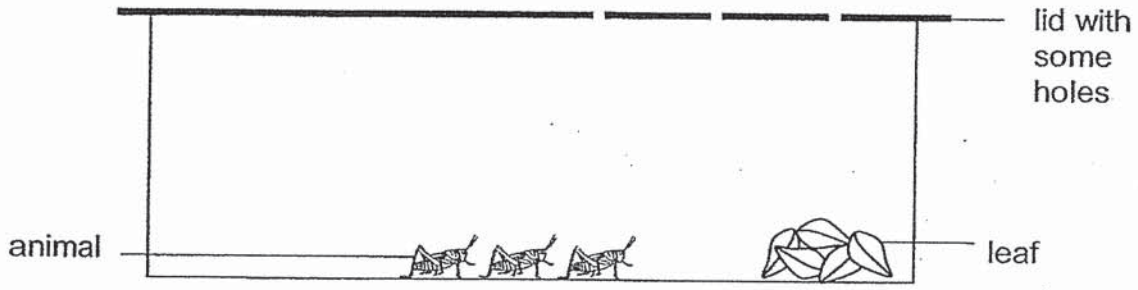
Class: P6 _____ Total Time : 1h 45min

INSTRUCTIONS TO CANDIDATES

1. Write your name, class and index number in the spaces provided above.
2. Do not turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Use a dark blue or black ballpoint pen to write your answers in the space provided for each question.
6. Do not use correction fluid / tape or highlighters.

Mark	/ 44

29 Tim placed some animals in a tank and added freshly-cut leaves every day. A lid with tiny holes was used to cover the tank to prevent the animals from escaping. The diagram shows the side view of the tank.



Tim observed the animals over a period of time and recorded his observations in the table.

(a) Complete the table by filling in the characteristic of living things related to each observation of the animals. Part (i) has been done for you. [2]

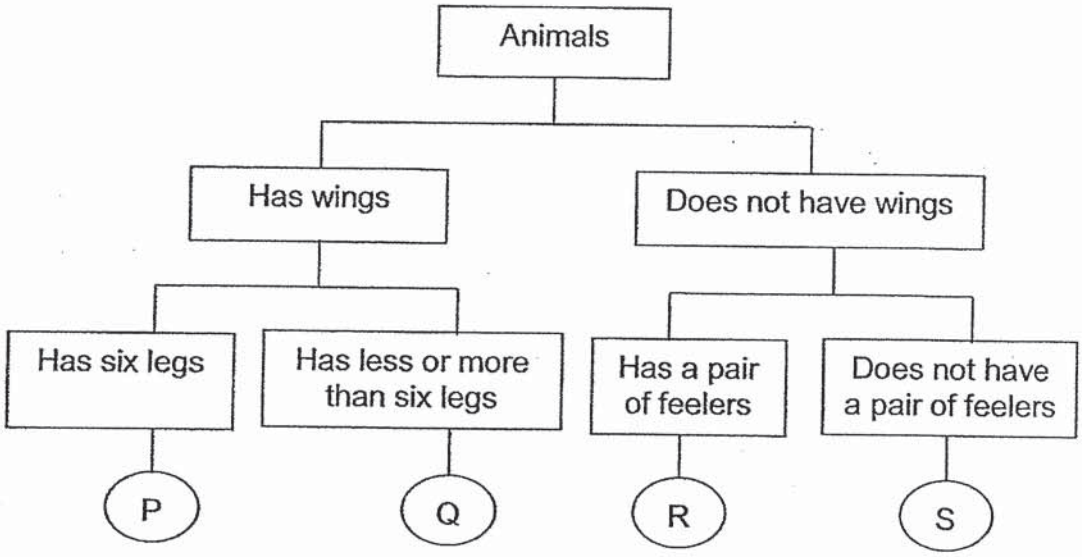
Observation	Characteristic of living things
Example : There were fewer leaves left in the bowl as compared to the previous day.	Example : (i) Living things need food to survive.
There were more young animals in the tank after some time.	(ii) Living things _____ _____
The animals were found at different parts of the tank.	(iii) Living things _____ _____

Continue on page 27

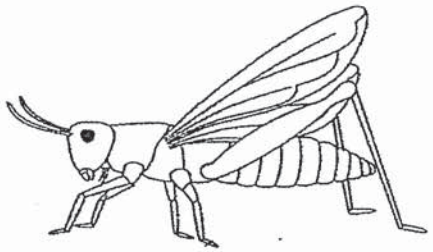
Score	/ 2

Continued from page 26

The chart shows how some animals are classified into groups P, Q, R and S.



(b) Based on the information above, which group, P, Q, R or S, does the animal shown below belong to? Explain your answer. [1]

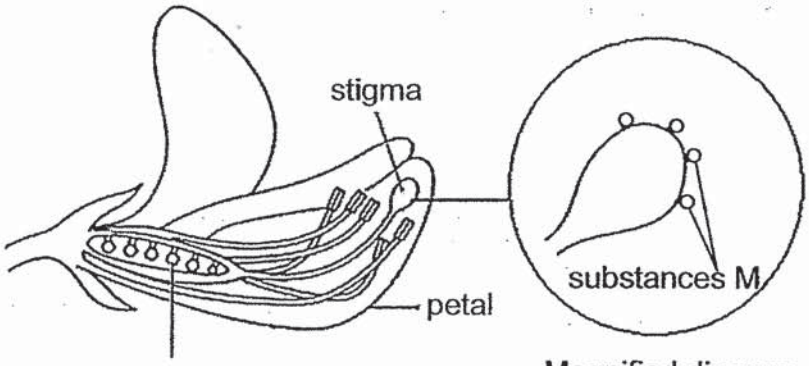


_____

_____

Score 1

30 The diagram shows the cross-section of a flower from a plant. It has a sweet-smelling scent and brightly coloured petals.



Cross-section of a flower from the plant

Magnified diagram of stigma

Substances M were found on the stigma. Substances M were from another flower of the same type of plant.

(a) How did substances M end up on the stigma of the flower? [1]

_____

_____

(b) Identify the process that needs to take place before the ovule can develop into a seed inside the fruit. [1]

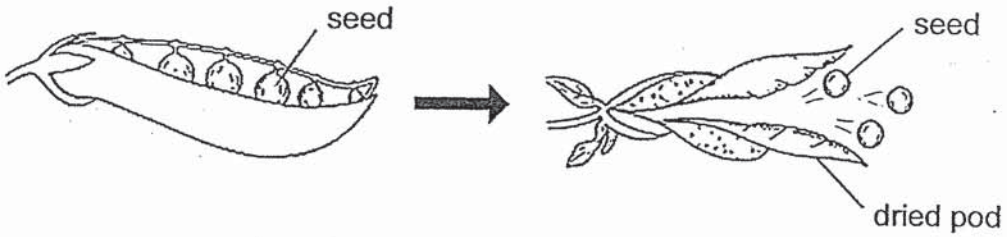
_____

Continue on page 29

Score 2

Continued from page 28

The diagram shows how the seeds in the fruit of the plant were dispersed.



(c) State one advantage and one disadvantage of this method of dispersal. [2]

(i) Advantage :

_____

_____

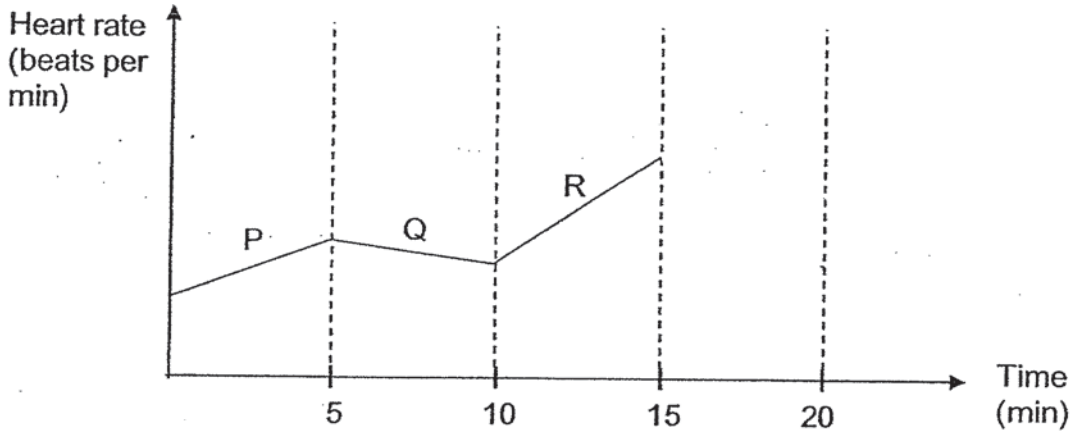
(ii) Disadvantage :

_____

_____

Score	/ 2

31 Jenny was resting on a chair before she carried out different activities, P, Q and R, for fifteen minutes. Then she stopped and rested on a chair for five minutes. The graph shows how Jenny's heart rate changed during the activities.



(a) Complete the graph to show how Jenny's heart rate changed from fifteenth to twentieth minute. [1]

(b) Which activity, P, Q or R, required most energy to carry out? Explain your answer. [2]

_____

_____

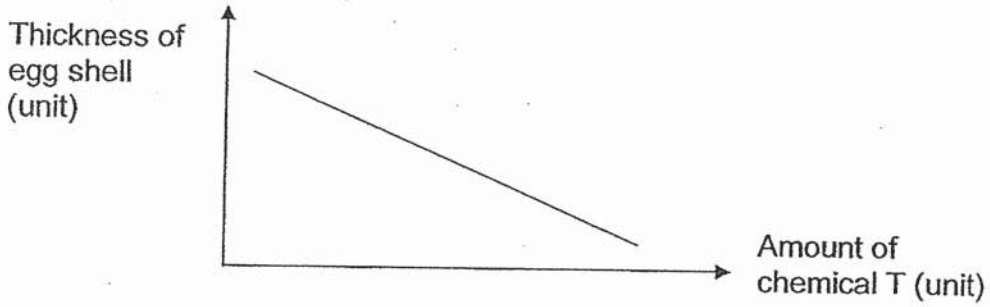
_____

Score	/3

32 The food chain shows the food relationship among some organisms living in a farm. The farmer sprays chemical T on the crops to kill the insects in the farm.

plants ⟶ insects ⟶ bird

The graph shows the effect of the amount of chemical T on the thickness of the egg shell of the bird.



(a) What is the relationship between the amount of chemical T and the thickness of egg shell? [1]

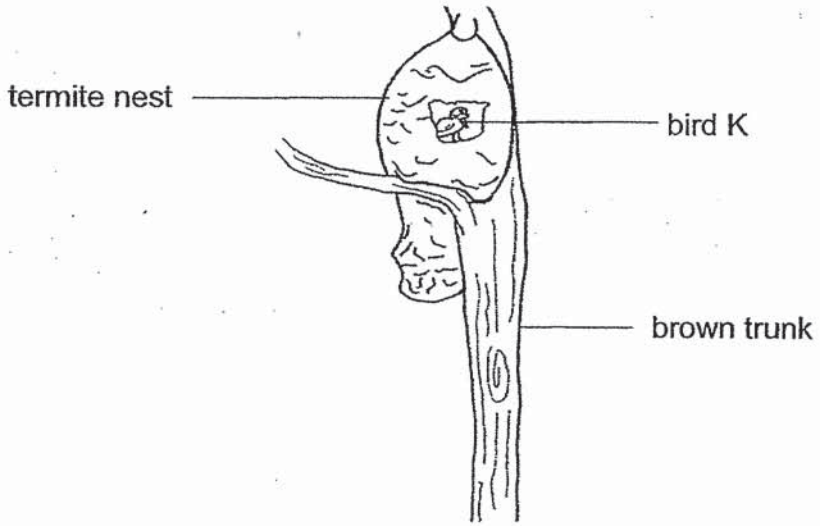
(b) Explain how chemical T is found in the bird's body. [1]

The adult bird sits on its eggs to provide warmth for the young chick inside to develop.

(c) How will the continued use of chemical T by the farmer affect the population of the bird? Explain your answer. [2]

Score	
	4

33 Sally found a termite nest which was used by bird K to lay its eggs as shown in the diagram below.



She recorded her observations in the table.

• The nest is built high above the ground. • There are termites crawling in and out of the nest. • The termite nest is brown in colour and looks like a pile of dirt.

The food chain shows the food relationship among some organisms.

plant ⟶ insect ⟶ bird K ⟶ monitor lizard

(a) Based on the information, what are two advantages for bird K to lay its eggs in the termite nest? [2]

Advantage 1	
Advantage 2	

Continue on page 33

Score	2

Continued from page 32

(b) Sally also observed that the parent bird K and a few adult birds from the same family took turns to look for food for the newly hatched chicks.

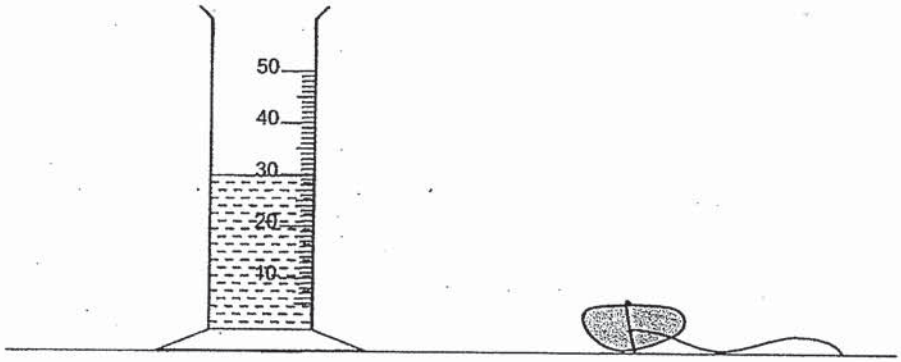
Explain how this turn-taking behaviour increases the chance of survival of the chicks. [1]

_____

_____

Score _/1

34 Ahmad wants to find the volume of a piece of stone tied to a string using only the apparatus shown in the diagram.



Measuring cylinder filled with 30ml of water

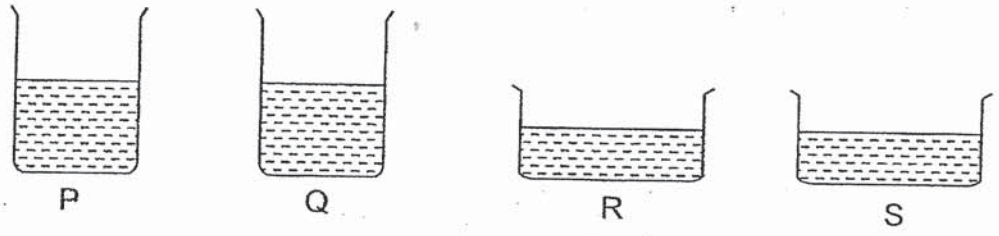
Stone tied to a string

(a) Describe how Ahmad can find the volume of the stone. You may draw a diagram to explain your answer. [2]

(b) His friend suggests that Ahmad can use the method in (a) to find the volume of a cork too. Do you agree with his friend? Give a reason for your answer. [1]

Score / 3

35 Tammy poured 80ml of water into each of the four containers, P, Q, R and S, as shown in the diagram. The containers were made of the same material.



She exposed the containers to different surrounding temperatures. She measured the volume of water left in each container after a fixed period of time. The table shows her results.

Container	Surrounding temperature (°C)	Volume of water left (ml)
P	30	40
Q	40	35
R	30	30
S	40	25

(a) Tammy wanted to find out the effect of temperature on the volume of water left in the container after a fixed periodof time.

Which two containers should Tammy compare? Explain your answer. [1]

_____

_____

(b) Explain why the volume of water in P was the greatest at end of the experiment. [2]

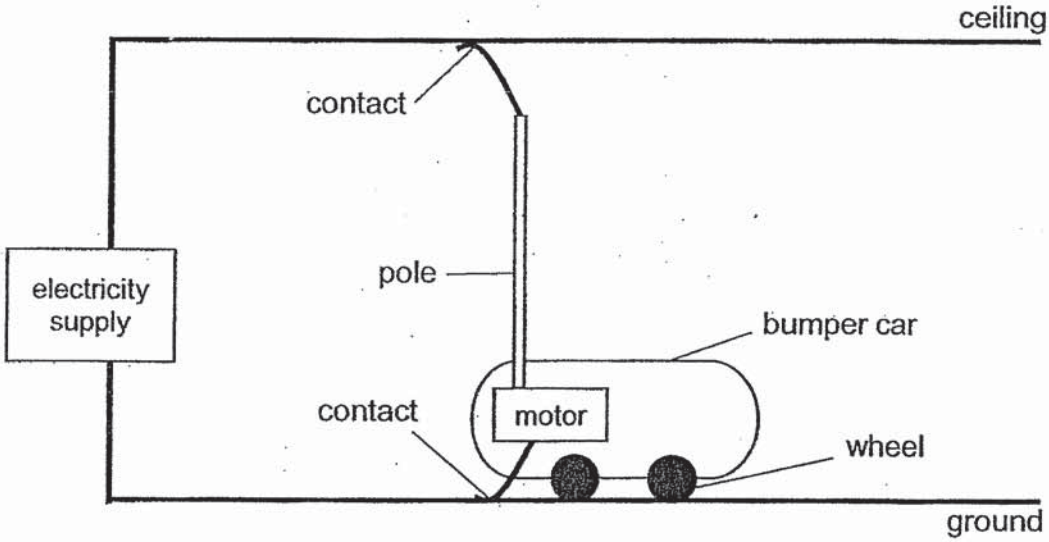
_____

_____

_____

Score	
	3

36 In an amusement park, people drive bumper cars in an enclosed driving zone. The diagram shows the circuit for a bumper car.



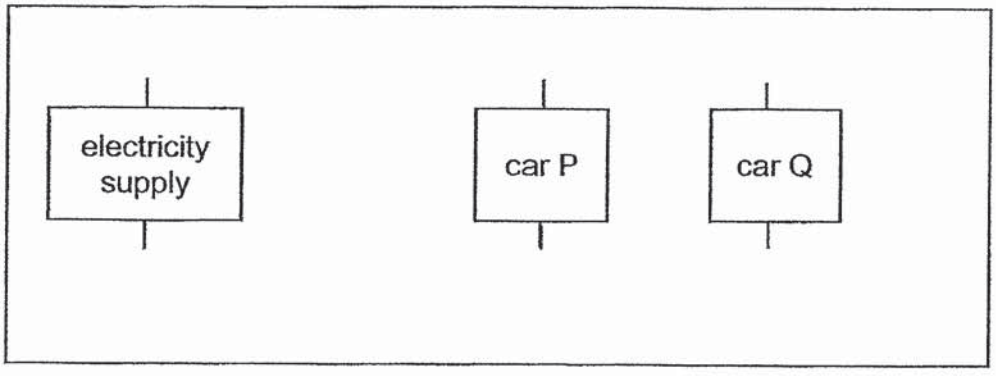
The car uses electricity to move. The contacts can move along the ceiling and the ground.

(a) State the property of the material used to construct the ceiling in order for the bumper car to work. [1]

_____

(b) Two drivers were able to drive bumper cars, P and Q, in the same driving zone at the same time when a switch was closed. When one car was not working, the other car could still work.

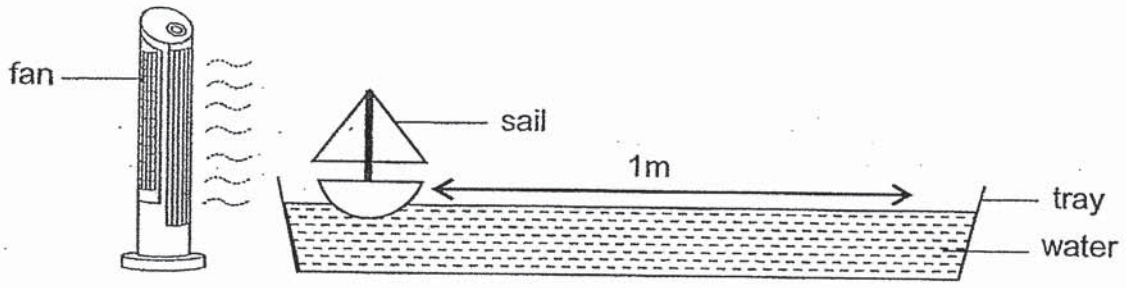
Draw wires to complete the circuit diagram. The batteries, car P and car Q have been drawn for you. [1]



(c) Mark an 'X' on your circuit diagram in (b) to indicate the position of the switch such that both cars will not be able to move when the switch is open. [1]

Score	/3

37 Lily wanted to find out how the surface area of a sail of a boat affects the speed at which the boat travels. She set up the experiment in an enclosed room as shown in the diagram. The boat remained stationary on the water before the fan was switched on.



(a) Name one force acting on the boat before the fan was switched on. [1]

_____

Lily recorded her results in the table.

Surface area of the sail of the boat (cm^2)	Time taken for the boat to travel one metre (s)
5	16
10	13
15	7
20	4

(b) What is the relationship between the surface area of the sail of the boat and the speed of the boat? [1]

_____

_____

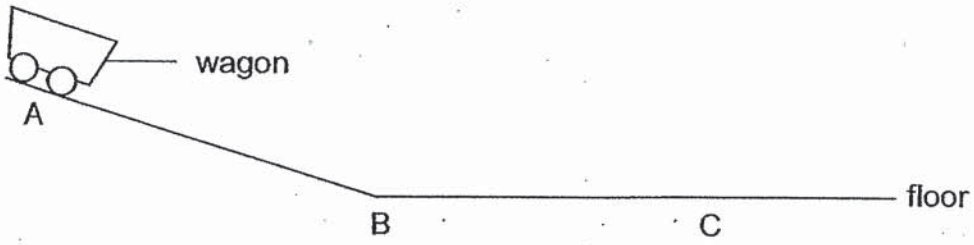
(c) Lily kept the distance between the fan and the starting position of the boat the same throughout the experiment. How does this ensure a fair test? [1]

_____

_____

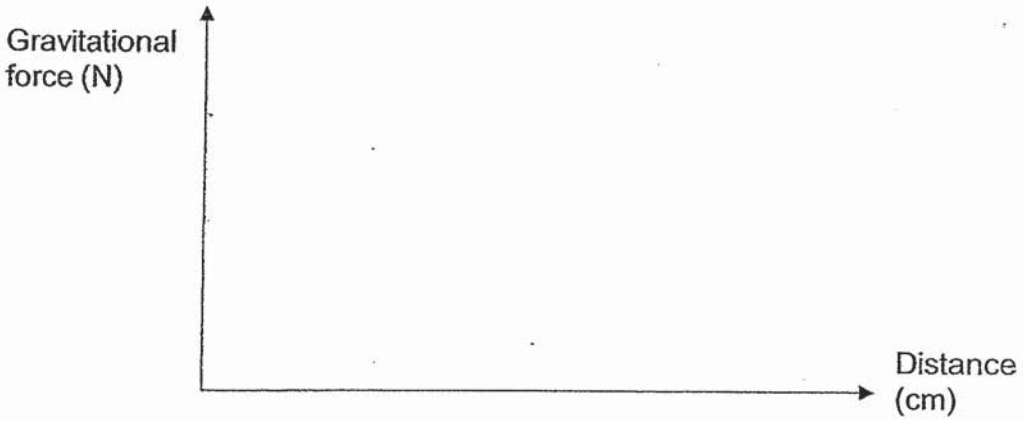
Score	/ 3

38 Sally placed a toy wagon at point A of a slope as shown in the diagram.



When Sally released the wagon, she observed that the wagon moved quickly from A to B and then slowed down from B to C.

(a) Draw a line graph to show the amount of gravitational force acting on the wagon as it moved from A to B. [1]



(b) Explain, in terms of forces, why the wagon slowed down while it moved from B to C. [1]

_____

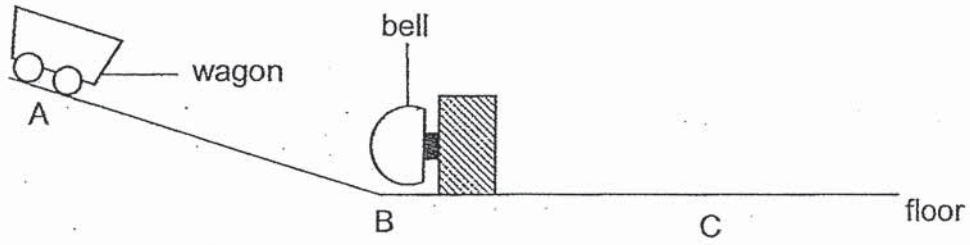
_____

Continue on page 39

Score 2

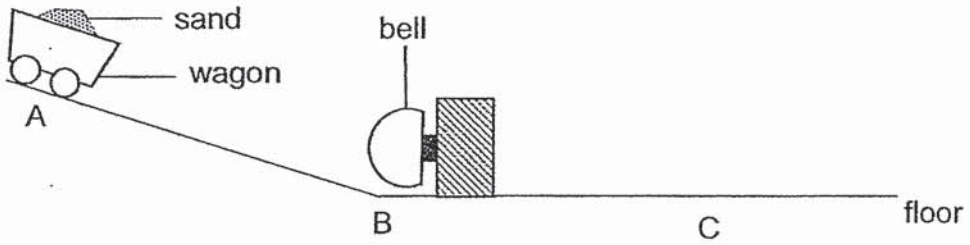
Continued from page 38

Sally fixed a bell on the floor at point B as shown in the diagram.



When she released the wagon from A, the wagon hit the bell.

She repeated the experiment using the same wagon filled with sand as shown in the diagram below. She observed that the bell sounded louder when the wagon filled with sand hit the bell.



(c) Explain why the bell sounded louder when the wagon filled with sand hit it. [2]

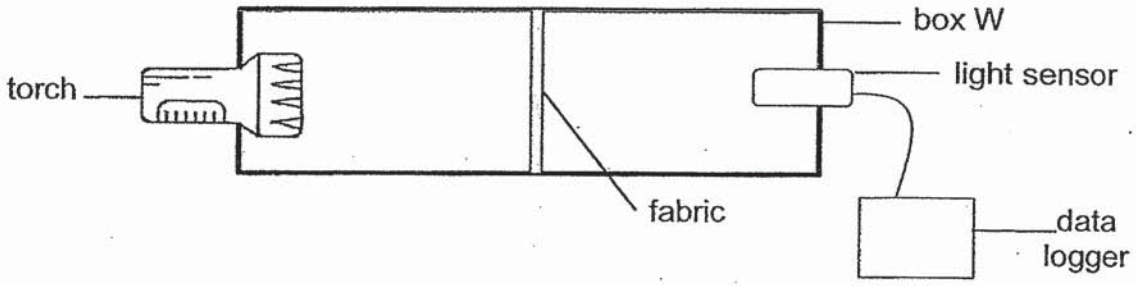
_____

_____

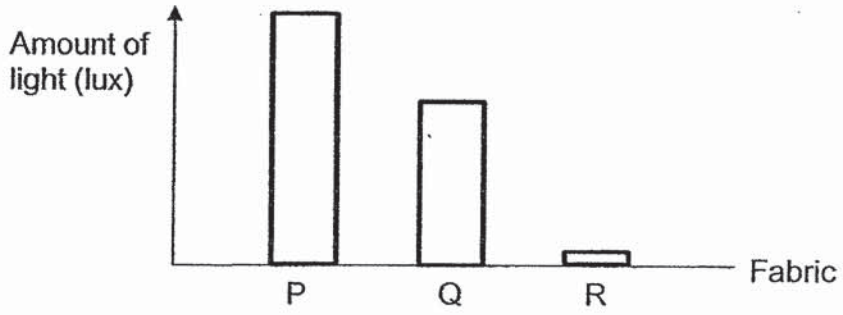
_____

Score	/2

39 A teacher measured the amount of light passing through different types of fabrics, P, Q and R, of identical size using the set-up shown in the diagram.



The graph shows the amount of light detected by the light sensor for each fabric.



The teacher wanted to use one of the fabrics to cover up the notices on the noticeboard in her classroom during examination.

(a) Which fabric, P, Q or R, is most suitable to cover up the noticeboard? Explain your answer. [2]

_____

_____

_____

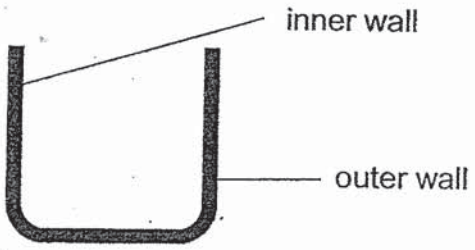
(b) The teacher used a piece of cardboard to make box W. Explain how using a cardboard box would ensure a fair test is carried out. [1]

_____

_____

Score	3

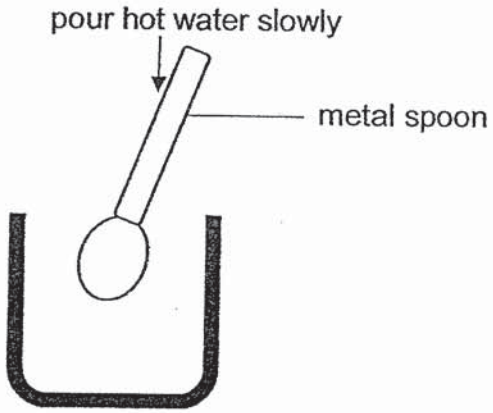
40 Raja left two identical glass containers, X and Y, with thick walls in the fridge overnight. The diagram shows glass container X.



glass container X

(a) He took out glass container X and poured hot water into it. He noticed that the glass container started to crack. Explain why the glass cracked. [1]

Next, Raja took out glass container Y from the fridge and placed a long metal spoon over the opening of the container as shown in the diagram. He poured the hot water very slowly onto the spoon and allowed it to drip very slowly from the spoon into the glass container.



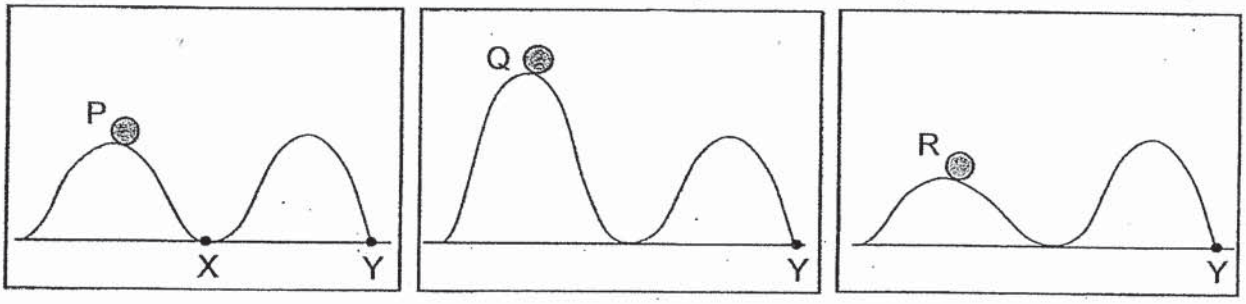
glass container Y

(b) Raja noticed that the glass container Y did not crack. Explain why. [2]

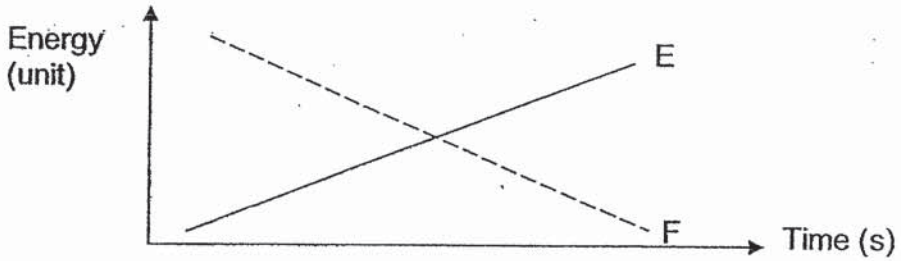
(c) Suggest another way of pouring the hot water very slowly into the glass container Y, which was taken out from the fridge and placed in a room, without it cracking. [1]

Score 4

41 The diagrams show three identical balls, P, Q and R, placed at the starting positions on three different ramps, with identical surfaces, just before they were released.



The graph shows how energy changed when ball P travelled from the starting position to point X. E and F represent different forms of energy.



(a) Fill in the blanks with the correct forms of energy. [1]

(i) E : _____ energy

(ii) F : _____ energy

(b) Only one ball travelled to point Y. Which ball, P, Q or R, reached point Y? Explain your answer. [2]

_____

_____

_____

(c) A substance, W, was coated on the ramp with the ball identified in part (b). Explain, in terms of energy, why the ball was not able to go over the second hill after substance W was coated on the ramp. [1]

_____

_____

End of paper

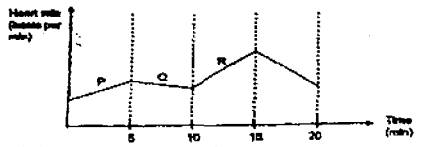
Score / 4

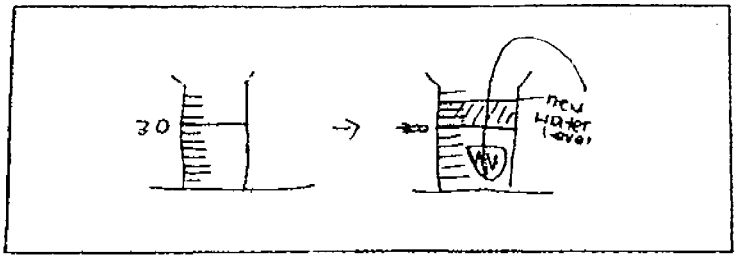
YEAR : 2022
LEVEL : PRIMARY 6
SCHOOL : RAFFLES GIRLS' PRIMARY SCHOOL
SUBJECT : SCIENCE
TERM : PRELIMINARY EXAMINATION

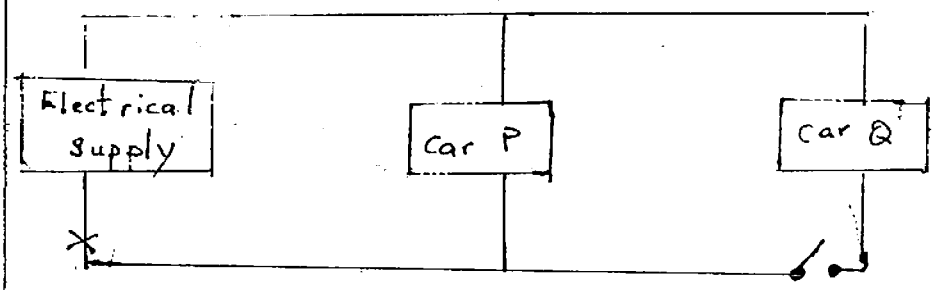
(BOOKLET A)

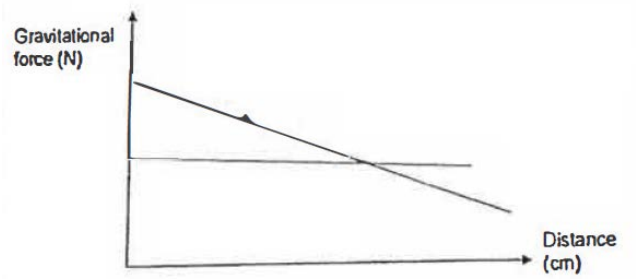
Q1	2	Q2	1	Q3	2	Q4	3	Q5	2
Q6	3	Q7	4	Q8	2	Q9	1	Q10	1
Q11	3	Q12	3	Q13	2	Q14	3	Q15	3
Q16	4	Q17	3	Q18	1	Q19	2	Q20	2
Q21	2	Q22	4	Q23	1	Q24	2	Q25	1
Q26	3	Q27	4	Q28	4				

(BOOKLET B)

Q29	a)	(ii) Living things reproduce (iii) Living things move
	b)	P. The animal has wings and has six legs
Q30	a)	Since the flower has sweet smelling scent and brightly coloured leaves, insects would be attracted to the flower and eat the nectar. While eating the nectar, the pollen grains produced by the anther brushes against the body of the insect which will go from flower to flower and brush its body against the stigma of the flowers and pollinate the flowers the insect travels to.
	b)	Fertilisation
	c)	(i) The seeds do not need an external agent of dispersal. *(ii) The seeds may drop on the ground in clusters which will cause* overcrowding which is the competition for water, mineral salts, space and nutrients
Q31	a)	
	b)	R. Evidence from the graph (usually given) Her heart rate increased the most to pump blood fastest to transport more oxygen and more digested food to the body cells.
Q32	a)	As the amount of Chemical T increases, the thickness of the egg shell decreases.
	b)	Insects feed on the plants. Which has absorbed chemical T, Chemical T is then passed to the bird that feeds on the insect.
	c)	Population of the bird will decrease. The egg shell would crack more easily as the egg shells become thinner.

<table>
<tr><td>Q33</td><td>a)</td><td><table><tr><td>Advantage 1</td><td>When the newborn chicks hatch, the termites can be a food supply for the chicks without risking their lives and avoid being eaten by the monitor lizard.</td></tr><tr><td>Advantage 2</td><td>The termite nest is brown in colour and camouflages against the brown tree trunk. Thus predators will not spot the nest easily.</td></tr></table></td></tr>
<tr><td></td><td>b)</td><td>There will always be an older bird looking after the chicks to protect them from predators.</td></tr>
<tr><td>Q34</td><td>a)</td><td> 

No. Lower the piece of stone into the measuring cylinder making sure is fully submerged, then find the difference between the total volume of water.</td></tr>
<tr><td></td><td>b)</td><td>No the cork will float on water.</td></tr>
<tr><td>Q35</td><td>a)</td><td>Both have the same amount of exposed surface of water but different surrounding temperature.</td></tr>
<tr><td></td><td>b)</td><td>It has smaller exposed surface area of water (R and S)
S and Q: It has lower surrounding temperature. Water will gain less heat from surrounding and hence it will have slowest rate of evaporation of water.</td></tr>
<tr><td>Q36</td><td>a)</td><td>Conductor of electricity.</td></tr>
<tr><td></td><td>b)
c)</td><td> 
</td></tr>
<tr><td>Q37</td><td>a)</td><td>Gravitational force</td></tr>
<tr><td></td><td>b)</td><td>As the surface area of the sail increases, the speed of the boat increases.</td></tr>
<tr><td></td><td>c)</td><td>Ensures that the same amount of force from the wind of the fan was acting on the sail.</td></tr>
</table>

Q38	a)	
	b)	**Frictional Force between the wheel of the wagon and the surface of the floor**
	c)	**The wagon filled with sand had more mass, hitting the bell with a greater force increasing to sound louder.**

Q39	a)	**R. Light cannot be reflected into our eyes. R allowed the least amount of light to pass through which means that R is the most opaque out of all the fabrics which can cover the noticeboards, least amount of light was affected by the light** sensor.
	b)	The cardboard box does not allow light to pass through which allows the experiment to be fair as the cardboard box ensures that the amount of light affected is solely due to the torch and the fabric blocking the light.
Q40	a)	Inner walls of glass gained heat faster from hot water and expanded more than the outer walls resulting in uneven expansion.
	b)	Metal is a good conductor of heat and the hot water lost heat to the metal very fast as hotter material always transfer to a colder material which allowed the hot water to cool down before entering Y.
	c)	Pour the water from a greater height.
Q41	a)	(i) E: Kinetic energy (ii) F: Gravitational Energy
	b)	**Q. It was at its highest point. Q would have most gravitational potential energy which can be converted into most kinetic energy which is converted into enough gravitational potential energy to go over the second hill.**
	c)	**More energy of the moving ball was converted to heat hence less kinetic energy of the moving ball which would be converted to less gravitational potential energy so the ball would not be able to reach the second hill.**

END