Name: _____ ( )

Class: Primary 6 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL

Primary 6

Mid-Year Assessment

SCIENCE

BOOKLET A

11 May 2021

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

28 questions
56 marks

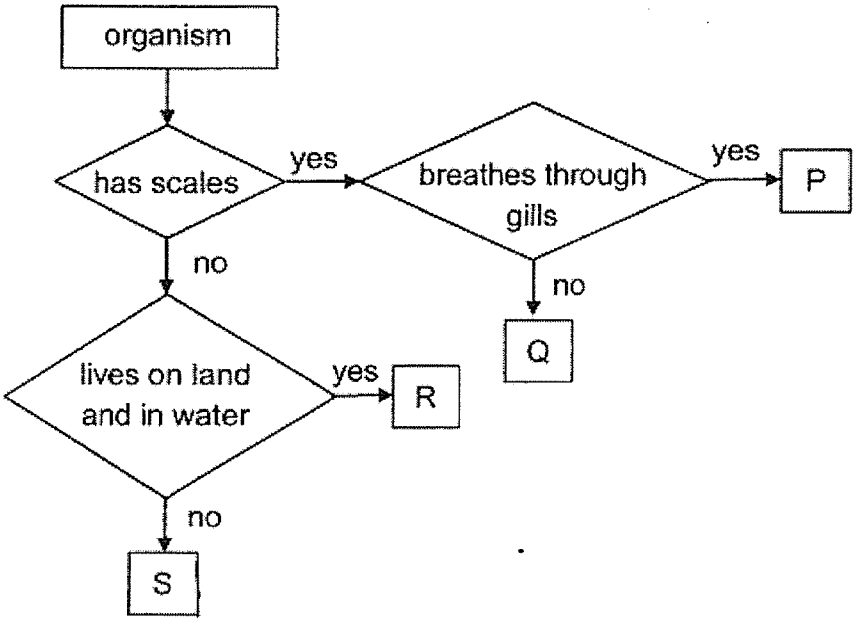
Do not open this booklet until you are told to do so.
Follow all instructions carefully.
Answer all questions.

This booklet consists of 18 printed pages.

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 provided.

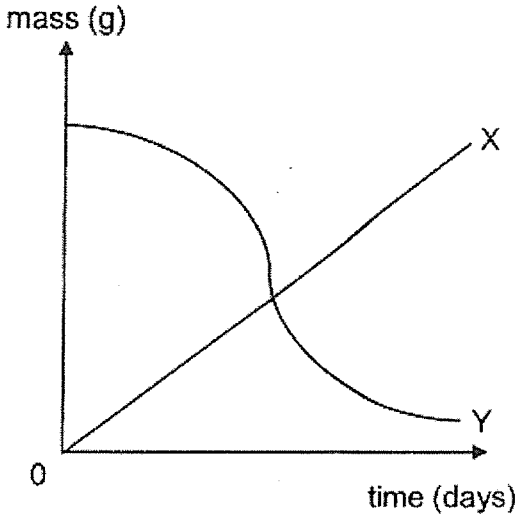
1. Study the chart below.



Which of the following letters P, Q, R or S best represents a frog and a crocodile?

	Frog	Crocodile
(1)	S	R
(2)	S	P
(3)	R	S
(4)	R	Q

2. The graph below shows the changes in the mass of different parts of a young plant during germination as it develops to become an adult plant.



Which of the following plant parts best represent graphs X and Y?

	X	Y
(1)	seed leaves	young plant
(2)	young plant	seed leaves
(3)	seed coat	roots
(4)	roots	young plant

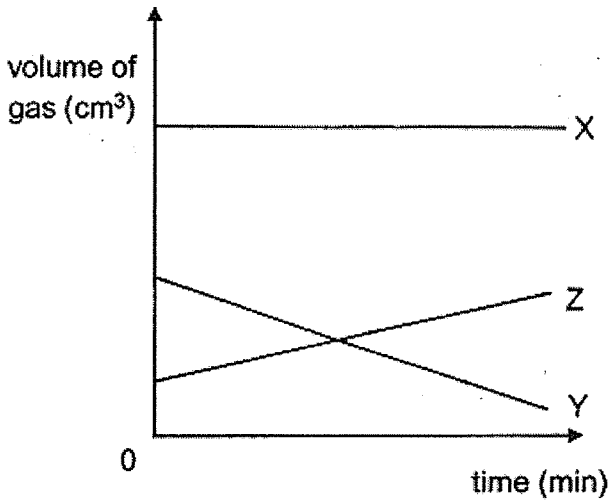
3. The characteristics of two organisms are shown below.

	Organisms	
Characteristics	**P**	**Q**
Makes its own food	yes	no
Reproduce by seeds	yes	no

Which of the following best represents organisms P and Q?

	P	Q
(1)	flowering plant	mushroom
(2)	flowering plant	fern
(3)	fern	flowering plant
(4)	fern	mushroom

4. Some people were trapped in a small lift and some adults started banging on the door and a child started crying. The graph below shows the changes in the volume of three gases X, Y and Z in the lift as time passes.



Which of the following best represents gases X, Y and Z?

	X	Y	Z
(1)	nitrogen	carbon dioxide	oxygen
(2)	nitrogen	oxygen	carbon dioxide
(3)	oxygen	carbon dioxide	nitrogen
(4)	carbon dioxide	nitrogen	oxygen

5. Four pots W, X, Y and Z were set up to investigate the conditions that affect germination. The conditions for each pot are shown in the table below.
A tick (✓) shows that the condition is present.

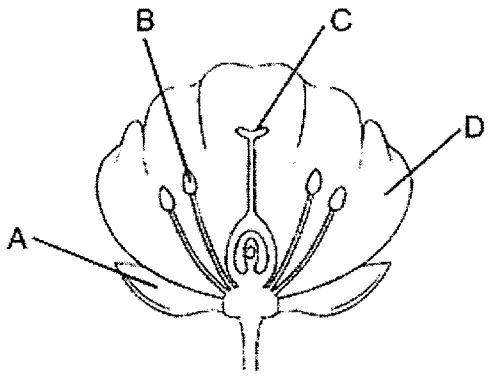
	Conditions			
Pot	**Water**	**Light**	**Number of seeds**	**Oxygen**
W	✓		10	✓
X	✓	✓	5	
Y	✓	✓	5	✓
Z			10	✓

Which of the following could be possible aims of the above set-ups?

A To find out if light is needed for germination.
B To find out if water is needed for germination.
C To find out if oxygen is needed for germination.
D To find out if the number of seeds affect germination.

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

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

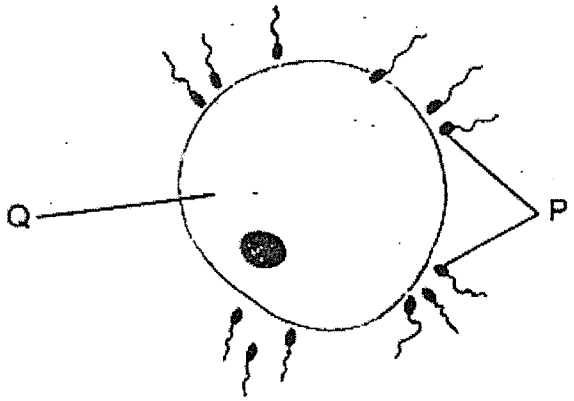


One part of the flower was removed and the flower did not develop into a fruit.

Which part of the flower A, B, C or D was removed?

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

7. The diagram below shows cells P and Q during process H in the reproduction of humans.



Which of the following statements are true?

A Process H is always successful.
B More than one cell P can enter cell Q.
C Cell P is produced in the male reproduction system.
D Process H occurs in the female reproductive system.

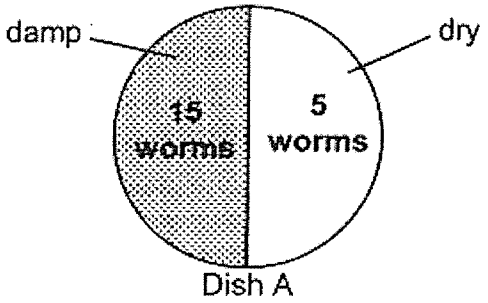
(1) A and B only
(2) A and D only
(3) B and C only
(4) C and D only

8. After harvesting their crops, farmers may leave behind some dead plants in the fields. How does leaving behind these dead plants benefit the farmers?

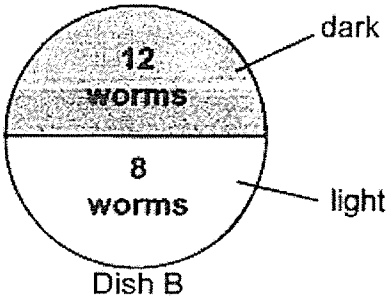
(1) To allow new plants to grow.
(2) To provide food for the animals in the soil.
(3) To provide a new habitat for animals in the fields.
(4) To make the soil fertile when the dead plants decompose.

9. Alvin carried out an experiment to study the preferred environment of worms. Twenty worms were put in the middle of dish A. After ten minutes, the number of worms in each section of dish A was counted.

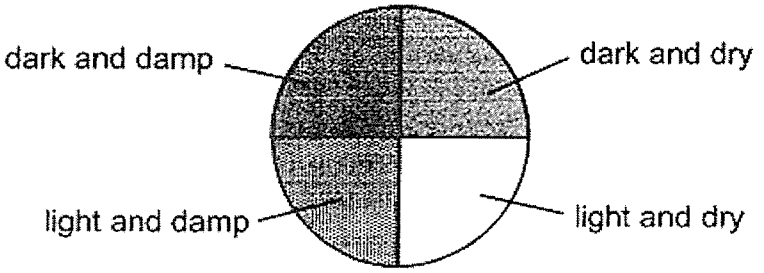
The experiment was repeated with dishes B and C using the same number of similar worms.



Dish A



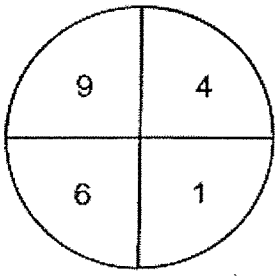
Dish B



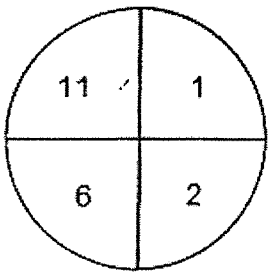
Dish C

Which of the following shows the likely number of worms in each section in dish C?

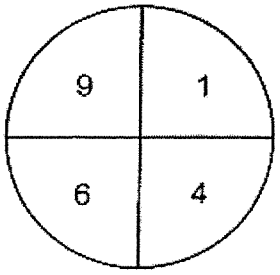
(1)



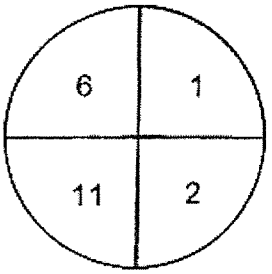
(2)



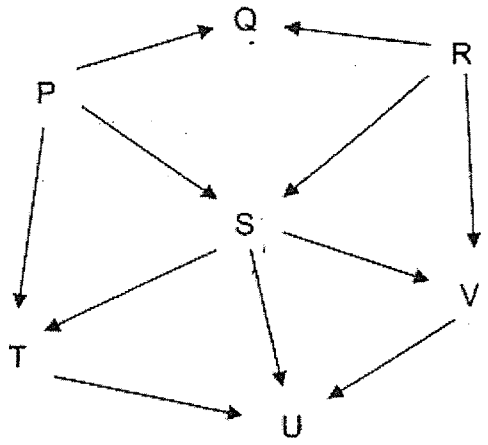
(3)



(4)



10. Study the food web below.

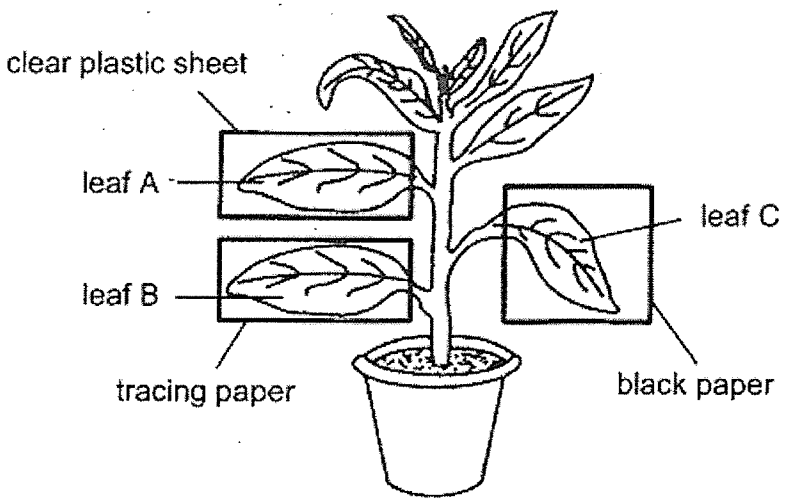


Which of the following statements are true of the organisms in the food web?

A S and Q are herbivores.
B T and U are carnivores.
C P and R are food producers.
D S and V are both prey and predators.

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

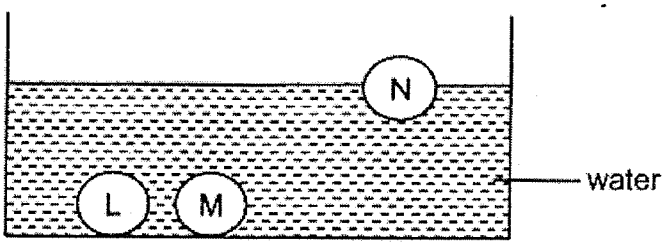
11. Xiaoling wanted to conduct an experiment on photosynthesis. She set up her experiment in the garden as shown in the diagram below.



After a few hours, Xiaoling removed the leaves and conducted a starch test on the leaves. She found out that leaf A contained the most amount of starch as compared to leaves B and C.
What can she conclude from the above experiment?

(1) Light can affect the production of starch.
(2) Light can pass through different types of materials.
(3) The amount of light affects the rate of photosynthesis.
(4) The presence of starch shows that photosynthesis has occurred.

12. Xiao Ming placed three solids made of materials L, M and N into a container of water. He made some observations as shown below.



He made three statements:

A L and M have the same mass.

B L and M are made of the same material.

C M and N are made of different materials.

Which statement(s) can be concluded from his observation?

(1) C only
(2) A and B only
(3) B and C only
(4) None of the above statements

13. The table below shows some properties of four materials A, B, C and D.

Materials	Property		
	Transparent	Good conductor of heat	Magnetic material
A	×	✓	×
B	✓	×	✓
C	✓	×	×
D	×	✓	✓

Key
✓ : yes
× : no

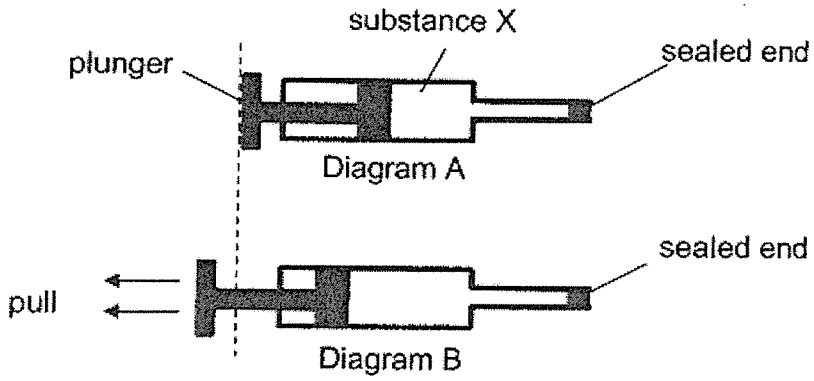
Which material A, B, C or D best represents copper?

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

14. Which of the following statements are true for all magnets?

(1) A magnet loses its magnetism once it is broken into two.
(2) The larger the size of a magnet, the stronger its magnetism.
(3) When two metal bars attract each other, they are definitely magnets.
(4) A magnet with a greater magnetism can attract an iron pin from a further distance.

15. Abdullah carried out an experiment with a syringe containing substance X. The end of the syringe was sealed. He pulled the plunger of the syringe and it moved to the position as shown in diagram B.



Based on his observation, what conclusion can he draw about substance X?

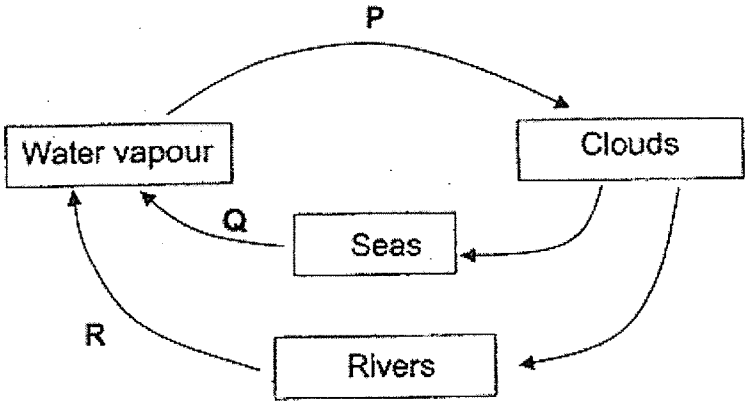
(1) Substance X is a gas and it can be compressed.
(2) Substance X is a solid as it cannot be compressed.
(3) Substance X is a matter as it has mass and occupies space.
(4) Substance X is a gas and it does not have a definite volume.

16. Which of the following are examples of matter?

A air
B light
C shadow
D water vapour
E carbon dioxide

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

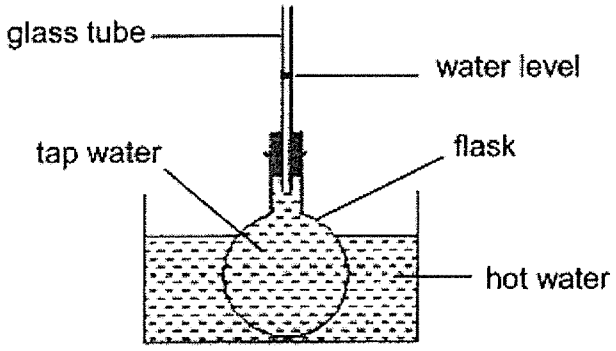
17. The diagram below shows part of the water cycle.



Which of the following is correct?

	Evaporation occurs at	Condensation occurs at	Heat loss occurs at
(1)	Q	R	Q and R
(2)	Q and P	R	R
(3)	R	P and Q	Q
(4)	Q and R	P	P

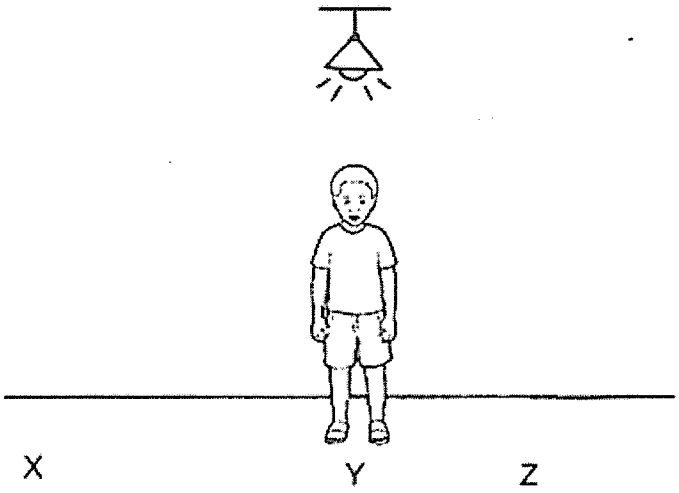
18. Look at the set up below. When a flask filled with tap water is lowered into a basin of hot water, it is observed that the water level in the glass tube falls slightly at first and then starts to rise steadily.



Why does the water level in the glass tube fall slightly when the flask is lowered into the basin of hot water?

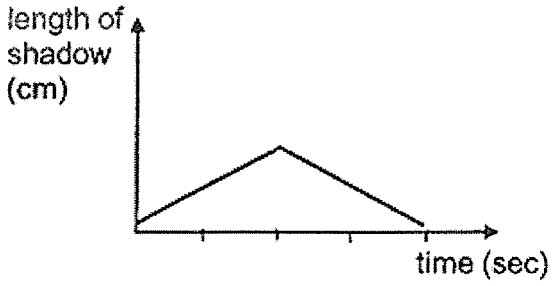
(1) The hot water loses heat to the tap water and contracts.
(2) The flask expands before the tap water in the flask expands.
(3) The tap water in the flask gains heat from the hot water and expands.
(4) The tap water in the flask contracts slightly as the flask gains heat from the hot water.

19. A boy stood under a lamp as shown.

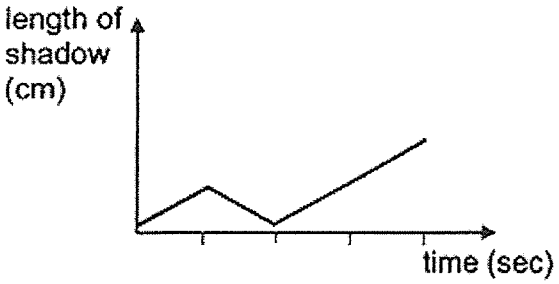


He walked from position Y to position Z and then to position X in a straight line.
Which graph below shows the length of his shadow changed during this time?

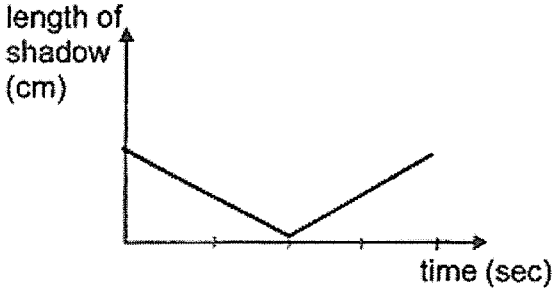
(1)



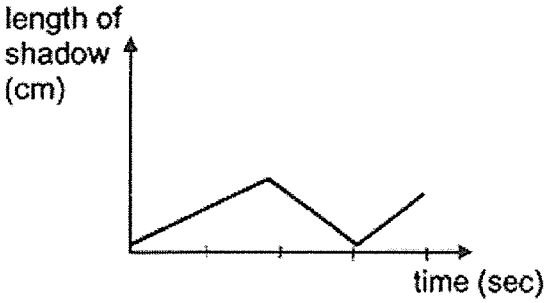
(2)



(3)

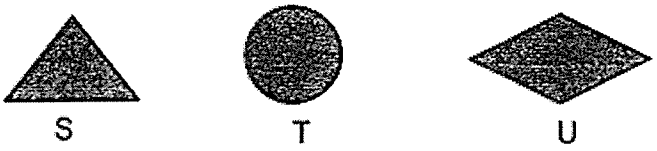


(4)



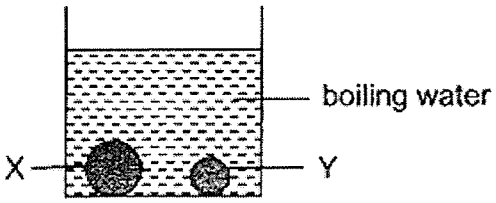
20. Two identical opaque cones are glued together at the base to form the structure below.

Which of the following shadows can most possibly be formed by the structure?



(1) U only
(2) S and T only
(3) T and U only
(4) S, T and U

21. Two copper balls X and Y, of different masses were put into a beaker of boiling water at the same time.

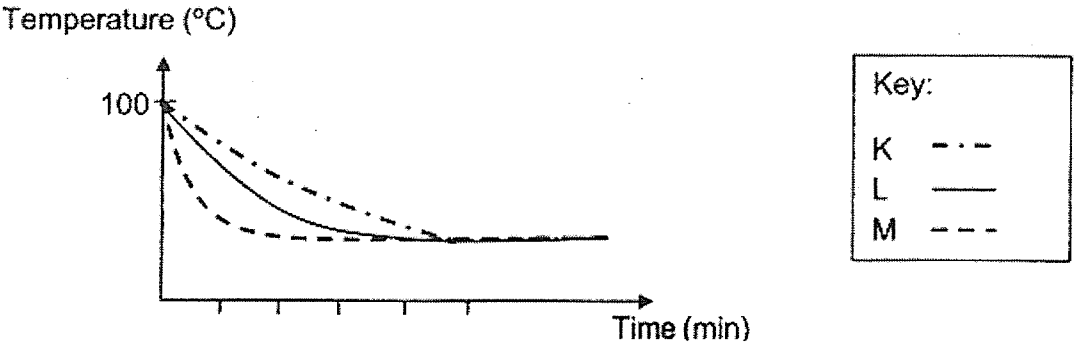


Which of the following statements about the copper balls are correct after five minutes?

A X has more heat energy than Y.
B X has a higher temperature than Y.
C X and Y have the same temperature.
D X and Y have the same amount of heat energy.

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

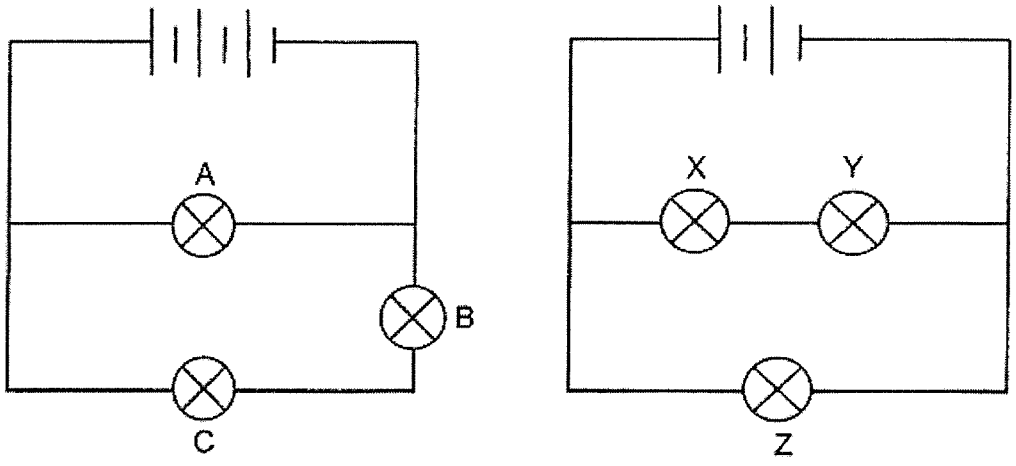
22. Three containers K, L and M were made of different materials. They were filled with equal amount of boiling water. The time taken for the water in each container to cool down was plotted on the graph as shown below.



Based on the above graph, identify the possible material of each container.

	Container K	Container L	Container M
(1)	styrofoam	ceramic	aluminium
(2)	aluminium	ceramic	styrofoam
(3)	ceramic	styrofoam	aluminium
(4)	aluminium	styrofoam	ceramic

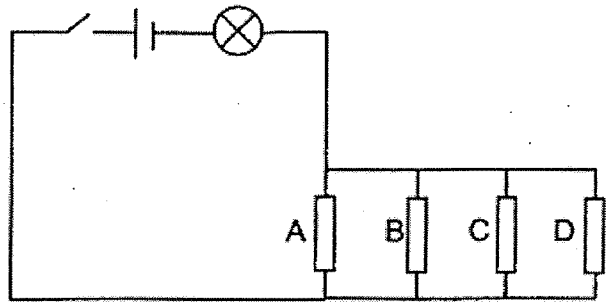
23. Identical batteries and bulbs are used to set up the two electrical circuits shown below.



Which of the following correctly describes the brightness of the bulbs?

	Brightest bulb(s)	Dimmest bulb(s)
(1)	A	X, Y
(2)	A	Z
(3)	A, B, C	X, Y, Z
(4)	B, C	Z

24. Caleb wanted to find out whether four rods A, B, C and D were electrical conductors or insulators. He set up the electrical circuit as shown below.



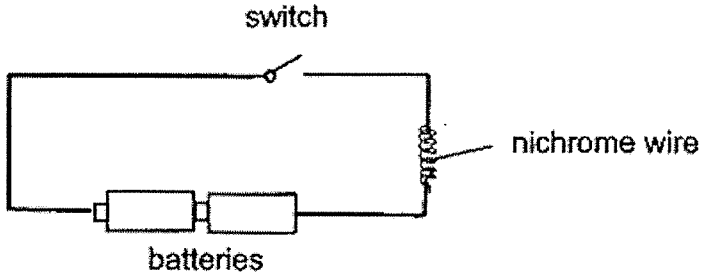
The table shows what happened when the switch was closed and certain rod(s) was/were removed.

Rod(s) removed from electrical circuit	Did the bulb light up?
B	yes
C and D	yes
A, B and C	no
B, C and D	no

Which of the following correctly concludes the experiment?

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

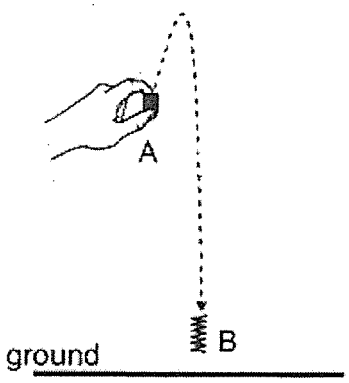
25. The diagram below shows an electric circuit with a coil of nichrome wire and a switch.



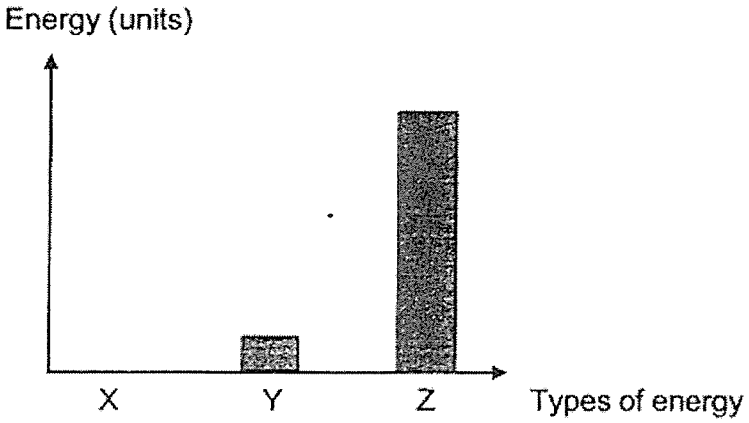
When the switch was closed, the nichrome wire turned hot and started to glow. Which one of the following shows the correct energy conversion?

(1) Kinetic energy → Electrical energy → Heat energy → Light energy
(2) Electrical energy → Potential energy → Heat energy → Light energy
(3) Potential energy → Electrical energy → Heat energy → Light energy
(4) Potential energy → Kinetic energy → Electrical energy → Heat energy

26. A spring is compressed and released at A. It moves to B as shown.



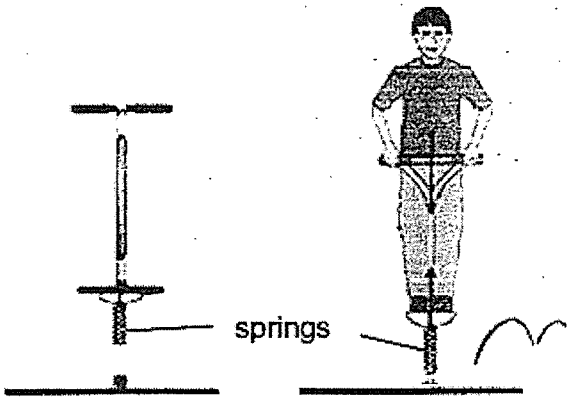
The graph shows the amount of different types of energy of the spring at B.



Which one of the following correctly represents the type of energy at B.

	X	Y	Z
(1)	Kinetic energy	Gravitational potential energy	Elastic potential energy
(2)	Elastic potential energy	Kinetic energy	Gravitational potential energy
(3)	Gravitational potential energy	Elastic potential energy	Kinetic energy
(4)	Elastic potential energy	Gravitational potential energy	Kinetic energy

27. A boy is riding on his pogo stick as shown.



A pogo stick

Which of the following forces enable the boy to move over a distance?

A Magnetic force
B Frictional force
C Gravitational force
D Elastic spring force

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

28. The following statements about forces are given by four pupils.

Aziz A force is a push or a pull.
Ben A force cannot be seen and felt.
Dollah A force can change the shape of an object.
Cathy A force cannot change the direction of a moving object.

Who made a correct statement?

(1) Aziz and Ben only
(2) Aziz and Dollah only
(3) Ben, Cathy and Dollah only
(4) Aziz, Cathy and Dollah only

~End of Booklet A~

Name : _____ ( )

Class : Primary 6 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL

Primary 6

Mid-Year Assessment

SCIENCE

BOOKLET B

11 May 2021

Booklet A	56
Booklet B	44
Total	100

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

12 questions
44 marks

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

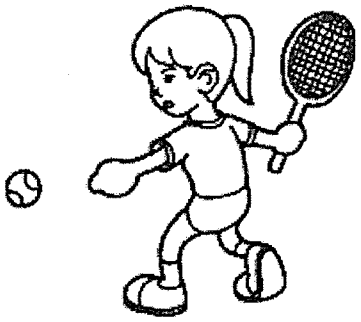
This paper consists of 13 printed pages.

_____

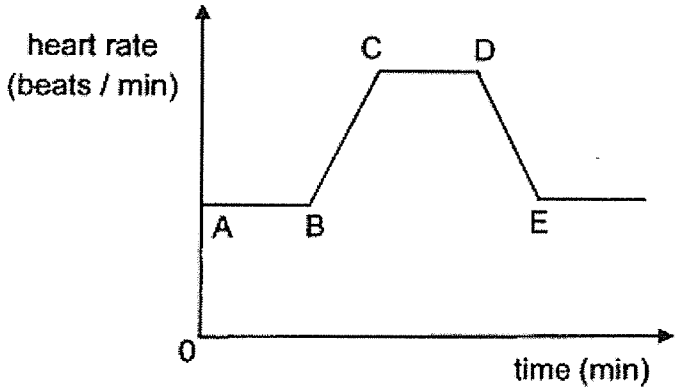
Parent's Signature/Date

Section B (44 marks)
For questions 29 to 40, write your answers in this booklet.
The number of marks available is shown in the brackets at the end of each question or part question.

29. Sally was taking part in an activity as shown in the diagram below.



Her heart rate was measured and recorded in the graph below.



(a) At which point A, B, C, D or E did she start taking part in the above activity? [1]

_____

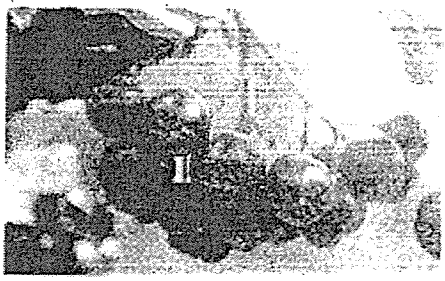
(b) She observed that her heart rate increased during the activity. After 30 minutes, Sally stopped this activity and took a rest. While she was resting, she observed that her heart rate started to decrease. Explain this observation. [2]

_____

_____

_____

30. The diagram below shows a bunch of berries. These berries contain seeds.



(a) Why do plants produce seeds? [1]

(b) Animals such as birds help to disperse the seeds in these berries. Describe how these birds help in the dispersal process. [2]

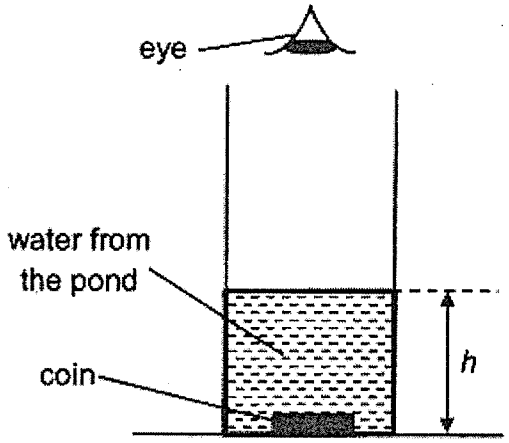
Shane wanted to find out if the colour of the berries affect the dispersal of their seeds. He hung different coloured beads on the same green plants and asked his friend to look for the beads for 5 minutes. The table below shows the results.

Colour of beads	Number of beads found
Black	11
Orange	9
Green	3
Red	18

(c) Which colour was the easiest to spot on the plants? [1]

(d) What can Shane do to make the results of his experiment more reliable? [1]

31. Nassim took water samples from different ponds P, Q, R and S.
A coin was placed at the bottom of a container and water taken from pond P was poured until the coin could no longer be seen as shown in the set-up below.
The height *h* of the water was recorded.



The experiment was repeated with water taken from ponds Q, R and S. The results are shown in the table below.

Pond	*h* (cm)
P	15
Q	5
R	30
S	18

(a) At which pond P, Q, R or S would there be the least number of plants growing in it? Explain your answer. [2]

Nassim recorded the number of organisms found at pond R as shown in the table below.

Organisms	Number of organism
butterfly	2
caterpillar	3
catfish	2
frog	2
tadpole	3
water hyacinth	4
water lily	2

(b) He concluded that there are five populations of consumers. Do you agree? Explain your answer. [2]

32. The table below shows cells A, B and C and their cell parts. A tick (✓) shows that the cell part is present.

Cell	Cell wall	Cell membrane	Chloroplast
A		✓	
B	✓	✓	✓
C	✓	✓	

Based on the table above, which cell A, B or C is a root-hair cell?
Give two reasons to support your choice. [2]

Cell: _____

Reason 1: _____

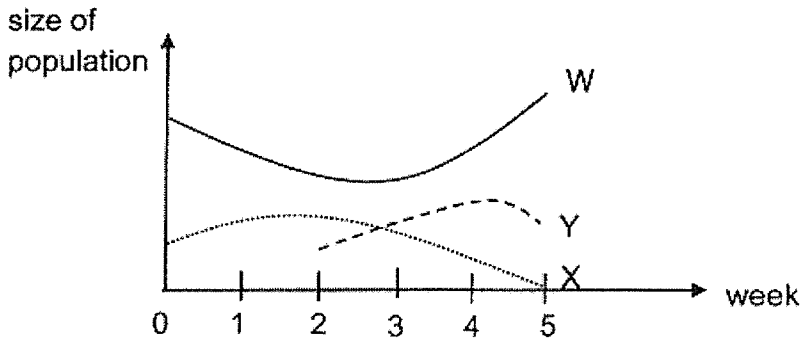
_____

Reason 2: _____

_____

33. Samy conducted an experiment to study the food relationships between animals X, Y and W. Animal W feeds on leaves only.
At the start, Samy placed some animals W and X in a tank with some leaves. He counted the number of animals at the end of each week. After two weeks, he added animals Y.

His results are shown below.

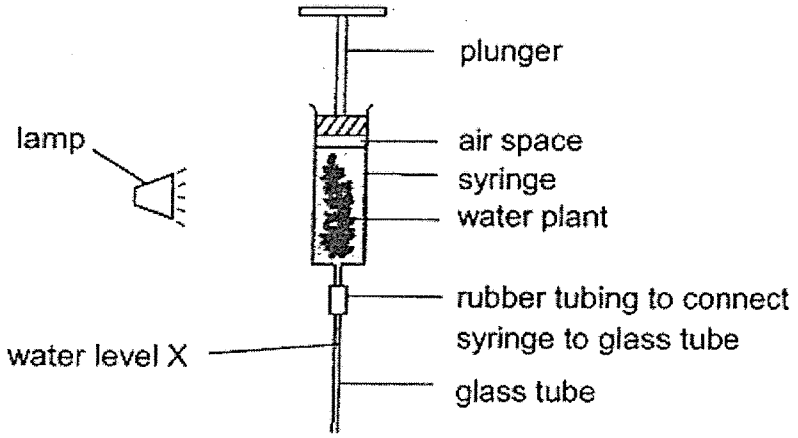


(a) What is the food relationship between animals W and X? [1]

(b) The population of animal Y decreased towards the end of week 4. Explain why. [2]

(c) What is a food chain? [1]

34. Davi conducted an experiment with the set up below. She switched on the lamp and observed that the water level X in the glass tube moved down after some time. The plunger remained at the same place.

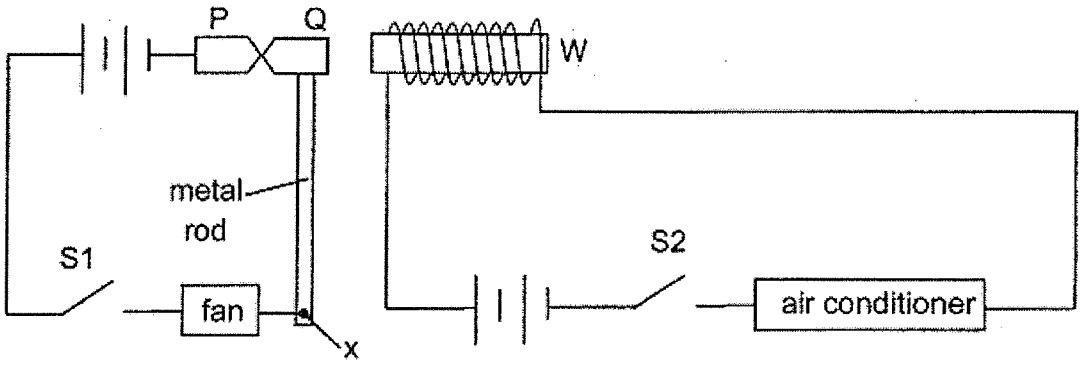


(a) Explain why the water level at X moved down the glass tube after some time. [2]

(b) When the lamp was moved nearer to the syringe, would the water level in the glass tube moved down faster, slower or at the same rate as before? [1]

(c) Explain your answer in (b). [1]

35. An electrical system for a fan and an air conditioner is shown below. The system prevents both the fan and the air conditioner from being turned on at the same time.
W is an iron bar placed inside a coil of wire.
P and Q are two iron pins in contact with each other. Pin P is fixed.
Pin Q is attached to a metal rod and can rotate about point X.



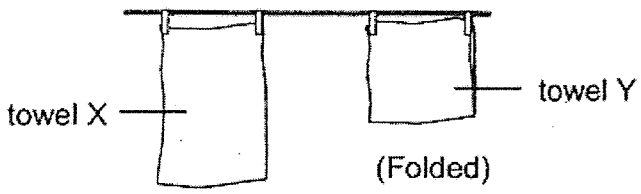
When switch S1 was closed, the fan turned on.

(a) What would happen to pin Q when switch S2 was closed? Explain your answer. [1]

(b) Give a reason why the fan was turned off when switch S2 was closed. [1]

(c) Q was replaced with a pin made of another material. The fan was switched on when switch S1 was closed but the fan did not turn off when switch S2 was closed. Suggest a material of Q. Explain your answer. [2]

36. Kai Xin poured the same amount of water on two identical towels X and Y and hung them out to dry in the same place as shown below.



(a) A few hours later, he found that towel X dry faster than towel Y. Explain why. [2]

_____

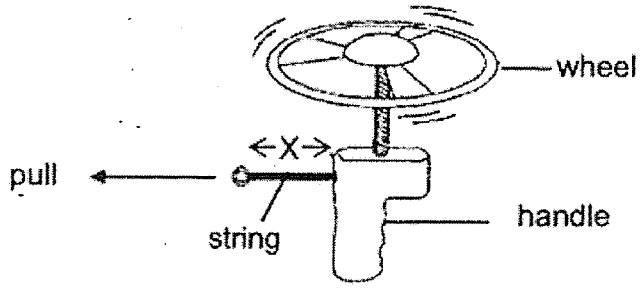
_____

(b) State two other factors that would cause the towels to dry faster. [1]

(i) _____

(ii) _____

37. The diagram below shows a toy. When the string is pulled, it will cause the wheel to spin and fly off the handle.



Jack wanted to find out how the number of spins of the wheel changes when the string is pulled to different lengths.

The table shows the results of his experiment.

Length of the string when pulled (cm)	Number of times the wheel spins
5	3
10	6
15	10

(a) Jack used the same wheel throughout his experiment. What was the reason? [2]

_____

_____

_____

(b) What is the relationship between the length of the string when pulled and the number of times the wheel spins? [1]

_____

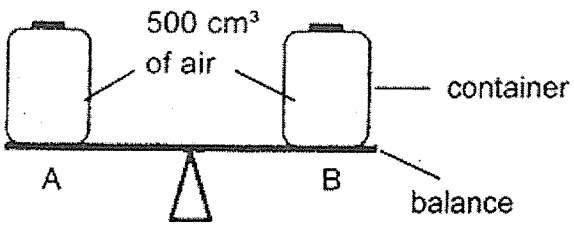
_____

(c) State two forces that were exerted on the wheel as it spun in the air. [2]

(i) _____

(ii) _____

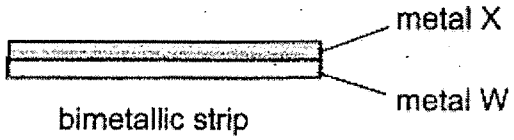
38. Shaun placed two identical containers A and B on a beam balance as shown in the diagram.



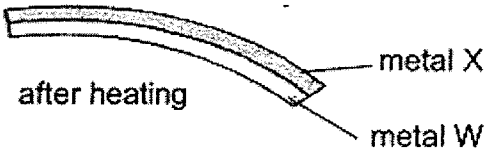
(a) What would he observe when he removed 200 cm³ of air from container A? [1]

(b) What would be the volume of air in container A after he had removed 200 cm³ of air? Explain your answer. [2]

39. A bimetallic strip consists of two metals attached firmly to each other. In the bimetallic strip below, metal X expands at a faster rate than metal W when it is heated.

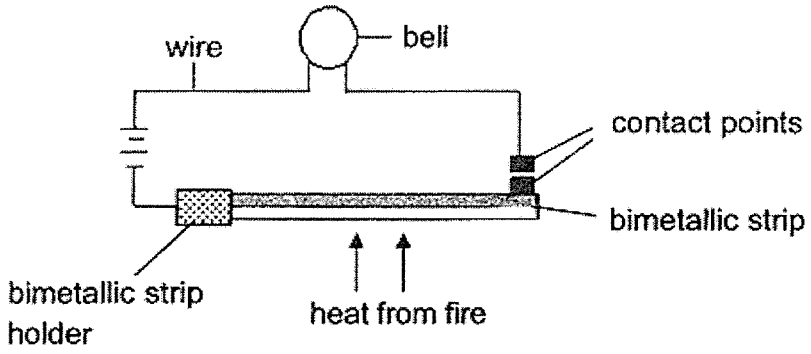


After heating, John observed that the strip bent as shown in the diagram below.



(a) Give a reason why it bent as shown. [1]

John wanted to use the same type of bimetallic strip to construct a fire alarm system for his science project. His set-up is shown below.

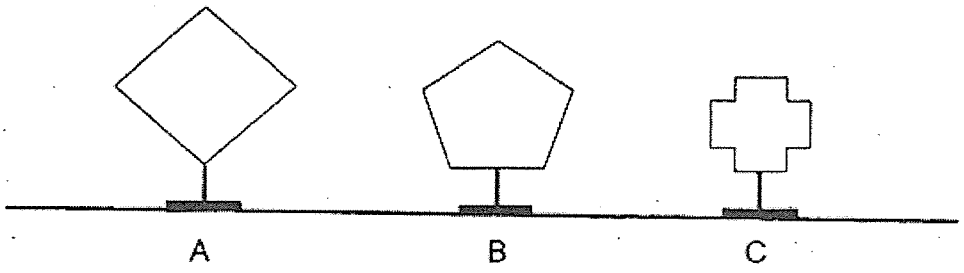


When the bimetallic strip gets heated up by the fire, it will bend. The two contact points will touch and the circuit will be closed. This will cause the bell to ring. However, when he tried out his set-up, the bell did not ring even though the bell was in working condition.

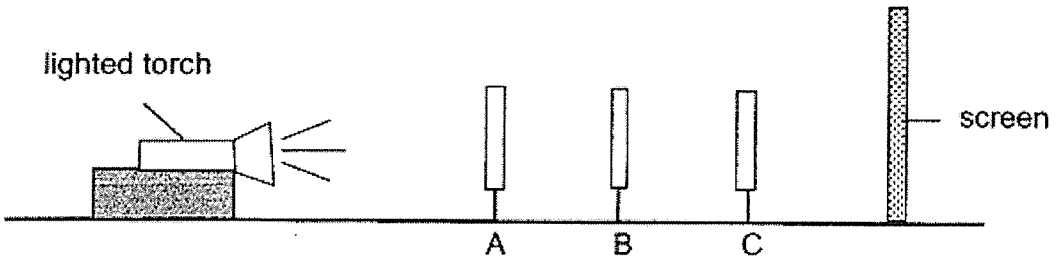
(b) Explain why the bell did not ring. [2]

(c) What is the most important property John must consider when he choose the material for making the contact points? [1]

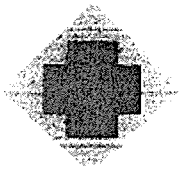
40. Monica used 3 different types of materials, A, B and C to make the following cut-outs.

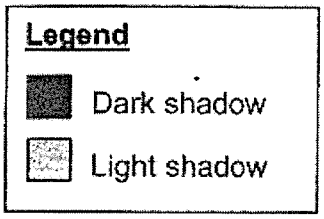


She then placed the cut-outs between a screen and a lighted torch as shown in the diagram below.



The diagram below shows the shadow which was cast on the screen.





(a) State the property of the materials that A, B and C are made of to cast the shadow as seen above. [1]

(i) Material A : _____

(ii) Material B : _____

(iii) Material C : _____

(b) State one property of light that causes the formation of shadows. [1]

_____

_____

(c) If the torch is changed to one that gives out brighter light, how will it affect the size of the shadow formed? [1]

_____

~ End of paper ~

CHIJ ST. NICHOLAS GIRLS' SCHOOL (PRIMARY SECTION)

2021 MID-YEAR ASSESSMENT (MYA)

PRIMARY 6 SCIENCE

SUGGESTED ANSWERS

BOOKLET A [2 marks each]					
Question	**Answer**	**Question**	**Answer**	**Question**	**Answer**
1.	4	11.	3	21.	2
2.	2	12.	1	22.	1
3.	1	13.	1	23.	1
4.	2	14.	4	24.	2
5.	3	15.	4	25.	3
6.	3	16.	2	26.	4
7.	4	17.	4	27.	4
8.	4	18.	2	28.	2
9.	1	19.	2		
10.	1	20.	3		

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MARKING PRINCIPLES: CARI – COMPLETENESS, ACCURACY, RELEVANCE, INTERPRETATION

BOOKLET B			
Question	**Suggested Answers**	**Marks**	**Remark(s)**
29. (a)	***KEY CONCEPT(S) / SKILL(S) ASSESSED:*** *Show an understanding of how exercise affects the circulatory system* ***ACCEPTABLE RESPONSE:*** Point B.	 1	***DO NOT ACCEPT:*** •
(b)	Sally needs **less energy** [½] so her heart pumps slower to transport **less oxygen** [½] and **less digested food** [½] to her muscles for **a lower rate of respiration [½].** ***OTHER ACCEPTABLE RESPONSE(S):*** Sally needs less/ not as much energy [½] so her heart pumps slower to transport less blood containing oxygen [½] and digested food [½] to her muscles for a lower rate of respiration [½].	2	***DO NOT ACCEPT:*** • *does not need anymore energy* • *pump slower to transport oxygen and digested food << comparison for amount of oxygen and digested food not mentioned.>>*

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BOOKLET B			
Question	**Suggested Answers**	**Marks**	**Remark(s)**

30. (a)	Seeds develop into a **new plant to complete its life cycle/ and mature into adult plants**. **OR** Plants produce seeds to ensure the survival / continuity of its own kind.	1	***DO NOT ACCEPT:*** • *To prevent plant from becoming extinct*
(b)	Birds **eat the fruit together with the seeds** (1/2) and **pass out the undigested seeds** (1/2) as waste when they **move to another location (1)**. ***OTHER ACCEPTABLE RESPONSE(S):*** *Any answers that include the idea of movement/ disperse seed further away from parent plant (1)*	2	• *spit seeds out [0]/ rule 4 if pupils gets full mark*
(c)	***ACCEPTABLE RESPONSE:*** Red	1	***DO NOT ACCEPT:***
(d)	***ACCEPTABLE RESPONSE:*** He should **repeat the experiment** [½] and take the **average of the results.** [½]		

BOOKLET B			
Question	**Suggested Answers**	**Marks**	**Remark(s)**
31.	***KEY CONCEPT(S) / SKILL(S) ASSESSED:*** Understand the relationship between amount of light and growth of plants. Define population and apply the concept in analysis of data provided.		***DO NOT ACCEPT:*** • take note: many pupils didnt write make less food, or less photosynthesis..
(a)	Pond Q. The **height h was the lowest** [½], showing that water was **the murkiest**[½]. This would allow plants growing at pond Q to receive **least light** [½] for **slowest rate of photosynthesis** [½]. ***OTHER ACCEPTABLE RESPONSE(S):*** -murkiest (least clear, very dark, darkest, most polluted, dirtiest)	2	

(b)			
	ACCEPTABLE RESPONSE: No. The **young and its adult form one population** / **water lily and water hyacinth are producers** and not consumers [1] so there are **three** populations of consumers [1]. *OTHER ACCEPTABLE RESPONSE(S):* No. Butterfly and caterpillar form one population. [½] Frog and tadpole form one population. [½] , Catfish forms 1 population, so there are **three** populations of consumers. [1]	2	*DO NOT ACCEPT:* •

BOOKLET B			
Question	**Suggested Answers**	**Marks**	**Remark(s)**
32.	*KEY CONCEPT(S) / SKILL(S) ASSESSED:* Identify parts of a plant cell and their functions. *ACCEPTABLE RESPONSE:* Cell C. **Reason 1:** It has a cell wall. **Reason 2:** It does not have chloroplast.	2	*DO NOT ACCEPT:* • *Note: many girls chose cell A as their answer.*

	Note: **Even if wrong cell given, marks still awarded for correct reason 1 or 2. (unless pupils wrote <u>root-hair cell IS AN ANIMAL CELL) - 0 mark</u>		

BOOKLET B			
Question	**Suggested Answers**	**Marks**	**Remark(s)**
33.	***KEY CONCEPT(S) / SKILL(S) ASSESSED:*** **The Web of Life** • Food chains • Food Webs • Decomposers		

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(a)	*ACCEPTABLE RESPONSE:* Animal X feed on animal W. or Animal W is the prey of animal X. or Animal X is the predator of animal W. ***OTHER ACCEPTABLE RESPONSE(S):*** • W is a prey and X is a predator.	1	*DO NOT ACCEPT:* • They are prey-predator relationships. • W and X are prey and predator.
(b)	*ACCEPTABLE RESPONSE:* Animal Y feeds on animal X causing the population of animal X to decrease [1] after week 2. There is a lack of food for animal Y thus the population of animal Y decreased [1].	2	*DO NOT ACCEPT:*
(c)	*ACCEPTABLE RESPONSE:* A food chain shows the (food) relationships between organisms in a community. **OR** It shows how the energy is transferred from one organism to another in a community.	1	*DO NOT ACCEPT:* • Food relationship between **animals**. • Food relationship **of** organisms No mention of the **producer**.

BOOKLET B			
Question	**Suggested Answers**	**Marks**	**Remark(s)**

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34. (a) ECF to part C if pupil wrote about CO_2 instead.	***KEY CONCEPT(S) / SKILL(S) ASSESSED:*** **Energy & Photosynthesis** • Energy & the need for it • Photosynthesis ***ACCEPTABLE RESPONSE:*** The plant gave off **oxygen when it photosynthesized.** [1] When **more oxygen** was collected in the air space, **it pushed the water level** in the tube down. [1]	2	***DO NOT ACCEPT:*** Water is taken in by the plant during photosynthesis... (Reason: If water is taken in, the water level X should rise and not fall. Totally wrong answer. No ECF to part C)
(b)	The water level in the glass tube would **move down faster**.	1	***DO NOT ACCEPT:***
(c)	The **rate of photosynthesis would increase** when the lamp was moved nearer the syringe/plant [½] Thus **oxygen would be produced faster**. [½] causing the water to move down the tube faster.	1	***DO NOT ACCEPT:*** Water in taken in faster ....

BOOKLET B			
Question	**Suggested Answers**	**Marks**	**Remark(s)**

35.	*KEY CONCEPT(S) / SKILL(S) ASSESSED:* Show an understanding of electromagnets. List magnetic materials and electrical conductors.		***DO NOT ACCEPT:*** • TYPE HERE *<< TYPE REASON FOR NOT ACCEPTING. >>* •
(a)	Electrical current will flow through the circuit and **W will become an electromagnet / magnetized** [½] and **attract Q**. [½]	1	
(b)	There was an **open circuit** [½] so **electric current cannot flow through** [½].	1	***DO NOT ACCEPT:*** •
(c)	**Aluminum, gold, copper, silver, bronze, etc.** (½) (Must mention specific type) It is a **conductor of electricity** (½) so electric current can flow through it but **not a magnetic material** (1) so it cannot be attracted by W.	2	***DO NOT ACCEPT:*** • Steel, iron, nickel, cobalt *<< they are magnetic materials and will get attracted to W. >>* • Plastic, wood, water (0) • Metal (0) - which type? • Magnet (0) - which type?

BOOKLET B			
Question	**Suggested Answers**	**Marks**	**Remark(s)**
36. (a)	***KEY CONCEPT(S) / SKILL(S) ASSESSED:*** **Water** • Expansion/contraction • Evaporation • Surface area and heat Because towel X has a **larger exposed surface area / larger surface area in contact with surrounding air** [1] so **the water in the towel gained heat faster FROM THE (WARMER) SURROUNDINGS** [1] Sun to evaporate faster.	2	• **First marking point:** "...has a larger surface area..." (0) - which type? also, both towels are identical - so should have the same surface area. • **Second marking point:** "gain more heat" (0) - **missing direction of heat flow** (gain heat from where?)
(b)	- *Presence of wind / presence of stronger wind / amount of wind / intensity of wind [½] - **Higher** temperature of surroundings [½] or - **Lower** / **Lesser** humidity [½]	1	***For temperature and humidity:*** *Pupils must mention the comparison (higher/lower) to be awarded marks.* ***For *wind:*** *marks will be awarded even if no comparison is shown.* • *Heat / presence of heat / colour (0)*

BOOKLET B			
Question	**Suggested Answers**	**Marks**	**Remark(s)**

37. (a)	*KEY CONCEPT(S) / SKILL(S) ASSESSED:* There will be only **one changed variable** [1] and the number of spins of the wheel is only **due to the length of the elastic band pulled and not other variables** [1] like the type of wheel. **OR** If he had used a different wheel, it might have had a **different weight / mass / length / size / material [any dimension factor]** **(1)** thus the experiment will be unfair due to **more than 1 changed variable.** (1)	2	*DO NOT ACCEPT:* •
(b)	When the length of the string pulled **increased**, the number of times the wheel spins **increased**. *OR* The **longer** the length of the string pulled, the **greater** the number of times the wheel spins.	1	*DO NOT ACCEPT:* • *Wrong trend (0)*
(c)	1. Gravitational force / gravity 2. Air resistance / frictional force / friction	2	*DO NOT ACCEPT:* • *Elastic Spring Force* • *Movement force* • *Kinetic Force* • *Any type of ENERGY*

BOOKLET B			
Question	**Suggested Answers**	**Marks**	**Remark(s)**

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38. (a)	The beam will tilt downwards at B. or The beam will tilt upwards at A ***OTHER ACCEPTABLE RESPONSE(S):*** The beam will tilt towards B	1	***DO NOT ACCEPT:*** • *The beam will tilt towards A (did not indicate clearly that it is pointing upward)*
(b)	*500* cm^3 [1] *Air has no definite volume. / Air can be compressed[1]* The volume remained the same (Remind the pupils that they must state the exact volume)	2	***DO NOT ACCEPT:***
39. (a)	Metal X expands more than metal W so it is **longer** than metal W after heating. ***OTHER ACCEPTABLE RESPONSE(S):*** Metal X expands more and allows more space / make space for it to bend downwards [½]	1	***DO NOT ACCEPT:*** • Metal X expands faster than metal W. (Repeated- already mentioned in question stem)
(b)	Metal X expands more than metal W so the strip **would bend away from the upper contact point.**[1] Since the **two contact points did not touch the circuit will not be closed/ the circuit is still open** [1]	2	***DO NOT ACCEPT:*** • Dependant marking. • Must shown that the strip bends away and

			it did not touch the contact point. • The contact point is not magnetic / electrical insulator
(c)	They must be (good) conductors of electricity.	1	
40. (a)	***ACCEPTABLE RESPONSE:*** *A Translucent* *B* Transparent C *Opaque*	1	*No partial mark.*
(b)	Light travels in a straight line. or Light can be blocked by an opaque / translucent object.	1	***DO NOT ACCEPT:*** • light is blocked by an object.
(c)	The shadow size is not affected by the amount of light.	1	