NANYANG PRIMARY SCHOOL

2024
PRIMARY 6
MID-YEAR PRACTICE PAPER

SCIENCE
(BOOKLET A)

Total Time for Booklets A and B: 1 h 45 min

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the space provided.
2. Do not open this booklet until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. For each question from 1 to 28, four options are given.
   Indicate your choice in this booklet.
   Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet provided.

Name:_____( )

Class: Primary 6 ( )

Booklet A consists of 20 printed pages including this cover page.

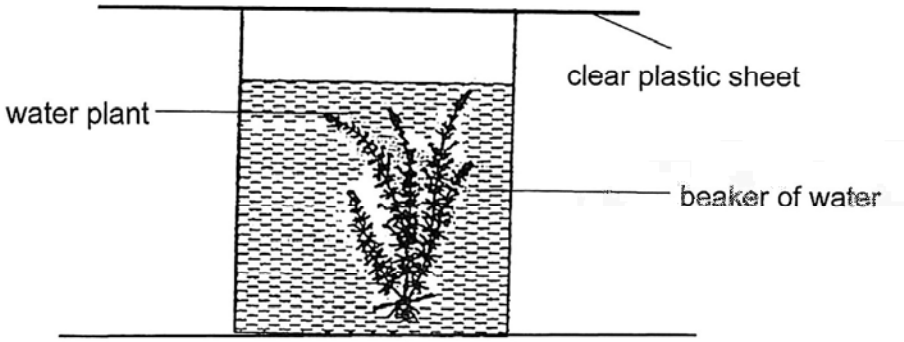
Section A: Multiple Choice Questions [56 marks]

1. Which of the following statements about how living things obtain energy are correct?

A Fungi can make their own food to obtain energy.
B Plant-eaters obtain energy by eating other plants.
C Plants make use of the food that they made for energy.
D Plant-and-animal eaters obtain their energy only directly from plants.

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

2. Alicia prepared the set-up in the morning as shown below. She then placed it in an open field for 24 hours.



At every six-hour interval, she tested a sample of the water from the beaker by adding liquid A to it.

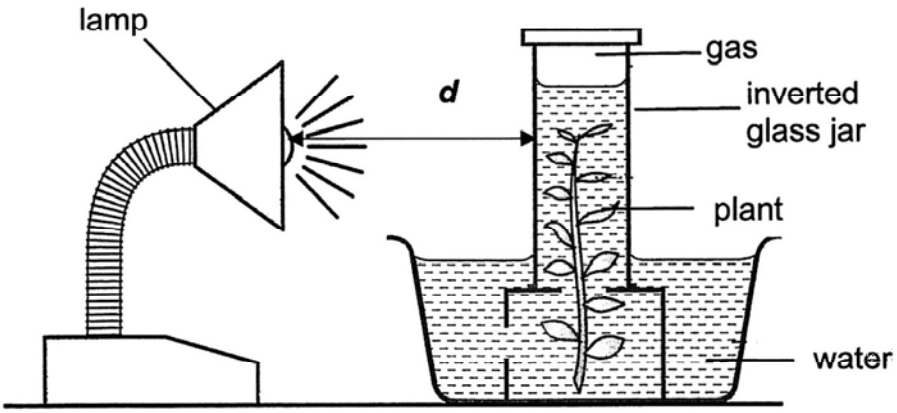
Liquid A causes a colour change in the water as shown below.

Amount of carbon dioxide in the water	low	high
Colour of water with liquid A	yellow	red

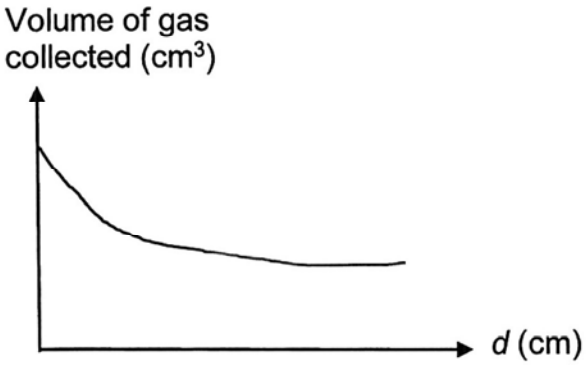
What would be the colour observed when Alicia tested water samples taken at noon and at midnight?

	At noon	**At midnight**
(1)	red	red
(2)	red	yellow
(3)	yellow	yellow
(4)	yellow	red

3. Bryan set up an experiment as shown below. He repeated the same experiment several times, each with a different distance of light source from the plant, ***d***.



The results from the experiment were used to plot the graph below.



Which one of the following statements correctly states the aim of his experiment?

(1) To find out if light is required for photosynthesis.
(2) To find out if oxygen is released during photosynthesis.
(3) To find out how light intensity affects the rate of photosynthesis.
(4) To find out how the volume of gas collected affects the rate of photosynthesis.

4. Which one of the following represents a single population?

(1) All the different plants found in a field.
(2) All the birds counted in one day in a garden.
(3) All the organisms living in the pond.
(4) All the bacteria of the same kind found in yoghurt.

5. The table below shows the conditions of four different habitats, A, B, C and D.

Condition	Habitat			
	A	B	C	D
Light	dim	bright	dim	bright
Temperature	high	low	low	high
Moisture in the surroundings	none	low	moderate	none
Presence of dead matter	plenty	little	plenty	little

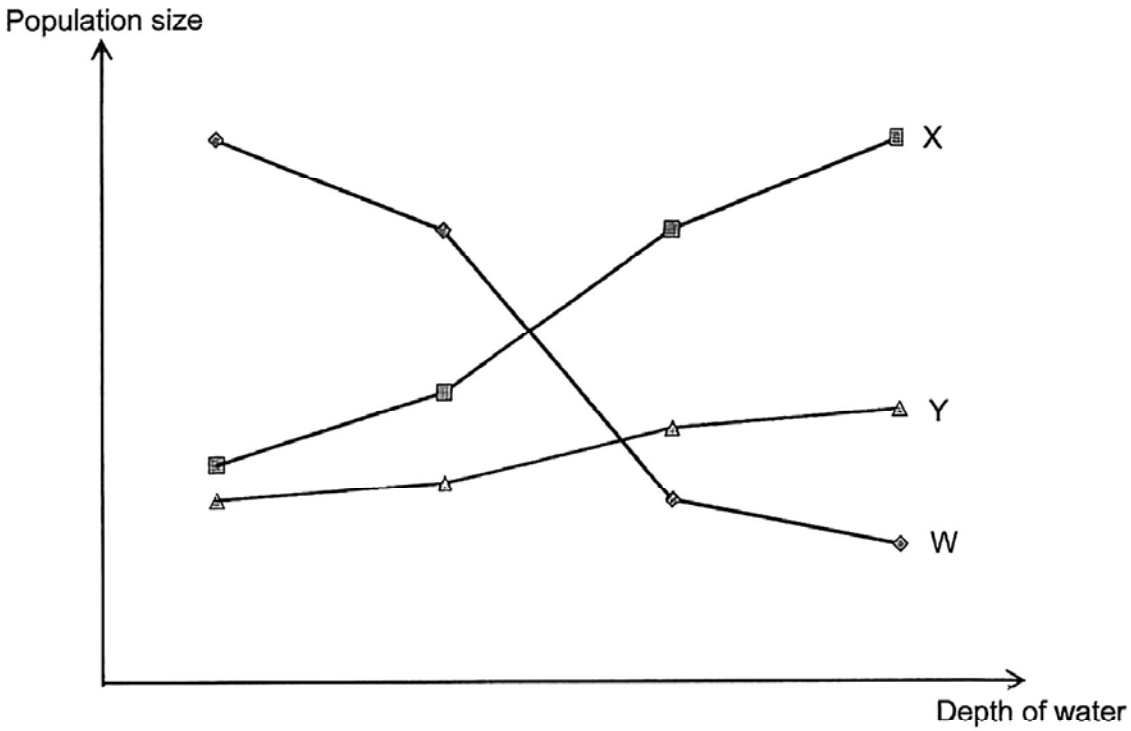
Elyse found organism X in one of the habitats. She observed it and recorded the characteristics of the organism as shown below.

- It feeds on dead matter.
- It can move easily in the dark.
- It breathes through its moist skin.

In which one of the habitats was organism X most likely to be found?

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

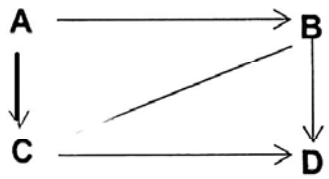
6. The graph below shows the population size of three different organisms, W, X and Y, at different water depths.
As the depth of a pond increases, the amount of light that passes through the water decreases.



Which organism(s) survive(s) better when there is less light?

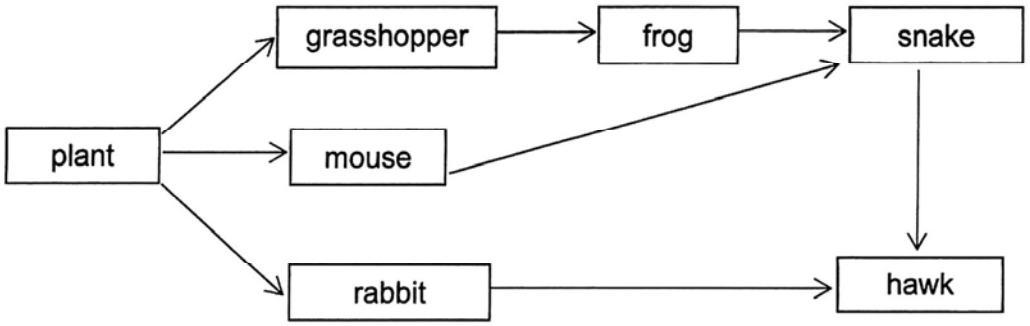
(1) X only
(2) W and X only
(3) W and Y only
(4) X and Y only

7. In the food web shown below, which organism is most likely a plant?



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

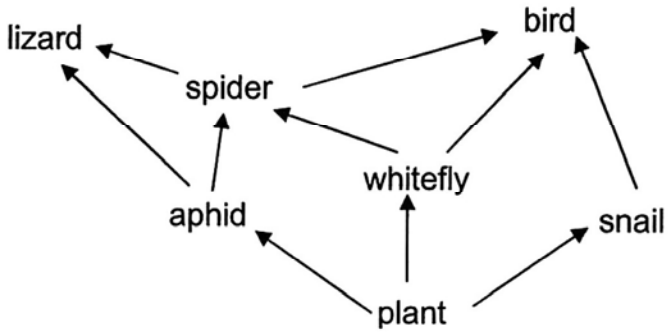
8. The food web below shows the food relationships of different organisms living in a community.



Based on the food web above, which organisms are both predators as well as prey?

(1) frog only
(2) frog and snake only
(3) hawk and snake only
(4) grasshopper, mouse and rabbit only

9. The diagram below shows a food web.



Based only on the information above, which of the following correctly explains what might happen within a short time if the population of the spiders greatly decreased suddenly?

A The population of whiteflies would decrease as there is one less predator.
B The population of birds would increase as there is one less prey to feed on.
C The population of lizards would be affected more than the population of birds because the lizards have less food sources.

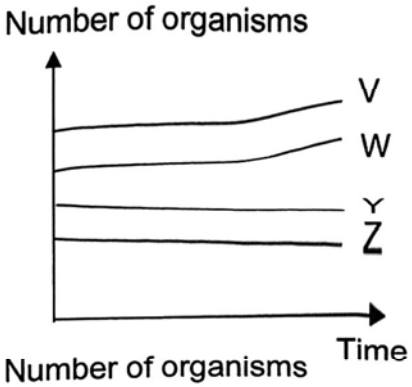
(1) A only
(2) C only
(3) B and C only
(4) A, B and C

10. The food relationship between five organisms is shown in the food chain below.

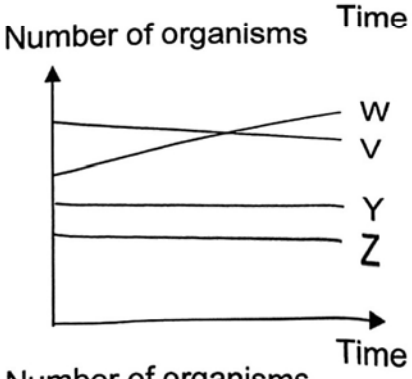
V → W → X → Y → Z

If organism X is removed from the food chain, which one of the following graphs correctly shows the changes in the other populations?

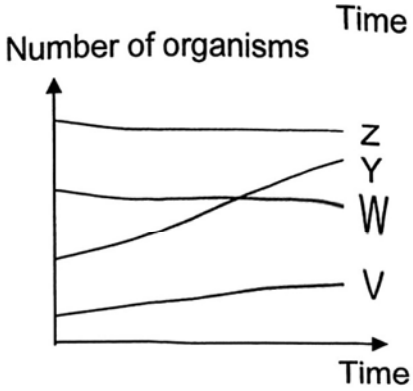
(1)



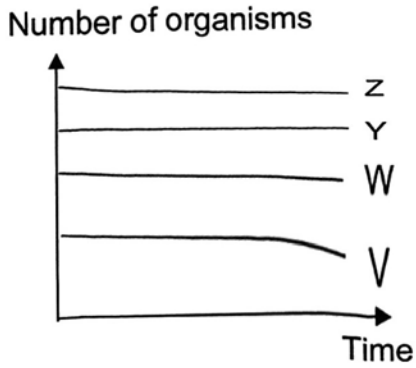
(2)



(3)



(4)

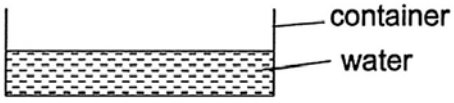


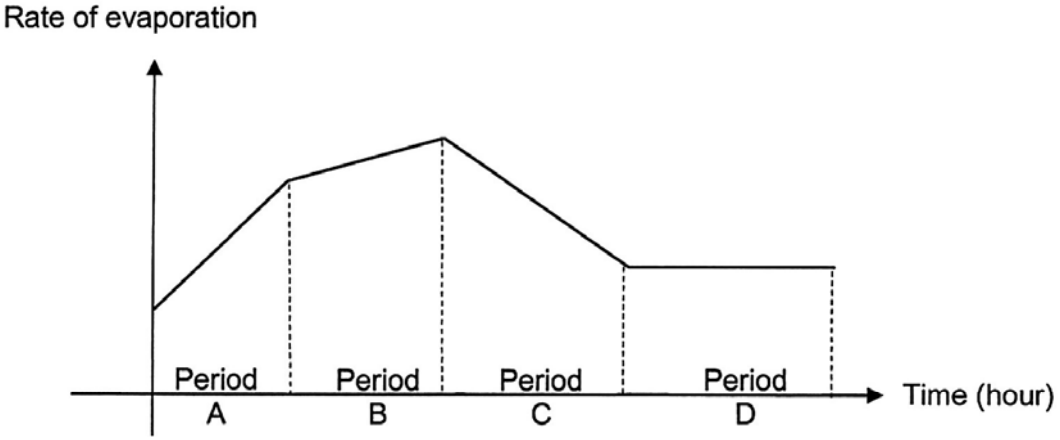
11. Which of the following statements about water is correct?

A There is no heat gain or loss when water boils at 100°C.
B The melting point and freezing point of pure water is the same.
C Water vapour can condense when it comes into contact with a cooler surface.
D Water can change from one state to another when it gains or loses heat.

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

12. The graph below shows the changes in the amount of water left in the container shown below over a period of time.





Which one of the following statements is a possible explanation for the change in the rate of evaporation of the water in the container?

	Period	Change in rate of evaporation	Explanation
(1)	A	increased	There was the most amount of water at the start.
(2)	B	increased	There was an increase in the temperature of the surrounding air around the container.
(3)	C	decreased	There was a decrease in the exposed surface area of water in the container.
(4)	D	remained constant	All the water in the container had completely evaporated.

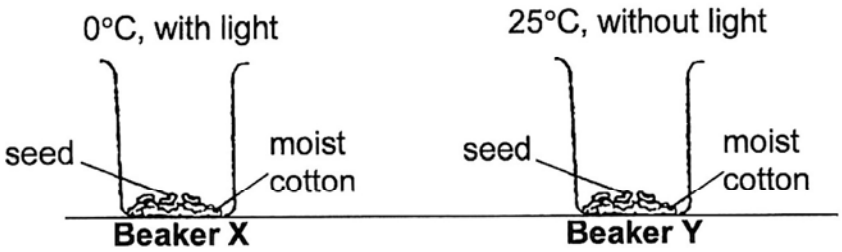
13. The table below shows the characteristics of three different flowers, A, B and C.

Characteristics	Flowers		
	A	B	C
Does it produce nectar?	Yes	No	Yes
Does it have brightly coloured and large petals?	No	Yes	Yes
Does it have stigma and anthers dangling outside the flower?	No	Yes	No

Based on the information above, which of the following flower(s) is/are most likely pollinated by wind?

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

14. Yumi placed three seeds of the same type in two identical beakers. Each beaker was put under a different set of conditions as shown below.



Which of the following are correct?

	Beaker	Observation of seeds	Explanation
A	X	germinated	There was light, oxygen and water.
B	X	did not germinate	There was no warmth.
C	Y	germinated	There was warmth, oxygen and water.
D	Y	did not germinate	There was no light.

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

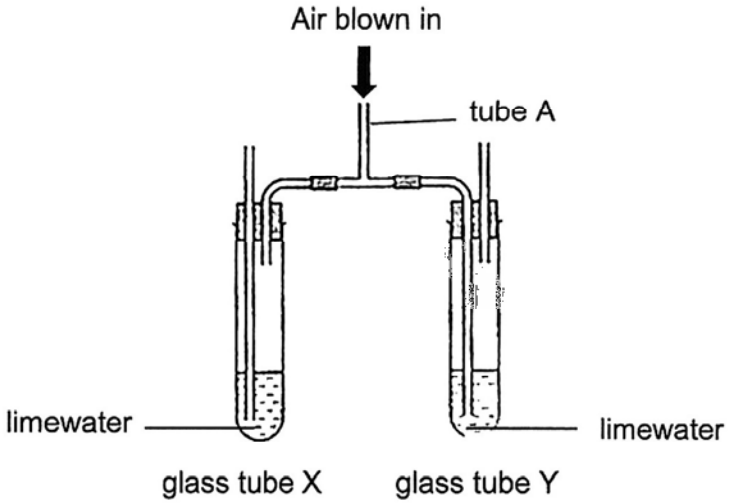
15. Compare the characteristics of a fish and a plant as shown in the table below.

	Fish	Plant
A	Takes in dissolved oxygen in water	Does not need oxygen
B	Has blood vessels to transport digested food and water	Has tubes to transport food and water
C	Has gills for gaseous exchange	Has tiny openings on leaves for gaseous exchange

Which of the above comparisons are true?

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

16. Dylan set up the following apparatus with the same amount of limewater poured into identical glass tubes, X and Y. Limewater turns cloudy after coming into contact with carbon dioxide.



Air was being blown into tube A continuously for 15 seconds.

Which one of the following describes Dylan's most likely observation?

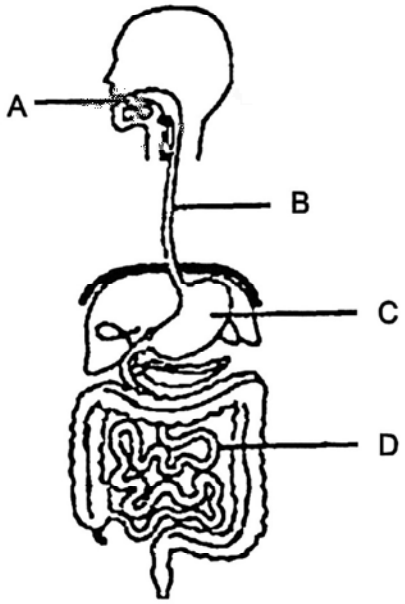
(1) The limewater in X and Y remained clear.

(2) Only the limewater in X turned cloudy.

(3) The limewater in Y turned cloudy faster than X.

(4) The limewater in X and Y turned cloudy at the same time.

17. The diagram below represents the human digestive system.



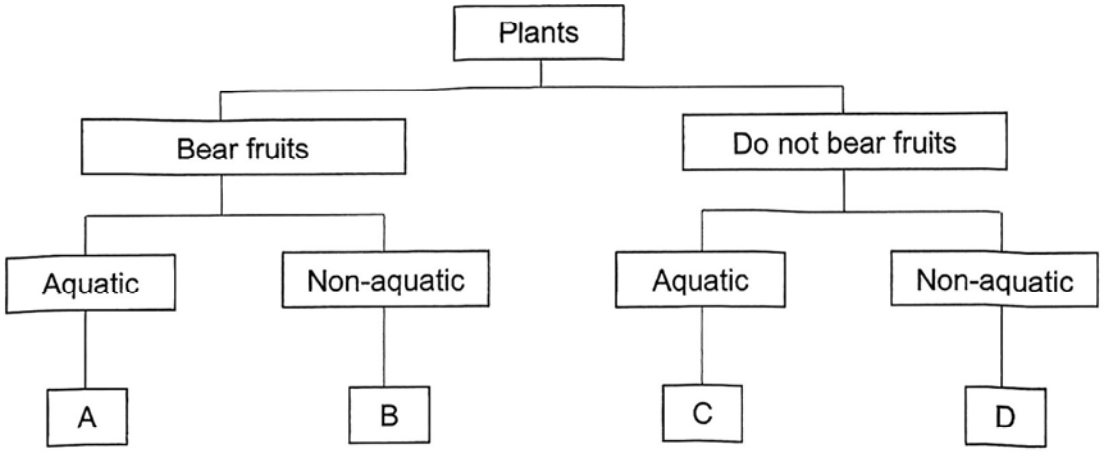
Which of the following correctly shows the changes in the amount of **undigested** food when it leaves parts A, B, C and D?

	Part A	Part B	Part C	Part D
(1)	decreases	no change	decreases	decreases
(2)	increases	no change	increases	increases
(3)	decreases	decreases	decreases	no change
(4)	increases	no change	no change	decreases

18. The table below shows the characteristics of plants P and Q. A tick (✓) shows that the plant has the characteristic stated.

Characteristic	Plant P	Plant Q
Has spores	✓	
Grows on land	✓	

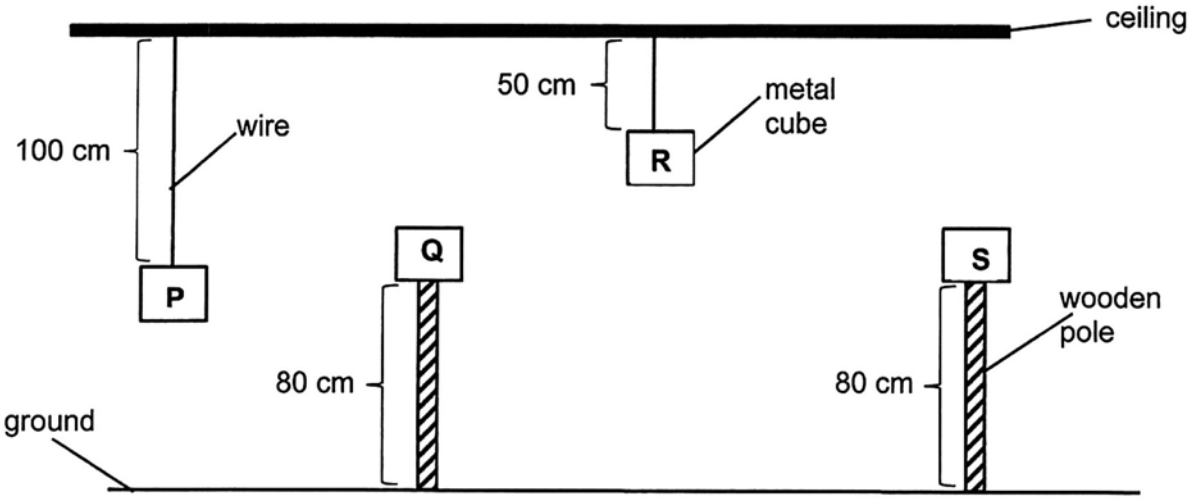
Study the classification chart below.



Based on the information above, which letters best represent plants P and Q?

	Plant P	Plant Q
(1)	A	D
(2)	B	C
(3)	C	B
(4)	D	A

19. Ahmad, Brandon, Claire and Darren placed four identical metal cubes, P, Q, R and S, in different positions as shown in the diagram below. Cubes P and R were hung from a ceiling using wires while cubes Q and S were placed on wooden poles of the same height.

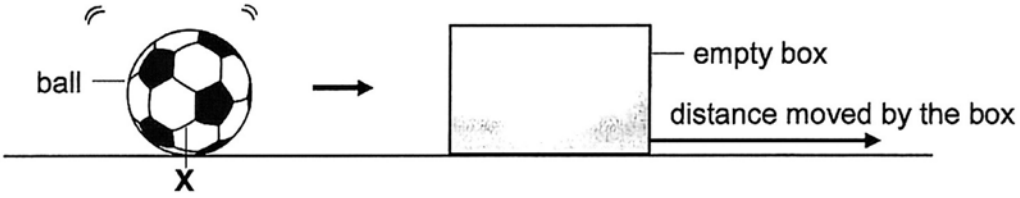


Which of the following statements made by the four pupils are true about the amount of gravitational potential energy that the four cubes have?

Ahmad	Cube P and cube Q possess same amounts of gravitational potential energy.
Brandon	Cube P possesses a greater amount of gravitational potential energy than cube R.
Claire	Cube R possesses a greater amount of gravitational potential energy than cube S
Darren	Cubes Q and S possess the same amount of gravitational potential energy.

(1) Ahmad and Brandon only
(2) Ahmad and Claire only
(3) Brandon and Darren only
(4) Claire and Darren only

20. June set up an experiment to find out how the speed of a ball affects the distance moved by an empty box.



The ball rolled from point X and hit the empty box. The distance moved by the empty box was measured and recorded in the table shown below.
The experiment was repeated, changing only the speed of the ball each time.

Speed of ball (cm/s)	Distance moved by the box (cm)
15	5
20	8
25	13
30	16

Based on the experiment above, which one of the following conclusions is correct?

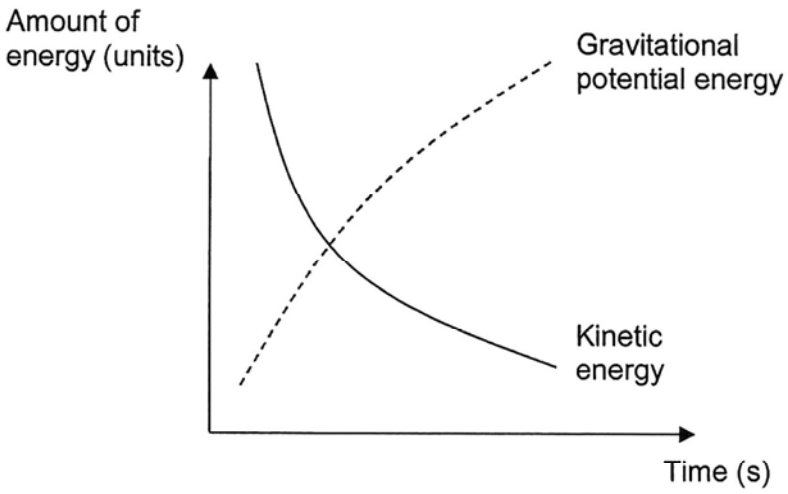
(1) The kinetic energy of the ball increases when its speed decreases.

(2) The distance moved by the box will increase if a ball of bigger mass is used.

(3) The distance moved by the box will decrease when the speed of the ball decreases.

(4) The chemical potential energy of the ball is converted into kinetic energy of the box when it hits the box.

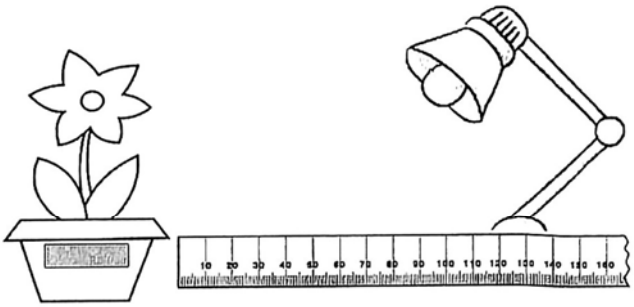
21. Study the graph below.



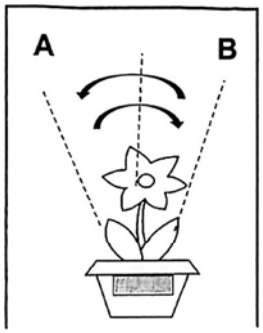
Which of the following actions would show the same energy conversions as the graph above?

(1) Apple falling from a tree.
(2) Throwing a ball upwards.
(3) Dropping a coin into a pool.
(4) Rolling a marble across a table.

22. Priscilla used a solar-powered toy flower to carry out an experiment as described in the table below.



Set-up of experiment



movement of flower

Step	Procedure
1	Place a lamp about 5 cm away from the toy flower.
2	Turn on the lamp and observe the number of rounds that the toy flower makes. In each round, the flower moves from A to B then back to A.
3	Record the number of rounds the toy flower moves in 5 minutes.
4	Repeat steps 1, 2 and 3 by placing the lamp at the 10 cm mark and 15 cm mark of the ruler.

Priscilla wrote the following changed variables and conclusions for the experiment.

	Changed variable	Conclusion
A	Distance of lamp from toy flower	The nearer the lamp to the toy flower, the faster the toy moved.
B	Distance of lamp from toy flower	When there is more electrical energy of the toy, the light is further away from the toy flower.
C	Intensity of light	Light intensity has no effect on the amount of electrical energy produced.
D	Intensity of light	The greater the light intensity, the greater the amount of electrical energy the toy has.

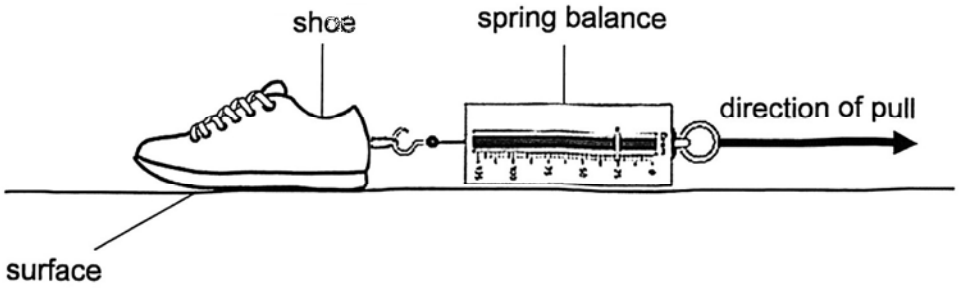
Which of the statements are possible changed variables and conclusions for her experiment?

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

23. Which of the following is **not** an example of an effect of a force?

(1) a boy dropping a ball
(2) a girl inflating a balloon
(3) a wall stopping an arrow
(4) a roof blocking the sunlight

24. Charles conducted an experiment as shown below. He hooked a spring balance onto a shoe and pulled it along the same distance on 4 different surfaces, T, U, V and W, as shown in the diagram below.



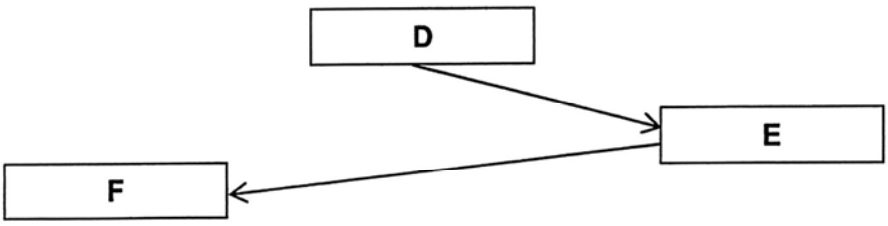
The amount of force needed to pull the shoe across the different surfaces is shown in the table below.

Type of surface	Amount of force needed (units)
T	18
U	11
V	9
W	15

Based on the information above, on which one of the surfaces is Charles most likely to slip and fall?

(1) T
(2) U
(3) V
(4) W

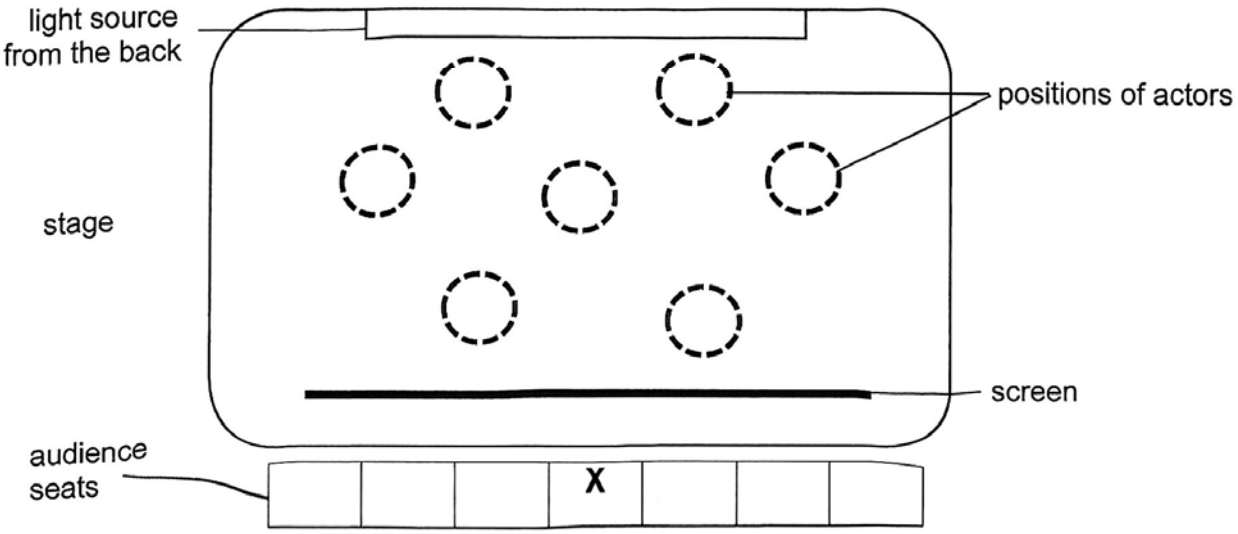
25. The diagram below shows the path of light that enabled Alex to see a ball while playing soccer at the field.



Based on the diagram above, what could D, E and F represent?

	D	E	F
(1)	Ball	Sun	Alex
(2)	Alex	Ball	Sun
(3)	Sun	Alex	Ball
(4)	Sun	Ball	Alex

26. The diagram below shows the layout of a stage for a shadow performance from the top view.

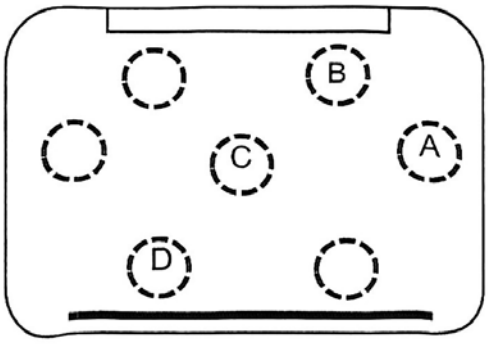


There were four actors, A, B, C and D, who were of similar height. The person seated at X saw the shadows of the actors on the screen as shown below.

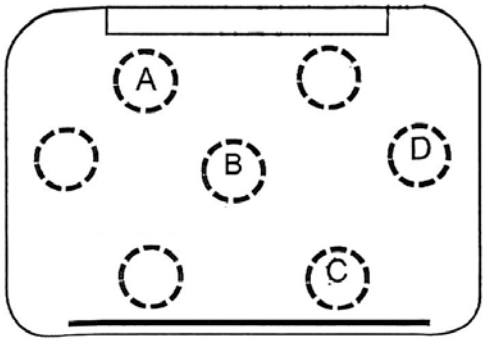
shadow of A **shadow of B** **shadow of C** **shadow of D**

Which of the following shows the most likely positions of the actors on stage?

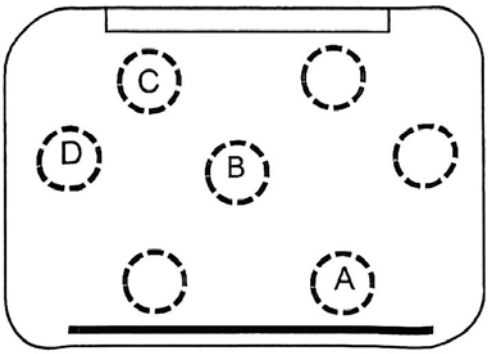
(1)



(2)



(3)



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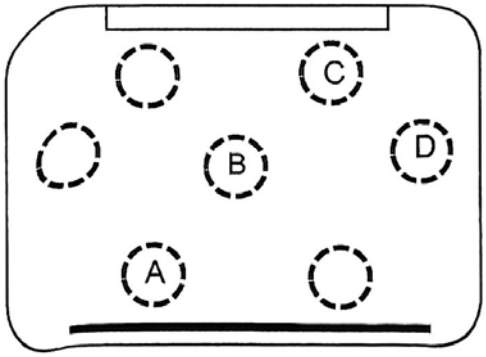
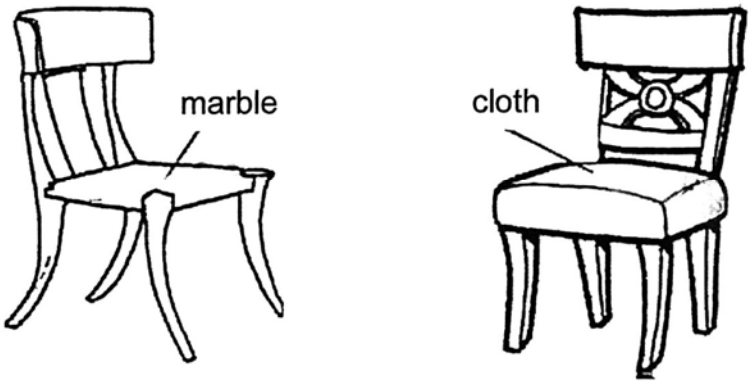


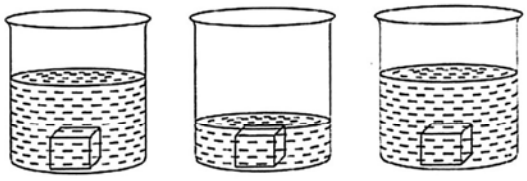
27. Grace wanted to buy a chair. She placed her hands on each of the seat below and observed that her hands felt cooler when they were on the marble chair compared to the chair made of cloth.



Which of the following is the correct explanation for Grace's observation?

(1) More heat travelled from the marble seat to the surrounding.
(2) More heat travelled from her hands to the marble than to the cloth seat.
(3) More heat travelled from the cloth to her hands as it is a better conductor of heat.
(4) More heat travelled from the marble to her hands as it is a poor conductor of heat.

28. Arturo poured different amounts of water at different temperatures into each of the 3 identical beakers, P, Q and R, as shown in the diagram below. He then placed an ice cube of the same size into each beaker at the same time.



Beaker P	Beaker Q	Beaker R
100 ml	50 ml	100 ml
10°C	80°C	80°C

Arturo measured the time taken for the whole ice cube to melt completely in the water. Arrange the beakers in order of the amount of time taken to melt the whole ice cube, starting with the shortest amount of time.

	Shortest time ⟶		Longest time
(1)	P	Q	R
(2)	Q	R	P
(3)	R	P	Q
(4)	R	Q	P

~ END OF BOOKLET A ~

NANYANG PRIMARY SCHOOL

2024
PRIMARY 6
MID-YEAR PRACTICE PAPER

SCIENCE
(BOOKLET B)

Total Time for Booklets A and B: 1 h 45 min

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the space provided.
2. Do not open this booklet until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write your answers to Questions 29 to 40 in the spaces provided.

Booklet A:		56
Booklet B:		44
Total:		100

Name: _____ ( )

Class: Primary 6 ( )

Parent's signature: _____

Booklet B consists of 15 printed pages including this cover page.

Section B: Open-Ended Questions [44 marks]

29. A plant grows in the desert and has white flowers that are visited only by a type of moth. The moth brings along pollen when it visits the flower. It then lays its eggs in the ovary of the flower which contains hundreds of ovules. When the eggs hatch, the young feed on a small portion of the seeds.

(a) Describe how the plant and the moth benefit from their interactions. [2]

(i) Benefit for the plant: _____

_____

_____

(ii) Benefit for the moth: _____

_____

_____

It is observed that the moth will leave a scent on the flower after it has laid its eggs. After that, no other moths will lay its eggs in the same flower.

(b) How does this interaction between the moth and the flower affect other moths of the same type? [1]

_____

_____

30. Study the following food chains carefully. They show the food relationships of organisms living in one habitat.

- Plant → squirrel → python
- Plant → caterpillar → toad → python
- Plant → millipede → centipede → toad → python

(a) Construct one food web in the space provided based on the 3 food chains above. [2]

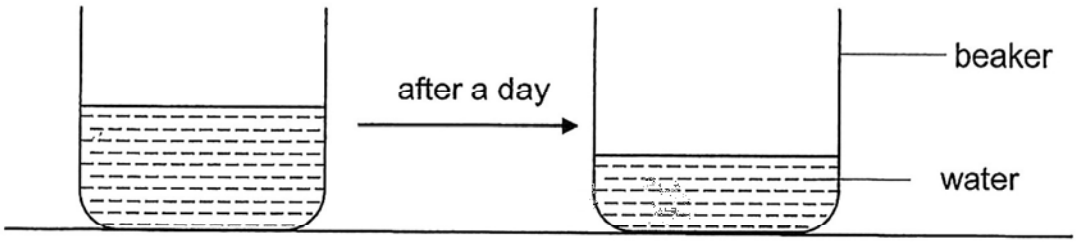
plant

(b) How would the squirrel population be affected immediately and after a period of time if the number of pythons were to decrease? Explain your answer. [2]

(i) Immediate effect:

(ii) After some time:

31. The diagram below shows a beaker of water left under the sun for a day. The amount of water became less after a day.



(a) State the process which had caused the decrease in the water level. [1]

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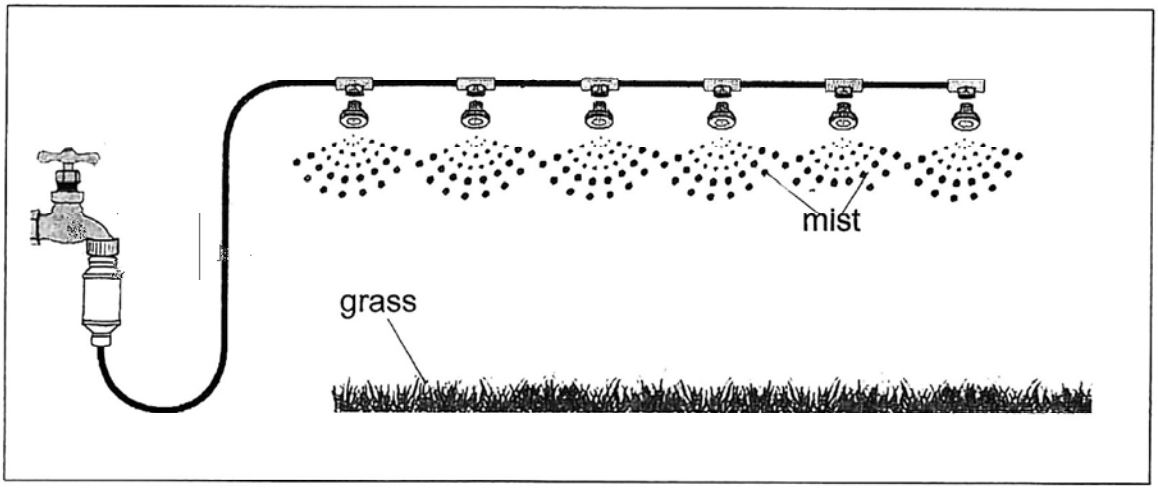
The diagram below shows a mist system which is used to water the plants in an indoor garden. Tiny water droplets are produced in the form of mist. The system also lowers the temperature of the surrounding air in the indoor garden.



(b) Explain how such a system can help to lower the temperature of the surrounding air on hot days. [2]

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_____

_____

_____

32. Mr Koh placed five identical fruits, A, B, C, D and E, in rooms of different temperatures and measured the time taken for each fruit to split. The results of his experiment are shown below.

	Temperature (^{0}C)				
	20	**25**	**30**	**35**	**40**
Fruit	**A**	**B**	**C**	**D**	**E**
Time taken to split (hrs)	Did not split	24	10	5	1

(a) Based on the results above, state the relationship between the temperature and the time taken for the fruit to split. [1]

_____

_____

(b) Give a reason why Mr Koh used identical fruits in the experiment. [1]

_____

_____

Mr Koh observed that Fruit E split with the greatest force and dispersed the seeds the furthest away.

(c) State an advantage of dispersing the seeds far away from the parent plant. [1]

_____

_____

(d) State one characteristic of a fruit that disperses its seeds by splitting. [1]

_____

_____

33. Figure 1 below shows the cut-section of a stem and insect A feeding on it. This insect inserts its long and pointed mouthpart into the stem to obtain nutrition.

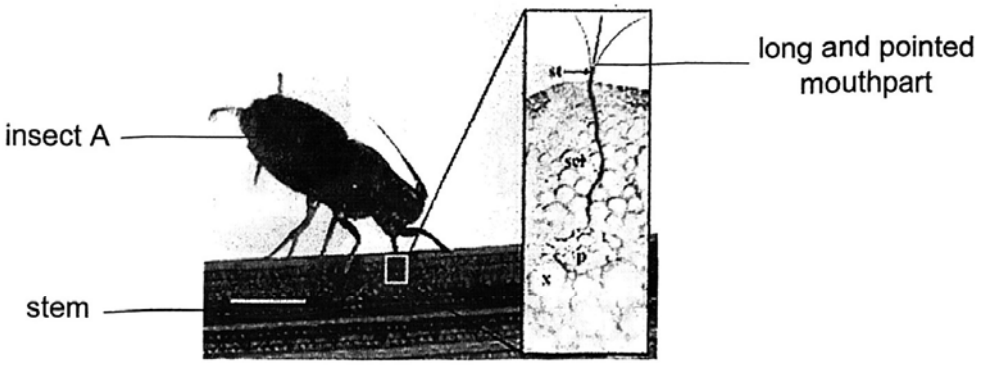

Figure 1

(a) State the part in the stem of the plant which insect A obtains its nutrition from. [1]

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_____

While obtaining its nutrition, insect A is known to inject a harmful liquid into the stem of the plant. Figure 2 below shows the leaf of the plant turning white after being infested by insect A.

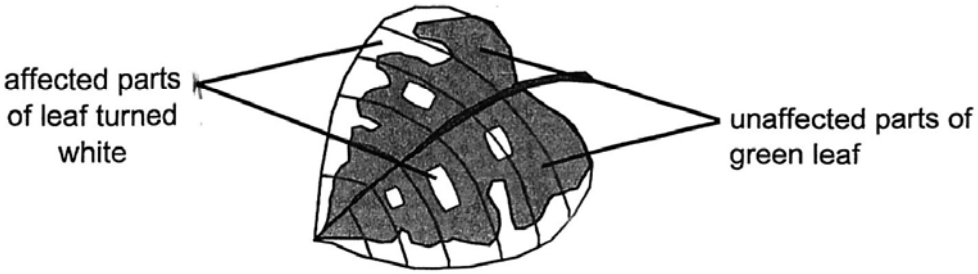


Figure 2

(b) Based on figure 2, state which part of the leaf cell was damaged by the liquid to cause the change from green to white. [1]

_____

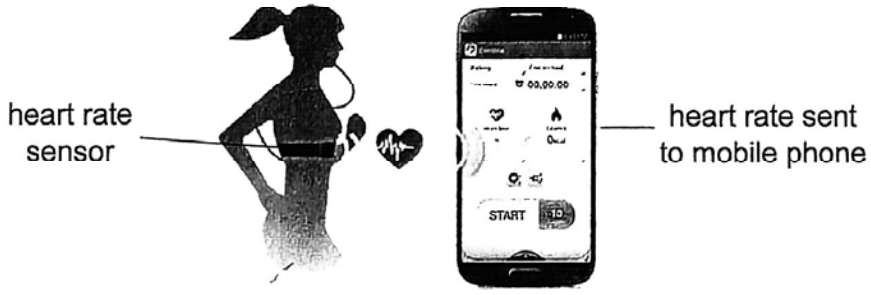
_____

(c) Explain how the plant might eventually die if it continues to be infested by insect A. [1]

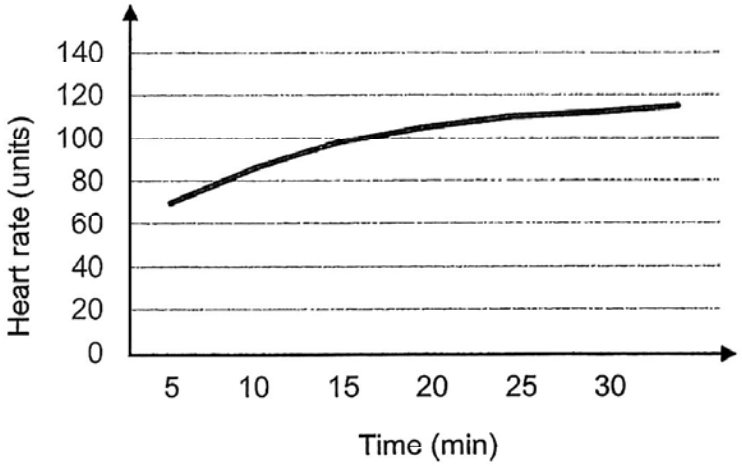
_____

_____

34. The diagram below shows Peifen wearing her heart rate sensor while she is jogging. The sensor detects her heart rate and sends the data to her mobile phone.



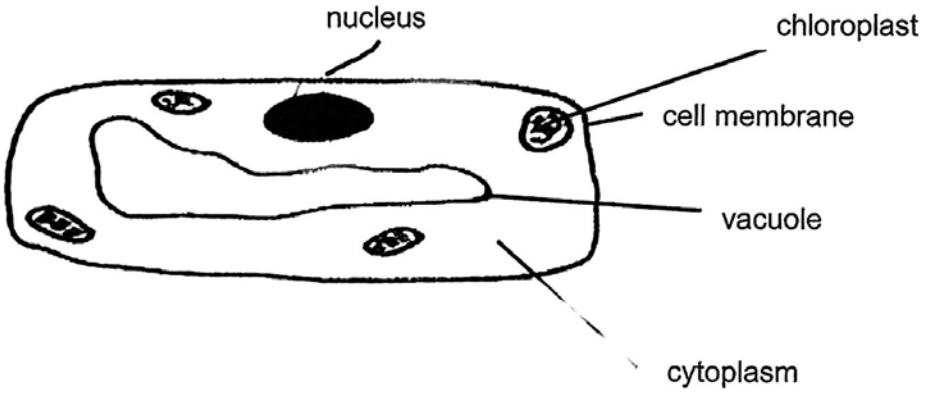
Her heart rate during her 30-minute jog is shown in the graph below.



(a) State the function of the heart in the circulatory system. [1]

(b) Describe the change in her heart rate and explain why it has to change with time during exercise as shown in the graph above. [2]

35. Qi Qi tried to draw a cell as shown below but she missed drawing one part of the cell.



(a) **Draw** the missing part of the cell for her and **label** it. [1]

(b) State 2 other characteristics of the cell above that enables Qi Qi to identify and draw the missing part in (a). [1]

_____

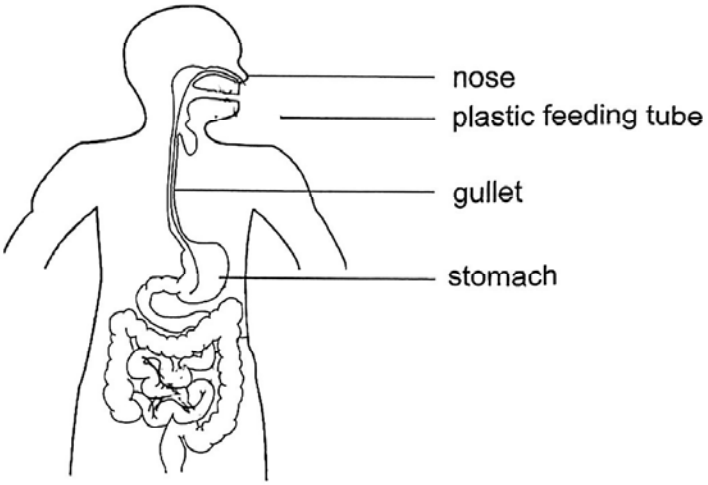
_____

(c) State the function of the nucleus. [1]

_____

_____

36. The diagram below shows a patient who was not able to chew after a jaw surgery. A plastic tube was inserted through the nose and gullet into the stomach directly. Nutritional drinks, that still needed to be digested, were then poured through the opening of the tube into the stomach once every few hours.



(a) In the diagram above, **put a cross (X)** at the part of the human digestive system where the digestion of food was skipped in this method of feeding. [1]

(b) Explain how the patient was still able to obtain his nutrients using this method of feeding. [2]

37. Muthu made a toy car as shown in diagram 1 below. He wanted to find out how the distance the car is pulled backwards affects the distance it travels forwards after being released.

The car has to be pulled backwards before being released in order for it to move forward, as shown in diagram 2 below.

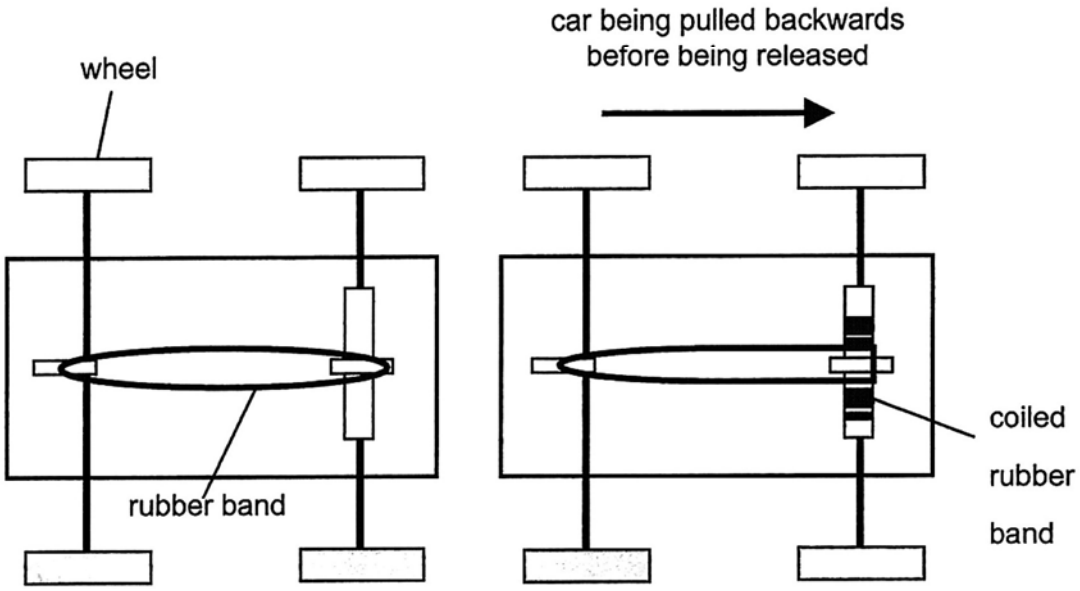


Diagram 1

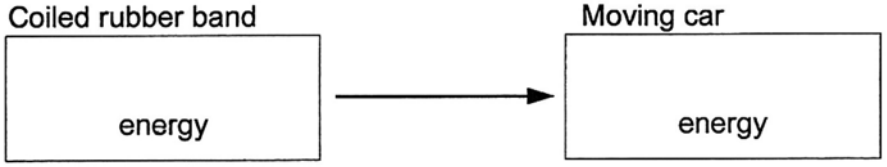
(Top view of toy car)

Diagram 2

(Top view of toy car)

(a) State a hypothesis on how the distance the car is pulled backwards affects the distance travelled by the car after being released. [1]

(b) Fill in the boxes below to show the main energy conversion taking place in the car as Muthu moves the car backwards before releasing it. [1]



(c) Explain, in terms of energy, why the car stopped after some time. [1]

Muthu moved the car backwards, released it and measured the distance the car travelled from the point of release, as shown in the table below.

Distance the car was moved backwards before being released (cm)	**Distance the car moved forwards from the point of release (cm)**
10	8
20	13
30	**X**
40	19
50	0

(d) Suggest a possible value for 'X' when the car was pulled backwards a distance of 30 cm before being released. [1]

_____

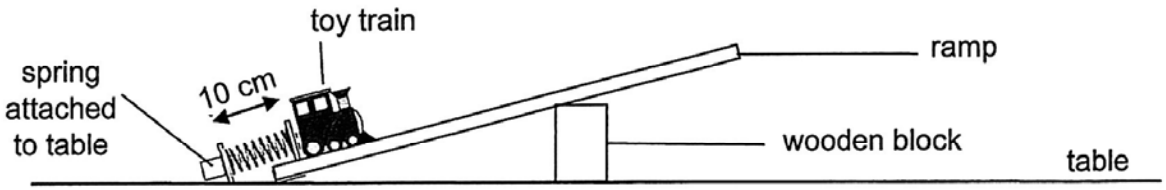
(e) Explain why the distance that the car moved forward after being released became 0 cm when the distance it was moved backwards before being released was 50 cm. [1]

_____

_____

38. (a) What is a force? [1]

Joe set up an experiment with a coil of spring attached to the table, a ramp, a wooden block and a toy train. The original length of the spring is 10 cm.



Joe compressed the spring to different lengths, released it and measured the distance the toy train moved up the ramp just before it slid backwards down the ramp.

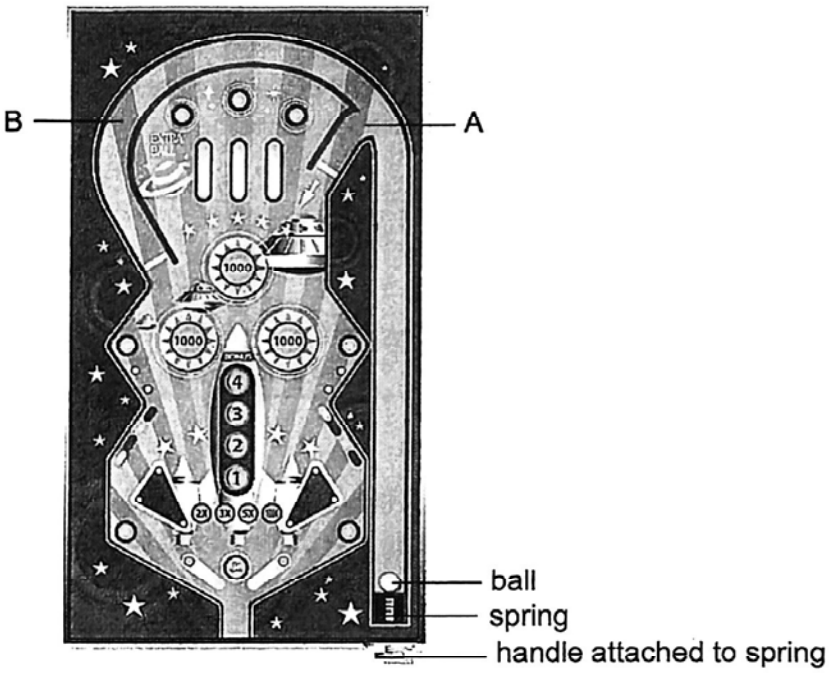
The results were shown in the table below.

Length of compressed spring (cm)	Distance toy train moved up the ramp (cm)
8	4
6	7
4	9
2	10

(b) What is the relationship between the length of the compressed spring and the distance the toy train moved up the ramp? [1]

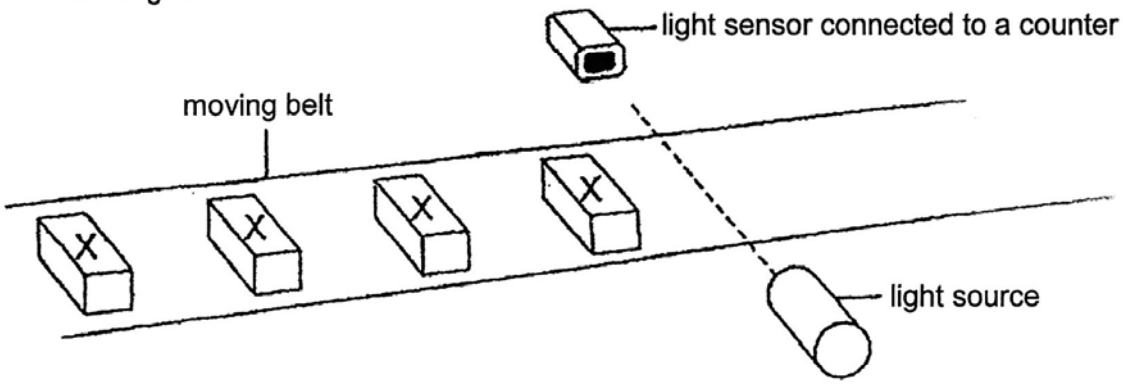
(c) Joe applied a layer of lubricant on the surface of the ramp to increase the distance the toy train moves up the ramp. Explain, in terms of forces, how this method works. [1]

The diagram below shows a pinball game machine. A ball in the slot is launched into the game after the player pulls and releases the handle that is attached to a spring. The surface of the game machine is covered by a clear, plastic cover.

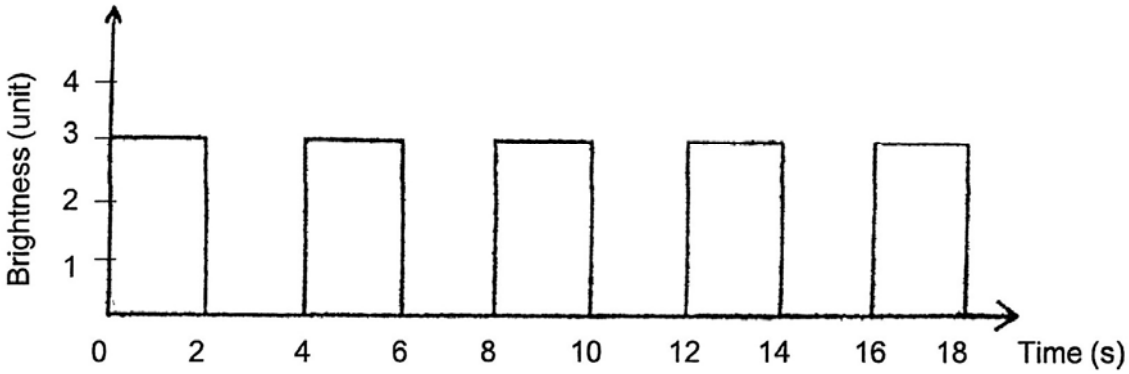


(d) Based on the results from the experiment, what should Joe do to launch the ball so that it will reach point B instead of point A? Explain your answer in terms of forces. [2]

39. The set-up below uses a light sensor to count the number of identical object X on a moving belt.



The belt moves at a constant speed. When an object X is between the light source and sensor, it blocks the light from reaching the sensor. The data recorded is shown in the graph below.



(a) Based on the graph, how much light is given out by the light source? [1]

_____

(b) Which property of light is being demonstrated by the set-up above? [1]

_____

Object Y is made of a material that allows **most** light to pass through.

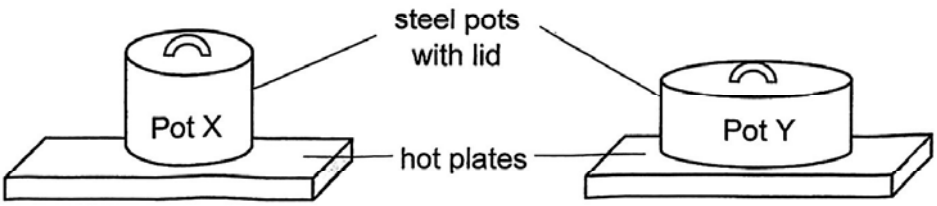
(c) Can this set-up be used to count the number of object Y? Explain your answer. [2]

_____

_____

_____

40. At the start of an experiment, Sharon placed 2 steel pots of different widths, X and Y, on identical hot plates as shown in the diagram below. She then poured the same amount of water, at the same temperature, into each pot and turned on the hot plates.



After 5 minutes, the water in one of the pots started boiling first.

(a) In which pot, X or Y, did the water start boiling first? Explain your answer. [2]

_____

_____

_____

At a party, Sharon placed some bottled drinks into a container filled with ice cubes as shown in Figure 1. However, she realised that the bottled drinks took a long time to chill. Sharon's friend suggested that she added some water into the container of ice as shown in Figure 2.

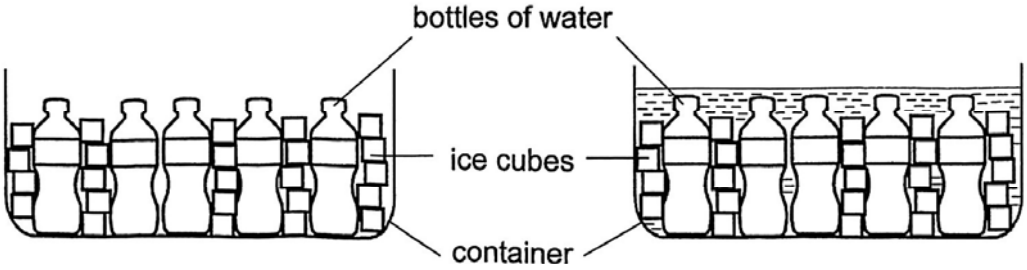


Figure 1 Figure 2

(b) Explain how adding water into the container of ice would help to chill the bottled drinks faster. [2]

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~ END OF BOOKLET B ~

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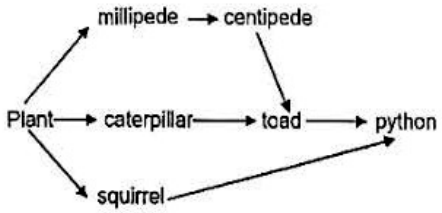
Nanyang Primary School P6 SCIENCE MYP 2024 Suggested Answers

1	2	6	4	11	4	16	3	21	2	26	4
2	4	7	1	12	2	17	1	22	1	27	2
3	3	8	2	13	1	18	4	23	4	28	4
4	4	9	2	14	3	19	4	24	3		
5	3	10	2	15	3	20	3	25	4		

Qn.	Acceptable Answers
29ai	The moth pollinates the flower of the plant.
29aii	The moth's young would have food when it hatches./ The young would have a place to grow./The young or eggs would have shelter/ protection.
29b	Other moths would have less place to lay their eggs./ Other moths have to find other flowers to lay their eggs.
30a	
30b.	**Immediate effect :** The population of squirrel will increase/ remain the same as there are less predators. **After some time:** The population of squirrel will decrease as there is more competition for food / as more squirrels consume more plant/food resulting in insufficient food. **OR** Population of squirrel will increase as there are less pythons /predators feeding it. There will be an increase in the population of toad causing the population of caterpillar to decrease. So there is less competition for food (2 animals instead of 3 feeding on the plant).
31a.	Evaporation
31b.	The mist gains heat from the surrounding hot air (1m) and evaporates (1m) **OR** The surrounding hot air loses heat to the mist (1m) which will evaporate (1m)
32a.	As the temperature increases, the time taken for the fruit to split decreases.
32b.	To ensure that only the temperature of the room affects the results of the experiment.
32c.	To reduce overcrowding and reduce the competition for mineral salts /nutrients, water and sunlight.
32d.	The fruit has pod-like structure.
33a.	Food-carrying tubes / phloem
33b.	The chloroplasts /chlorophyll was damaged.
33c.	The leaves cannot photosynthesise/ The leaves cannot trap light to make food.
34a.	The heart pumps blood to all parts of the body
34b.	Her heart rate increases. Her heart pumped blood faster/ more blood to transport oxygen and digested food to the different parts of her body and to remove carbon dioxide/ waste materials.

35a.	
35b.	The presence of chloroplasts/ the regular shape of the cell/ the presence of a vacuole.
35c	The nucleus controls all the cell activities/ contains genetic information/ controls cell division.
36a.	
36b.	Digestion of the nutritional drink is carried out in the stomach and small intestine. The digested food gets absorbed by the small intestine into the bloodstream.
37a.	As the distance the car is pulled backwards increases, the distance travelled by the car after it is released increases / decreases / remains the same.
37b.	(Elastic) Potential Energy ➡ Kinetic Energy
37c.	All the kinetic energy had been converted to heat and/or sound energy.
37d.	13 < **X** < 19
37e.	The rubber band had snapped / broke/ gone beyond its elastic limit.
38a.	A force is a push or a pull.
38b.	As the length of the compressed spring decreases, the distance the toy train moved up the ramp increases.
38c.	The lubricant would reduce the amount of frictional force between the toy train and the ramp.
38d.	He should pull down the handle more to compress the spring more so that the spring will exert more elastic spring force to launch the ball to position B.
39a.	3 units
39b.	Light travels in a straight line **OR** Light can be blocked.
39c.	No. Object Y cannot block light/ allowed most light to pass through. The sensor can detect light passing through the object. **OR** Yes. Some light is still being blocked by object Y so the light sensor can detect the difference in light / less light that passed through.
40a.	Choice – Pot Y Data – Pot Y has a larger surface area in contact with the hotplate. Explain – Pot Y gains heat from hotplate faster / gains more heat.
40b.	Water loses heat to the ice cubes. There is more surface area of cool water in contact with bottles so the bottles of water/ bottled drinks lose heat faster/ lose more heat.