



Angla-Chinese School (Junior)

Anglo-Chinese School (Primary)

PRELIMINARY EXAMINATION 2020 SCIENCE PRIMARY SIX BOOKLET A

Name:	(}	Class: Primary 6
Date: 25 August 2020		Total T	ime for Booklets A and B: 1 h 45 mln

Additional Materials: Optical Answer Sheet (OAS)

INSTRUCTIONS TO CANDIDATES

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

This booklet consist	ts of 24 printed pages i	ncluding this cover page.

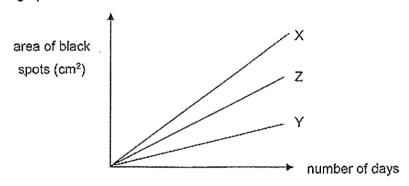
For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and shade your answer on the Optical Answer Sheet.

(56 marks)

1 Devi carried out an experiment on three similar slices of bread under different conditions.

Bread	Conditions
Slice A	Placed on a table in the kitchen
Slice B	Sprinkled with water and kept in the cupboard
Slice C	Put in an airtight container and kept in the refrigerator

She observed the three slices of bread for black spots over ten days and plotted the results in the graph.



Which slices of bread best represent X, Y and Z in the graph?

	х	Y	Z
K)	Slice A	Slice B	Slice C
(2)	Slice A	Slice C	Slice B
(3)	Slice B	Slice A	Slice C
(4)	Slice B	Slice C	Slice A

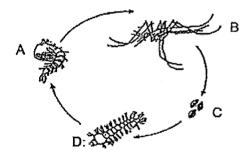
2 The table shows some characteristics of three organisms, P, Q and R. A tick (✓) indicates that the organism has that characteristic.

Organism	Can make its own food	Can reproduce by spores	Can be seen only under a microscope
Р		~	
Q	4	·	
R			✓

Which of the following correctly represents P, Q and R?

ſ	Р	Q	R
(1)	Cat	Rose plant	Mushroom
(2)	Mushroom	Bird's nest fem	Bacteria
(3)	Bacterià	Bird's nest fem	Rose Plant
(4)	Yeast	Mushroom	Bacteria

3 The diagram shows the life cycle of a mosquito. Tim sprayed oil onto the possible breeding grounds of mosquitoes in order to reduce the number of mosquitoes.



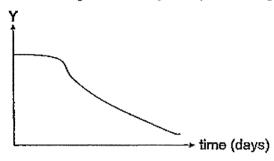
In which of the following two stages does this method help to reduce the number of mosquitoes?

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

The diagram shows a seedling. 4



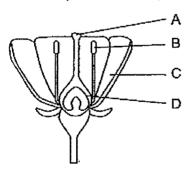
Ahmad observed the seedling for a few days and plotted the graph as shown.



What could the vertical axis, Y, of the graph represent?

- Mass of the seedling. (1)
- Height of the seedling. (2)
- (3) Length of the root of the seedling.
- (4) Size of the seed leaves of the seedling.

5 The diagram shows a flower with parts labelled A, B, C and D.



During the process of pollination, pollen grains are transferred from part _____ to part

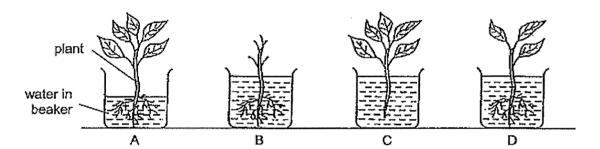
(1) A, B

(2)

B, A

- B, C (3)
- C, D (4)

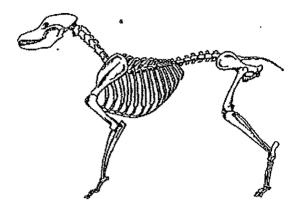
- Which of the following two traits can be passed on from parents to their young?
 - A Eye colour
 - B Hair length
 - C Fingerprint
 - D Ability to roll tongue
 - (1) A and B only
 - (2) A and D only
 - (3) B and C only
 - (4) C and D only
- 7 Kay prepared four set-ups with identical beakers to investigate whether a plant can survive without its leaves.



Which of the following pairs of set-ups should she choose to test her aim?

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

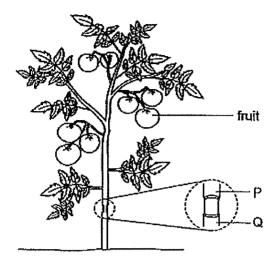
8 The diagram shows the skeleton of an animal.



Which of the following is/are the function(s) of the skeleton?

- A Protects the vital organs.
- B Allows the animal to move.
- C Shows the outer covering of the animal.
- D Provides structure and shape for the animal.
- (1) A only
- (2) B and D only
- (3) A, B and D only
- (4) A, B, C and D

9 Jackie removed the outer ring of the stem from a plant between P and Q as shown.
Only the food-carrying tubes were cut away with this outer ring.

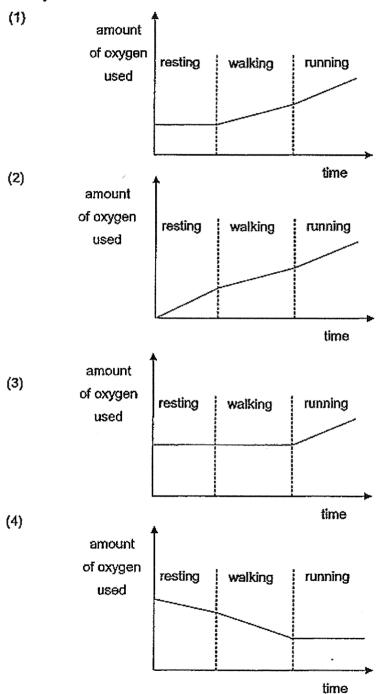


After ten days, which of the following are likely observations that Jackie could make about the plant?

- A Part P will be swollen.
- B Part Q will be swollen.
- C The leaves have dried up.
- D The fruits have grown bigger.
- (1) A and B only
- (2) A and D only
- (3) B, C and D only
- (4) A, B, C and D

Jie Yong carried out three consecutive activities, resting, walking and running, over a period of time.

Which of the graphs best represents the amount of oxygen Jie Yong used during each activity?



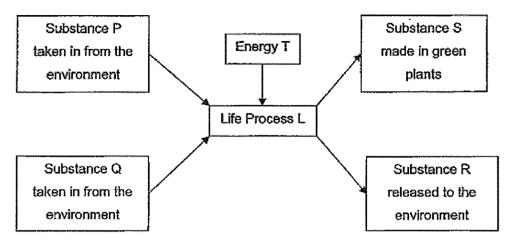
11 The table shows the different cell parts present in cells P, Q, R and S. A tick (
indicates that the cell part is present.

		C	ell	**************************************
Cell part	P	Q	R	S
Nucleus	4	✓	4	~
Cell Wall	4		~	
Cytoplasm	4	√	✓	✓
Chloroplast	W	and the second s	✓	
Cell Membrane	√	✓	~	✓

Which cell, P, Q, R or S, is most likely from the root of a plant?

- (1) P
- (2) Q
- (3) R
- (4) S

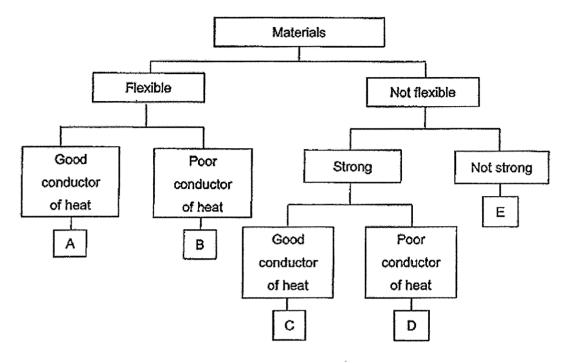
12 The diagram represents a life process, L, which takes place in green plants.



Which of the following represents P, Q, R, S and T?

	Substance			Engage T	
	Р	Q	R	8	Energy T
(1)	oxygen	water	carbon dioxide	food	heat
(2)	carbon dioxide	water	oxygen	food	light
(3)	oxygen	carbon dioxide	food	water	heat
(4)	food	carbon dioxide	oxygen	water	light

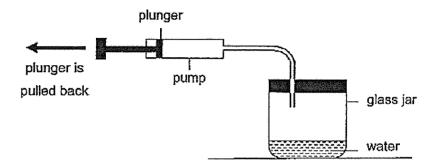
13 Study the classification chart.



Which materials are most suitable for making oven gloves and baking trays when baking?

	Oven gloves	Baking trays
(1)	Α	С
(2)	В	D
(3)	В	С
(4)	E	E

The diagram shows a pump which is connected to a glass jar. The volume of the glass jar is 300 cm³ and it contains 30 cm³ of water.

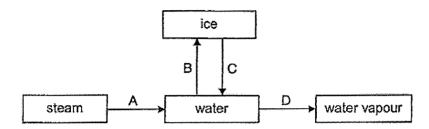


Each time the plunger of the pump is pulled back completely, 20 cm³ of air would be drawn out of the glass jar.

Which of the following shows the correct volume of air and water in the glass jar after the plunger is pulled back completely once?

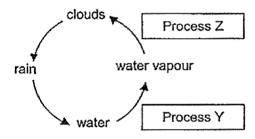
	Volume of air (cm³)	Volume of water (cm³)
(1)	250	50
(2)	250	30
(3)	270	30
(4)	290	10

The arrows in the diagram show some processes which involve the changes of state of water. Each process involves either a heat gain or heat loss.



Which pair of arrows represents the processes which involve heat gain?

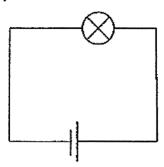
- (1) A and B
- (2) A and D
- (3) B and C
- (4) C and D
- 16 The diagram shows the water cycle.



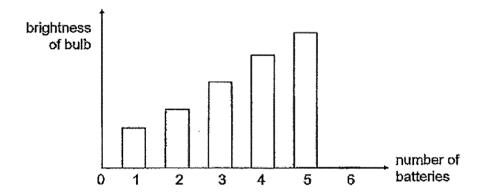
Which of the following statements about processes Y or Z in the water cycle is correct?

- (1) Heat is needed for process Z only.
- (2) Process Y occurs at any temperature.
- (3) Process Y occurs during day time only.
- (4) Process Z involves a liquid becoming a gas.

17 The diagram shows a simple circuit.



Gregory added batteries, one at a time, in a series arrangement to the circuit and recorded the brightness of the bulb. The graph shows his results.

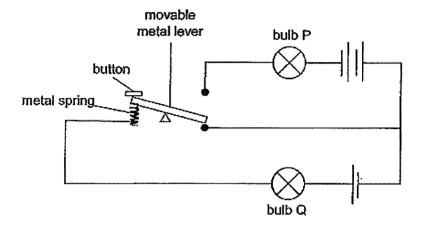


Which of the following is/are possible explanation(s) why the brightness of the bulb was zero when the sixth battery was added?

- A Too many batteries were added to the circuit.
- B The sixth battery did not have any potential energy.
- C The wire and the sixth battery were not connected properly.
- (1) A only
- (2) B only
- (3) A and C only
- (4) B and C only

The diagram shows how the brightness of the bulb(s) in a circuit is/are controlled by a button. The bulbs and batteries used are identical and are in working condition.

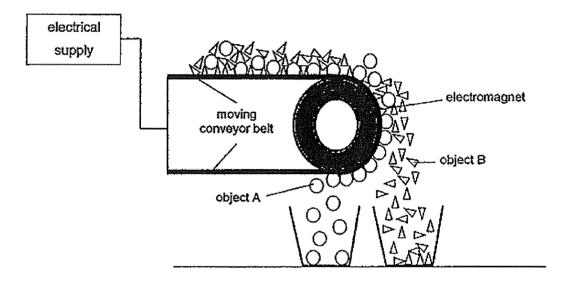
When the button is not pressed, only bulb Q lights up with a brightness of 10 units.



What would happen to the brightness of both bulbs P and Q if the button is pressed and held down?

ſ	Bulb P	Bulb Q
(1)	10 units	0 units
(2)	more than 10 units	0 units
(3)	10 units	more than 10 units
(4)	more than 10 units	more than 10 units

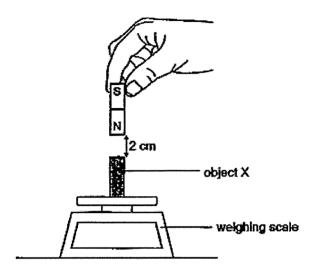
The diagram shows how an electromagnetic conveyor belt is used to separate objects A and B.



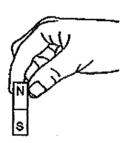
Based only on the above diagram, which of the following statements is likely to be true?

- (1) The electromagnet is made of aluminium.
- (2) Both objects A and B are conductors of electricity.
- (3) Both objects A and B are made of magnetic materials.
- (4) Object A is made of steel while object B is made of copper.

20 In an experiment, Mr Lim placed object X on the weighing scale and the scale showed a reading of 10 units. He then placed a bar magnet 2 cm directly above object X and the scale showed a reading of 12 units.



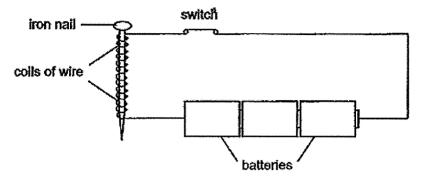
Next, Mr Lim flipped the bar magnet over and held it 2 cm directly above object X, as shown.



What would be the new reading on the weighing scale?

- (1) 0 unit
- (2) 10 units
- (3) 12 units
- (4) 22 units

21 Kasheem conducted an experiment to find out how the number of colls of wire around an iron nall would affect the strength of the magnetised nail.



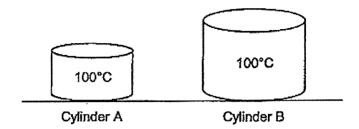
The strength of the magnetised nail is measured by the number of paper clips that it could attract. Kasheem recorded the results in the table.

Number of coils of wire around iron nail	Number of paper clips attracted
10	7
20	10
30	13
40	15
50	16
60	16
70	16

Based only on the results, which of the following conclusion(s) can be made?

- A The magnetised nail will be able to attract more than 16 paper clips if four batteries are used.
- B The maximum number of paper clips that can be attracted by the magnetised nail is 16.
- C After 50 coils of wire, the number of colls of wire around the nail will not increase the strength of the magnetised nail.
- (1) Bonly
- (2) A and B only
- (3) A and C only
- (4) B and C only

22 The diagram shows two iron cylinders, A and B, heated to 100°C.



Which of the following is correct?

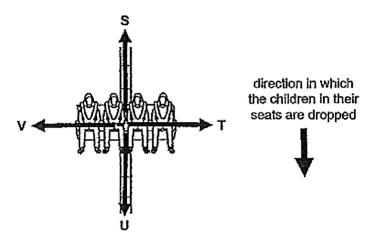
- (1) Cylinder A is hotter than Cylinder B.
- (2) Cylinder A has less heat energy than Cylinder B.
- (3) Both cylinders have the same amount of heat energy.
- (4) Both cylinders will take the same amount of time to reach room temperature.
- 23 The picture shows a man pushing a box across the floor.



Which of the following makes it difficult for the man to push the box?

- A The mass of the box.
- B The force the man used to push the box.
- C The friction between the box and the floor.
- D The friction between the man's feet and the floor.
- (1) A and B only
- (2) A and C only
- (3) B and D only
- (4) A and D only

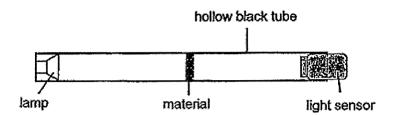
- 24 The picture shows several children sitting on a carnival ride. During one part of the ride, the children in their seats are dropped from a certain height.
 - S, T, U and V represent the direction of possible forces acting on the children during this part of the ride.



Which arrows show the direction of gravity and friction acting on the children respectively when the seats drop?

ſ	Direction of gravity	Direction of friction
(1)	U	S
2)	U	٧
3)	S	T
4)	S	V

25 Ephraim set up the following experiment to measure the amount of light that can pass through four materials, A, B, C and D using a light sensor.



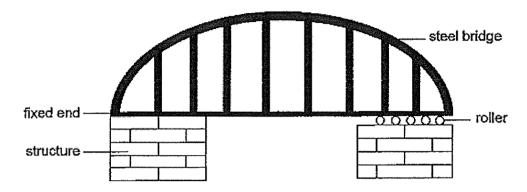
He recorded the results in the table.

Material	Amount of light detected (units)
Α	270
В	158
С	0
D	97

Which of the following shows the correct arrangement of materials from one that allows least light to pass through?

	allows least light to pass through			allows most light to pass through
(1)	Α	В	C	D
(2)	В	D	С	А
(£)	С	Α	D	В
(4)	С	D	8	A

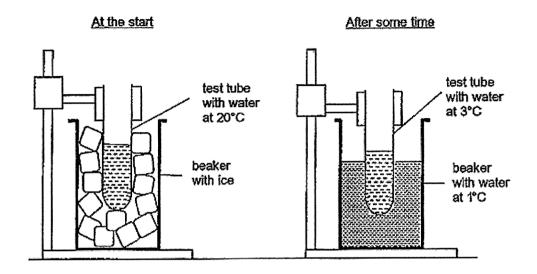
The diagram shows a steet bridge. One end of the bridge is fixed securely to the structure unlike the other end which is resting on rollers as shown.



Which of the following statement(s) explain(s) why one end of the bridge is resting on the rollers?

- A To reduce friction between the structure and the bridge.
- B To allow the bridge to expand on hot days without damaging the structure.
- C To allow the rollers to contract on cold days without damaging the structure.
- (1) Bonly
- (2) Conly
- (3) A and B only
- (4) A and C only

27 Shirleen carried out an experiment as shown. A test tube containing water at 20°C was placed in the centre of a beaker with some ice cubes. The beaker was then left in a room for some time.



Based on the experiment above, which of the following are correct?

- A The ice cubes gained heat from the surrounding and melted.
- B The ice cubes lost heat to the water in the test tube and melted.
- C The beaker gained heat from the surrounding and became cooler.
- D The water in the test tube lost heat to the ice cubes and became cooler.
- (1) A and B only
- (2) A and D only
- (3) B and C only
- (4) C and D only

28 The diagram shows a man bowling.



Which of the following best shows the energy conversions when the bowling bail rolls on the ground and hits the pins down?

(1)	kinetic energy (bowling ball)	→	heat energy (pins)	→	kinetic energy (pins)				
(2)	potential eпergy (man)	→	kinetic energy (bowling ball)	→	sound energy (pins)	+	heat energy (pins)		
(3)	kinetic energy (bowling ball)	→	kinetic energy (plns)	a ļ a	sound energy (pins)	+	heat energy (pins)		
(4)	potential energy (bowling ball)	→	potential energy (man)	→	kinetic energy (bowling ball)	→	sound energy (pins)	+	heat energy (pins)

(Go on to Booklet B)







Anglo-Chinese School (Junior)

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PRELIMINARY EXAMINATION 2020 SCIENCE PRIMARY SIX BOOKLET B

Name:	() Class: Primary 6
Date: 25 August 2020		Total Time for Booklets A and B: 1 h 45 min
		Parent's/ Guardian's signature

INSTRUCTIONS TO CANDIDATES

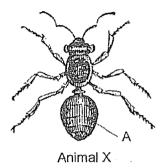
- 1. Write your name, index number and class in the spaces provided.
- 2. Do not turn over this page until you are told to do so.
- 3. Follow all instructions carefully.
- 4. Answer all questions.
- 5. Write your answers in this booklet.

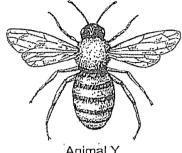
BOOKLET	MAX MARKS	MARKS OBTAINED
Α	56	
В	44	
Total	100	

This booklet consists of 15 printed pages including this cover page.

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

Two boys, Elliott and Jimmy, saw two animals in the garden as shown. 29





Animal Y

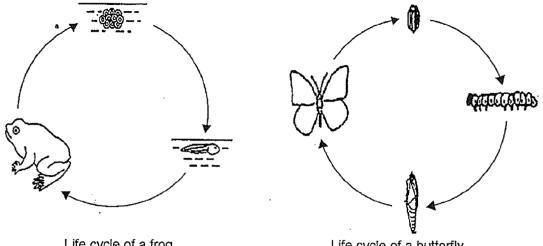
Elliott said that both are insects but Jimmy said that only Animal X is an insect.

(a)	Based on your observation, who is correct? Give a reason for your answer.	[1]
(b)	State a characteristic of insects that the boys might have learnt which is not of from the above pictures.	bserved [1]
(c)	State a function of outer covering A.	[1]

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Score

30 The diagrams show the life cycles of a frog and a butterfly.

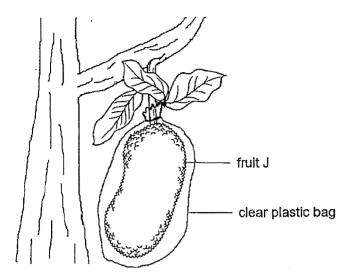


Life cycle of a frog		froa	а	of	cycle	Life
----------------------	--	------	---	----	-------	------

Life cycle of a butterfly

(a)	a butterfly.	es of a frog and [1]
(b)	Both the frog and the butterfly lay many eggs at a time. Explain the advantage many eggs at a time.	ntage of laying [1]
(c)	How do the adult frog and its young breathe in water?	[1]

Fruit J produces a gas, ethylene, which causes it to ripen faster.
As such, farmers usually wrap fruit J in a plastic or cloth bag as shown.



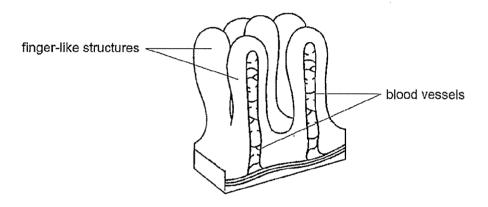
(a)	Explain how wrapping fruit J in bags will cause it to ripen faster.	[1]
(b)	What is another advantage for farmers to wrap fruit J in bags?	[1]
	tin said that fruit J will only grow if wrapped in a clear plastic bag so that it will stinake food.	ll be able
(c)	Do you agree with Martin? Explain your answer.	[1]

32 Eugene ate a meal of chicken rice.

(a) Complete the table to show the amount of digested food leaving the gullet and small intestine of Eugene's digestive system after the meal.

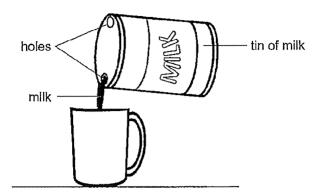
Name of organ	Amount of digested food leaving the organ (units)
mouth	10
gullet	
stomach	20
small intestine	

Inside the walls of the small intestine are finger-like structures as shown.



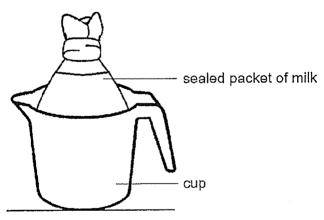
(b)	Explain how these finger-like structures affect the rate of absorption of digested food into the blood vessels. [1]
(c)	How do the blood vessels obtain and carry the digested food to all parts of the body? [2]
	·

Gina made a hole in a tin of milk before pouring it out. When she went to a drink stall, she saw that the stallholder had made two holes instead of one in a tin before pouring out the milk as shown.



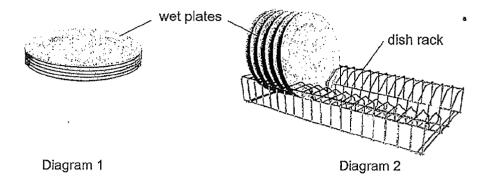
(a)	State a difference observed when the milk flowed out from a tin with one hole and with two holes.	a tin [1]
(b)	Explain your answer in (a).	[2]

Gina then bought a sealed packet of milk and placed it inside a cup as shown. Both the packet of milk and the cup have a volume of 300 ml.



(c)	What property of a liquid enabled the sealed milk to be placed in	n the cup as	shown? [1]
		(Go on to th	e next page
		Score	4

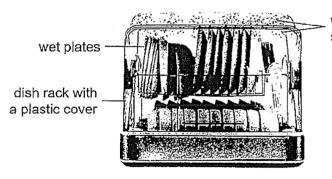
Mary stacked some wet plates, one on top of the other, and left them to dry as shown in diagram 1.



Her mother told her to place the wet plates on a dish rack, as shown in diagram 2, so that they could dry faster.

(a)	State two reasons why the wet plates in diagram 2 would dry faster. For each reas explain your answer.	on [2
	1:	
	2:	

Mary bought a dish rack with a plastic cover. She placed some wet plates onto the dish rack and closed the cover. After some time, she noticed water droplets on the inner surface of the plastic cover as shown.

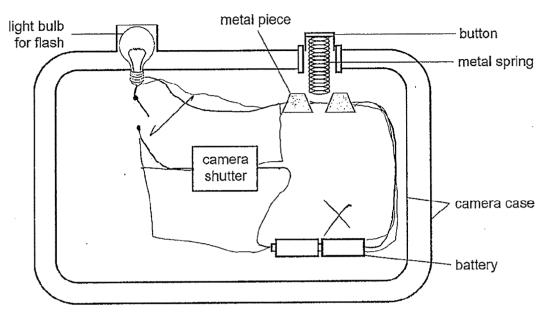


water droplets on the inner surface of plastic cover

(b)	Explain how the water droplets were formed.	[2

(Go on to the next page)			
Score	4		

35 The diagram shows part of a circuit in a camera.

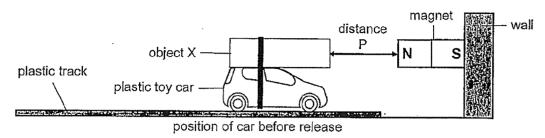


To take a photograph, the camera shutter needs to be connected to a closed circuit with the button being pressed down. A photograph can also be taken by the camera with or without the use of flash.

(a)	Using a switch and some wires, complete the circuit in the diagram so that the	ie camera
	will worked as described above.	[2]

(b)	b) Suggest a disadvantage of the circuit above.		
(c)	If the metal pieces are switched to plastic pieces, will the camera still work? answer.	Explain your [1]	

Janesh tied object X on top of his plastic toy car. He placed them on a track which allowed the car to only travel in a straight line. At the end of the track, he attached a strong magnet to the wall as shown.



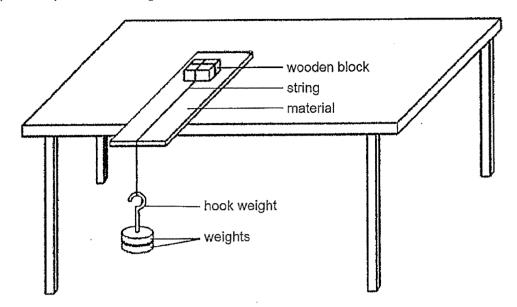
position of car after release

Janesh pushed the car with object X towards the magnet. At distance P, he released the car very gently. The car with object X was pushed back by the magnet and travelled a distance Q before stopping. He repeated the steps with decreasing distance P each time and measured the new distance Q.

(a)	Name one suitable material for object X. [1
(b)	Explain why the car with object X was pushed back along the track when Janesl released it.
(c)	State the relationship between distance P and distance Q. [1]
Jane He c	esh repeated the experiment using the same set-up, but he increased distance P instead observed that at a certain distance P, the car with object X did not move at all.
(d)	Explain Janesh's observation. [1]
	(Go on to)the next page

Score

Noel carried out an experiment using the set-up as shown. He tied a wooden block to a string and hung a hook weight on the other end. He placed the wooden block on different materials, X, Y and Z, and added weights until the wooden block started to slide.

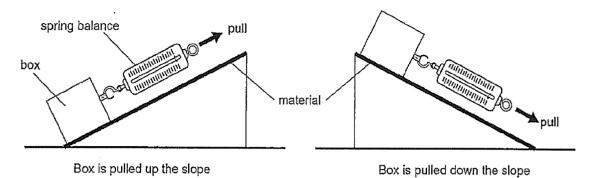


He recorded his results in the table.

Material	Х	Y	Z
Number of weights needed to cause the wooden block to slide	5	9	3

(a)	Name the two types of forces acting on the wooden block as it slid across each m	aterial. [1]
(b)	Based on Noel's results, which material was the smoothest? Explain why.	[1]

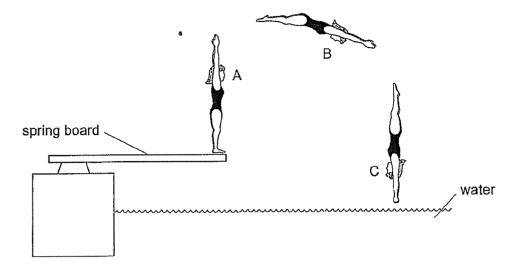
Noel prepared a different set-up for another experiment. He used a spring balance to pull a box up the slope and then down the slope made of each material as shown.



Noel noticed that for whichever material he used, more force was needed to pull the box up the slope than down.

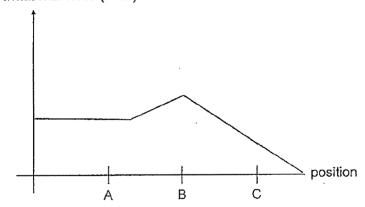
(c)	Explain why a greater force was needed to pull the box up the slope.	in	a	[1]

38 The diagram shows a diver diving into a pool. She jumps off the spring board at point A, reaches up into the air till point B and enters the water at point C.



- (a) State the force which allows the diver to jump off at point A.
- (b) Without changing the spring board, what can the diver do if she wants to reach a point higher than B?
- (c) In the space below, draw a line graph to show the amount of gravitational force acting on the diver at positions A, B and C. [1]

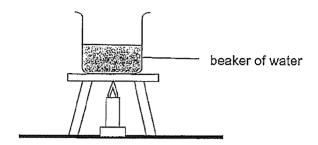
amount of gravitational force (units)



(Go on to the next page)
Score 3

[1]

39 Mingzhe heated a breaker of water to find out how the volume of water affects the rate at which its temperature rises.

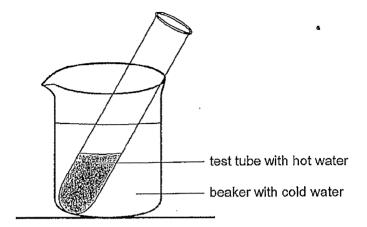


Mingzhe used four identical set-ups and filled each beaker with different volumes of water. He recorded the results of his experiment in the table.

Beaker	Volume of water at the start (cm³)	Temperature at the start (°C)	Temperature at the 5 th min (°C)
Α	30	15	65
В	50	15	50
С	65	15	Y
D	80	15	35

·			•••••			//			
Wh	nat could Mingzhe	conclud	de from t	the resu	lts abov	e?	•		
Mir	ngzhe continued to	heat th	ne water	in beak	er D. Th	ne table	shows t	he results.	7

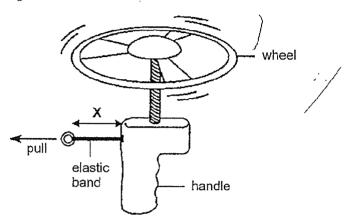
In another experiment, Mingzhe poured some hot water into a test tube and placed it into a beaker of cold water, as shown.



Explain why.	
After three hours, the temperatures of the water in the test tube and beaker r room temperature and remained at room temperature. Explain why.	eac

The diagram shows a toy. When the elastic band is pulled and then released, the wheel will spin before flying off. The greater the number of times the wheel spins, the further it travels.

Aishah wants to find out how the number of spins of the wheel changes when the elastic band is pulled to different lengths.



The table shows the results of her experiment.

Length of the elastic band when pulled, X (cm)	Number of times the wheel spins		
4	2		
8	4 .		
12	6		

(a)	Aishah used the same whe test.	el thr	oughout her experiment. I	≘xplai	in how this ensures a fair [1]
		•			
(b)	State the relationship between	en X	and the number of times	the w	heel spins. [1]

(c)	Fill in the boxes below to s	how	the energy conversion of	the to	ov starting from the time
(5)	Aishah releases the elastic	band	till the wheel spins.	uic a	by starting from the time [1]
		\rightarrow		→	
	energy (stretched elastic band)	'	energy (when the elastic band is released)	1	energy (spinning wheel)
		E	nd of Paper		
					Score 3

SCHOOL: ACS PRIMARY SCHOOL

LEVEL : PRIMARY 6 SUBJECT : SCIENCE TERM : 2020 PERLIM

SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
4	2	2	4	2	2	3	3	2	1
Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
1	2	3	3	4	2	3	4	4	1
Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		1
4	2	2	1	4	3	2	3		

SECTION B

Q29)	a)Elliott. Animal X and Y both have 3 body parts and 6 legs like a Insect.
	b)Insects has a exe skeleton
	c)To protect it's internal organs.
Q30)	a)They both have an egg stage.
	b)There will be a higher chance a egg will hatch and have continuity
	of it's own kind.
	c)Adult frog breathe through skin in water and young breathe
	through gills.
Q31)	a)Ethylene produced by the fruit will be trapped inside the bag
	causing, it to ripen faster.
	b)Animals will not be able to feed on J.
	c)No. Fruit J does not need sunlight as it is the leaves that need
	sunlight to make food.

Q32)	a)10 b)There is a greater exposed surface area and can absorb faster. c)Digested food will be absorbed into the walls of the small intestine then absorbed into the blood stream where blood vessels will transport it to all parts of the body.
Q33)	a)Milk flowed out faster with 2 holes than 1 hole. b)With 2 holes, Air can enter and displace the milk and push it out of the tin that is flowing out of the hole. c)Liquid has no definite shape.
Q34)	a)1)There is a greater exposed surface area and can gain more heat.which increase the rate evaporation. 2)The water droplets on the plate will get pulled down by gravity, so that there is less water left. b)Water droplets were formed when water from the wet dishes gained heat and evaporated causing water vapour to form. Once water vapour was formed water vapour condense on the cooler inner surface of plastic cover causing water droplets to form.
Q35)	b) If the bulb fuses, the circuit will be opened and will not work. c) No. Plastic is not a conductor of electricity and the circuit will be opened and no electricity will flow.

Q36)	a)Steel.						
	b)The like poles of X and the magnet was facing and repelled each *						
	other.						
	c)The more distance P, the shorter distance Q.						
	d)X was too far away from the magnet to be repelled.						
Q37)	a)Friction and gravity.						
	b)Z. It needed the least weight needed for the block to slide and it						
	had the least friction between the block and the material.						
	c)Pulling the block up the slope requires more force to go against						
	gravity.						
Q38)	a)elastic spring force						
Q 50)	b)Push down harder or apply greater downward force to increase						
	compression of spring.						
	c)						
	A B C						
Q39)	a)40℃						
	b)The more volume of water at the start the temperature of water at						
	the 5 th min decreases.						
	c)All the water had evapovrated						
	d)It will decrease. The water will lose heat to the cold water.						
	e)The water in the best tube and the water in the beaker did.						
Q40)	a)There will be only one changed variable and the number of spins						
	of the wheel is only due to the length of the elastic band pulled and						
	not other variables like the type of wheel.						
	b)The more X, the more times the wheel spins.						

c)elastic potential →kinetic → kinetic