NANYANG PRIMARY SCHOOL

PRIMARY 6 SCIENCE

SEMESTRAL ASSESSMENT 1
2018

BOOKLET A

Date : 8 May 2018
Duration : 1 h 45 min

Name : _____ ( )

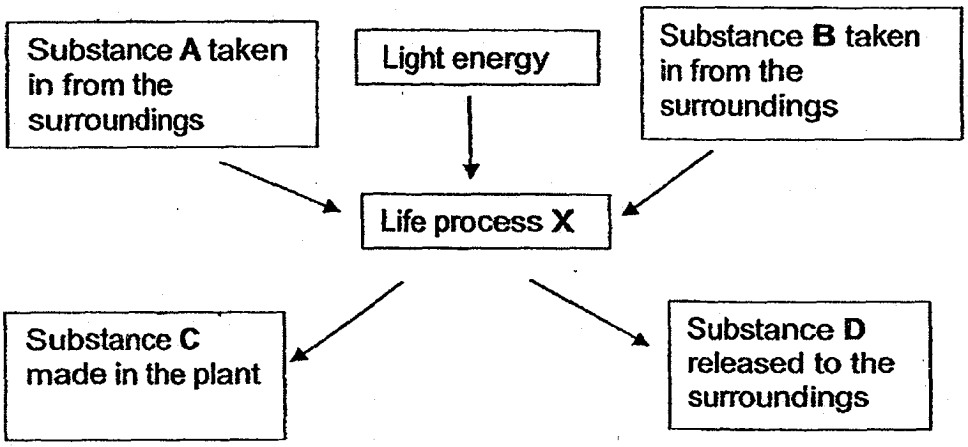
Class: Primary 6 ( )

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.

Booklet A consists of 24 printed pages including this cover page.

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.**

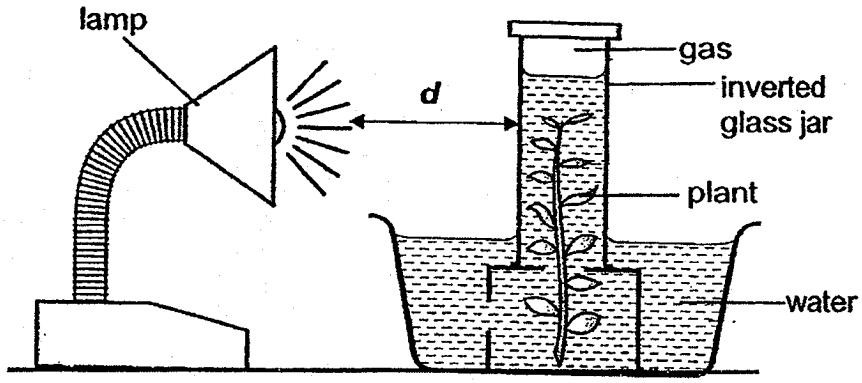
1. The diagram below shows a life process, X, that takes place in plants.



Which one of the following correctly identifies A, B, C and D?

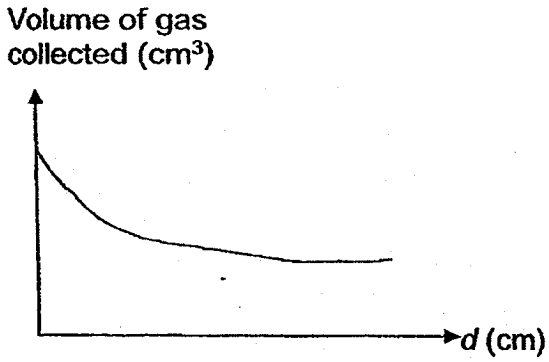
	A	B	C	D
(1)	carbon dioxide	water	food	oxygen
(2)	carbon dioxide	oxygen	food	water
(3)	oxygen	carbon dioxide	water	food
(4)	oxygen	water	food	carbon dioxide

2. 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 : distance of light source from the plant

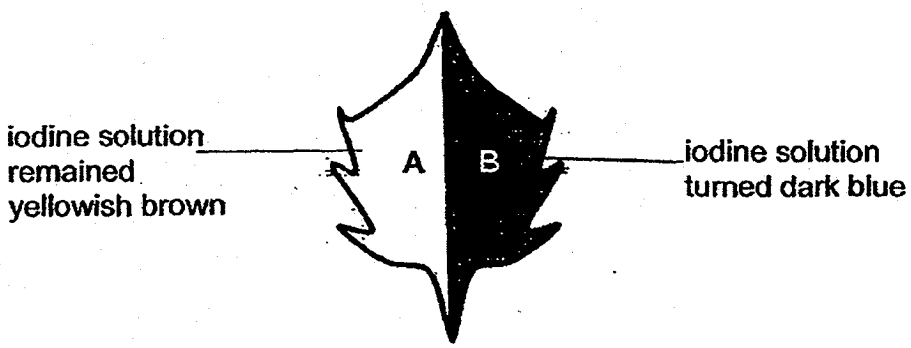
The results from the experiment were used to plot the graph below.



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

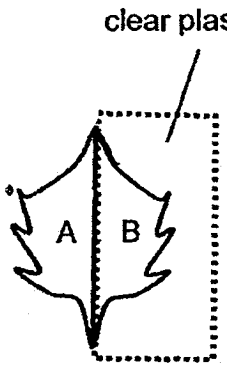
(1) To find out if light is required for photosynthesis.
(2) To find out if oxygen is released during photosynthesis.
(3) To find out how water affects the rate of photosynthesis.
(4) To find out how light intensity affects the rate of photosynthesis.

3. A de-starched plant was used for the following experiment. A leaf from the plant was partly covered by an object before the plant was placed under the sun for 3 days. The leaf was then tested for the presence of starch using iodine solution. The results are shown in the diagram below.



Which one of the following correctly shows what the leaf was most likely covered with for the 3 days before it was tested for the presence of starch?

(1)



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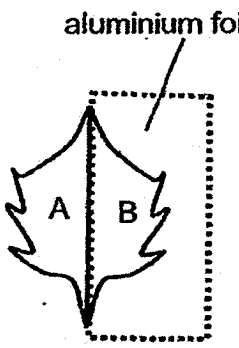

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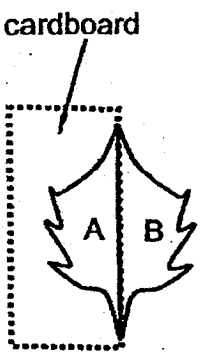

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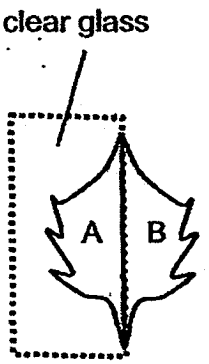


4. The table below shows the conditions of four different habitats, A, B, C and D.

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

Elva 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

5. A group of pupils listed the animals and plants they found in a field community and recorded the data in the table below.

Animals	Number	Plants	Number
ants	15	rain trees	4
spiders	1	angsana trees	2
butterflies	3	bird's nest ferns	3
caterpillars	6		
grasshoppers	2		
grasshopper nymphs	3		

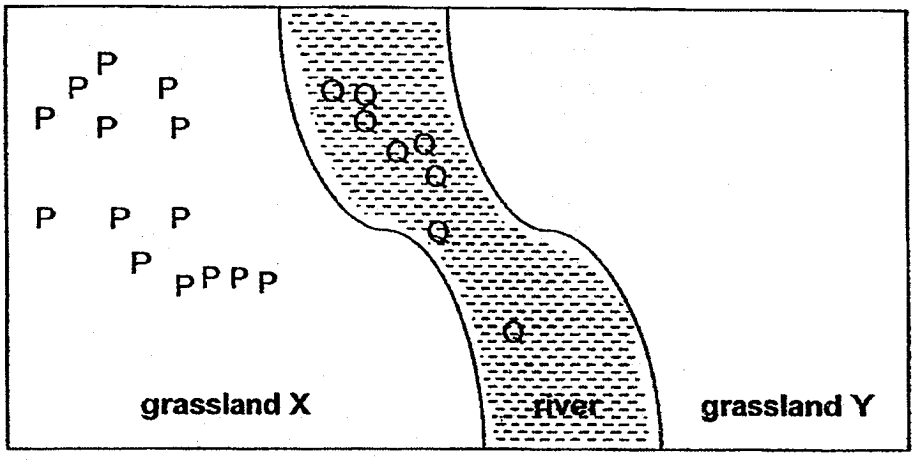
Based on the table above, which of the following statement(s) is/are true about this community?

A There are fifteen ant populations.
B There are three plant populations.
C There are nine populations in total.

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

6. The diagram below shows a river separating grasslands X and Y.

For many years, animal P, a plant-eater, lived on grassland X. Animal Q lived in the river and would feed on animal P when it drank from the river.



In 2017, animal P moved over to grassland Y even though many of them were eaten by animal Q when they crossed the river.

Which of the following are possible reasons for animal P to move to grassland Y?

A Fire broke out at grassland X.
B Population of animal Q increased.
C There was no more food for animal P at grassland X.
D New predators of animal P were introduced on grassland X.

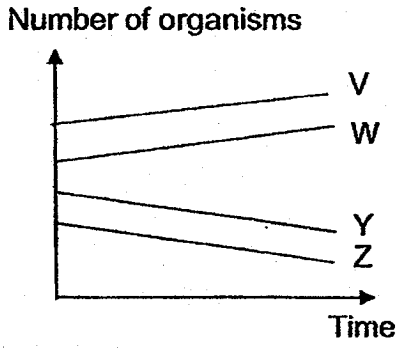
(1) B and C only
(2) A, B and D only
(3) A, C and D only
(4) A, B, C and D

7. 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)



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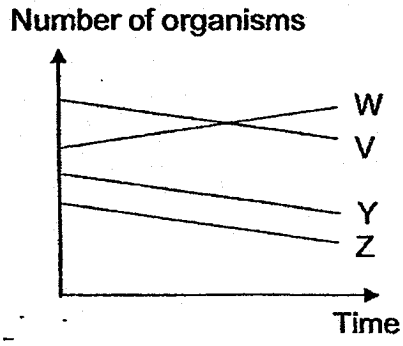

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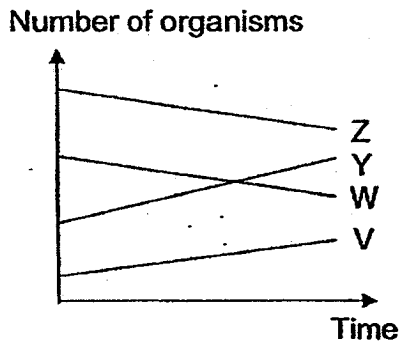

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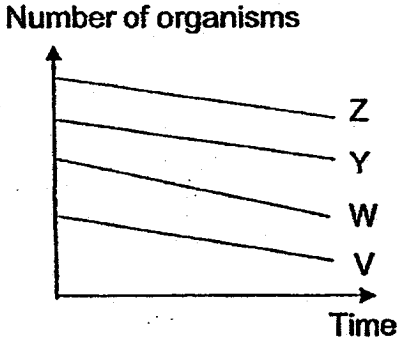
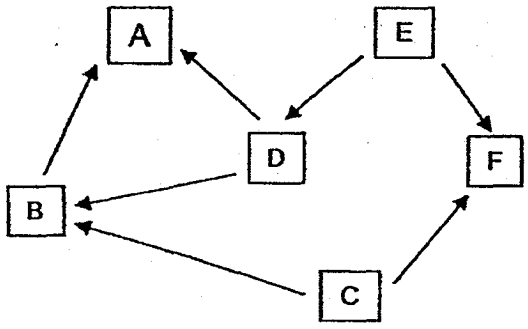


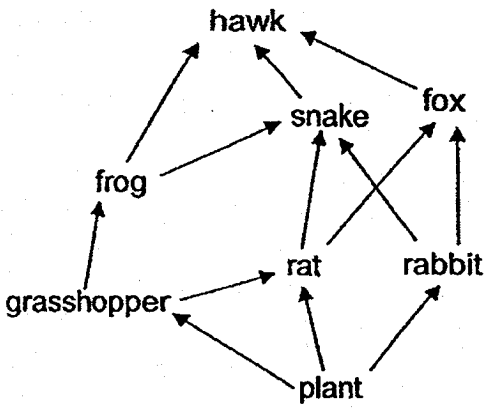
8. The food web below shows the food relationships between organisms A, B, C, D, E and F.



Which one of the following classifications is correct?

	Food producer	Both a prey and a predator
(1)	A	F
(2)	C, E	B, D
(3)	A, E	D, F
(4)	C, E	B

9. The diagram below shows a food web.



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

A The population of plants would decrease as there is one less plant-eater.

B The population of grasshoppers would increase as there are less predators feeding on it.

C The population of foxes would be affected more than the populations of snakes because foxes have less food sources.

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

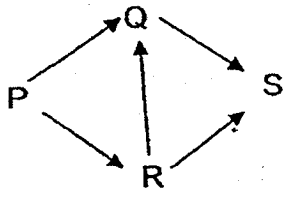
10. Benjamin conducted three experiments on food relationships in a community consisting of a plant, P, and three populations of consumers, Q, R and S. Food was available for each organism in each experiment.

He set up the experiments for one week and recorded his observations in the table as shown below.

Experiment	Organisms	Population size at the end of the experiment
1	P	decreases
	Q	remains the same
	R	decreases
2	P	decreases
	R	decreases
	S	remains the same
3	P	decreases
	Q	remains the same
	S	decreases

Based on the above results, which one of the following shows a possible food relationship between organisms P, Q, R and S?

(1)



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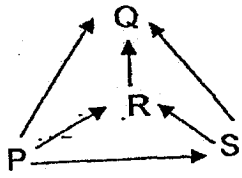
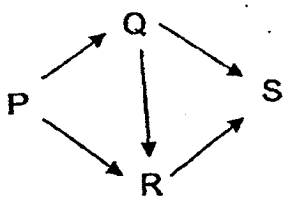


(3)



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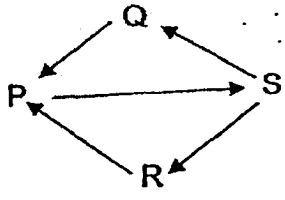
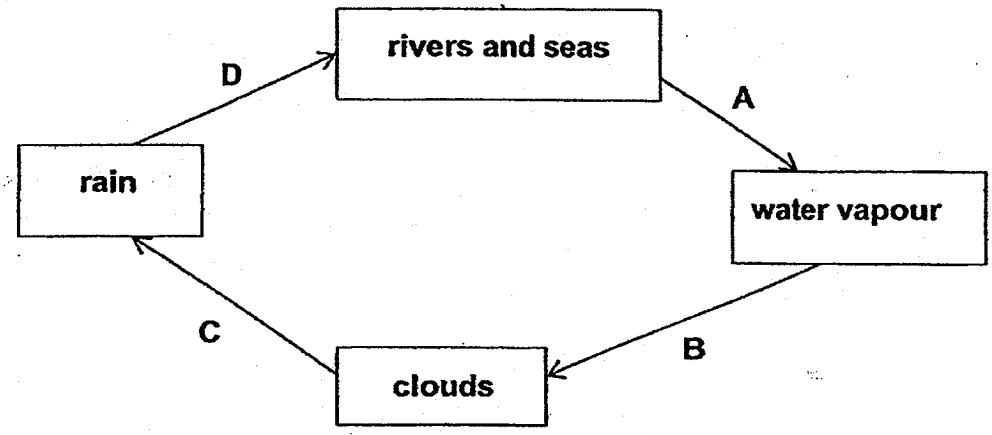


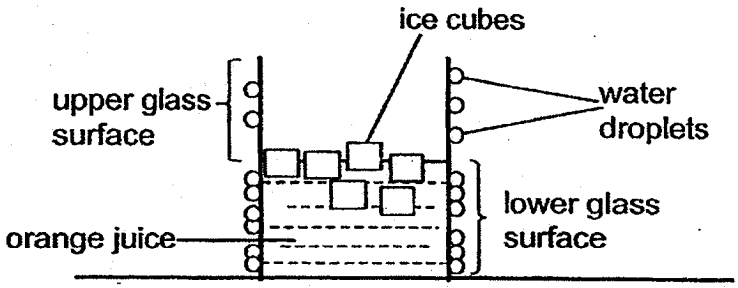
11. The diagram below represents the water cycle.



Which of the following letters, A, B, C or D, represent processes that involve a change of state?

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

12. Bala put a few ice cubes into a glass of orange juice as shown below.



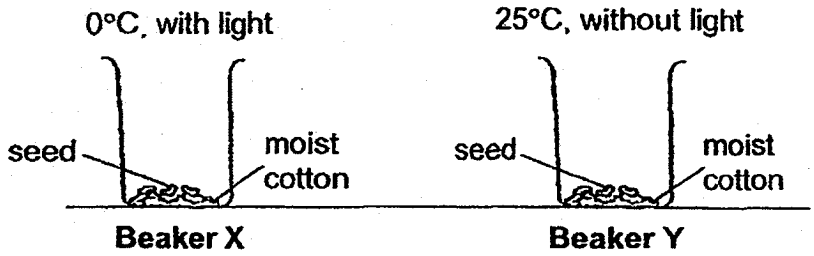
After a few minutes, Bala observed that there were more water droplets on the lower glass surface than the upper glass surface.

Which of the following reason(s) correctly explain(s) Bala's observation?

A The upper glass surface lost more heat to the ice cubes than the lower glass surface.
B The temperature of the lower glass surface was lower than the temperature of the upper glass surface.
C The lower glass surface lost more heat to the water vapour in the surroundings than the upper glass surface.

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

13. 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.

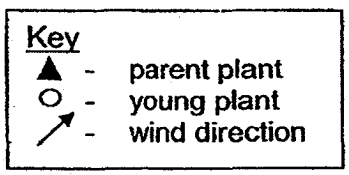


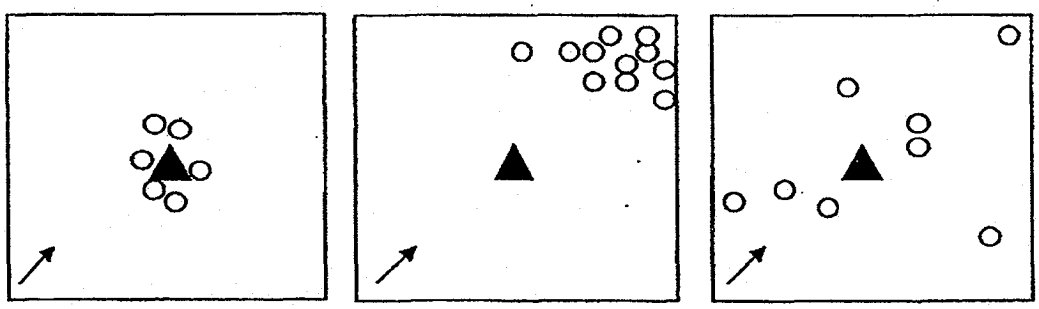
Which of the following are correct?

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

14. Seeds of three different types of plants, P, Q and R, were dispersed on land. The seeds germinated and grew into young plants after two months as shown below.





Which one of the following are the likely characteristics of the fruits/seeds of the plants?

	Plant P	Plant Q	Plant R
(1)	small and light	has hooks	juicy flesh
(2)	splits open when ripe	fibrous husk	wing-like structure
(3)	pod-like	wing-like structure	has hooks
(4)	juicy flesh	small and light	pod-like

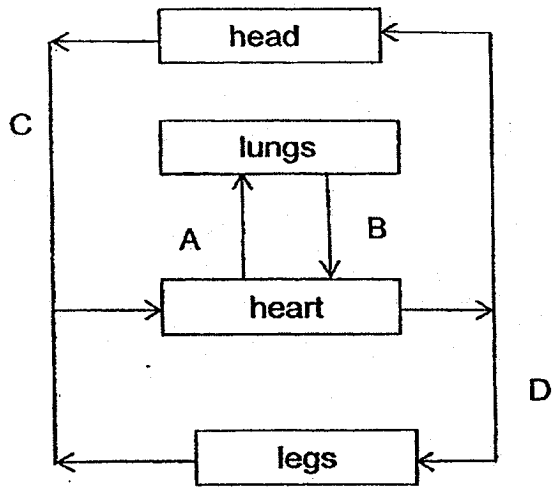
15. Lily compared the characteristics of a fish and a plant as shown in the table below.

	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

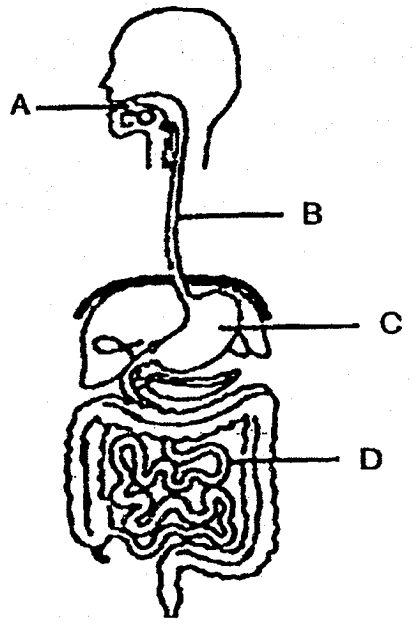
16. The diagram below represents the flow of blood in the human circulatory system.



Which one of the following correctly matches the amount of oxygen in the blood at A, B, C and D?

	High amount of oxygen	Low amount of oxygen
(1)	A and B	C and D
(2)	A and D	B and C
(3)	B and D	A and C
(4)	B and C	A and D

17. The diagram below represents the human digestive system.



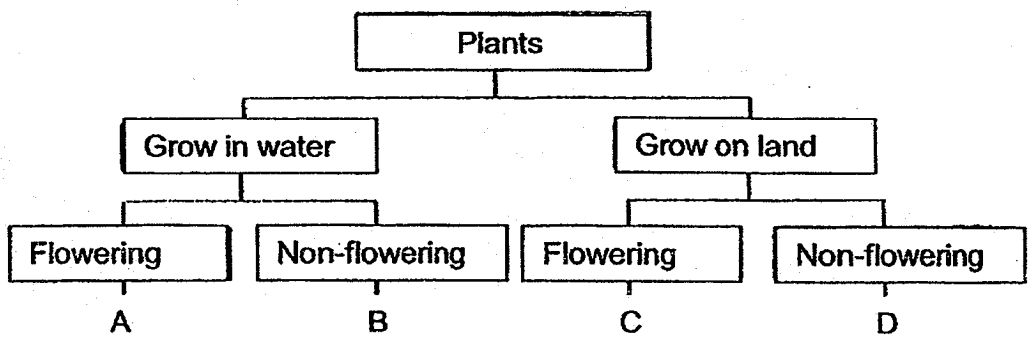
Which of the following correctly shows the changes in the amount of **undigested** food when it leaves parts A, B, C and D?

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

18. The following table shows some characteristics of two plants, M and N.

	Plant M	Plant N
Does it grow on land?	Yes	No
Does it bear fruit?	Yes	No

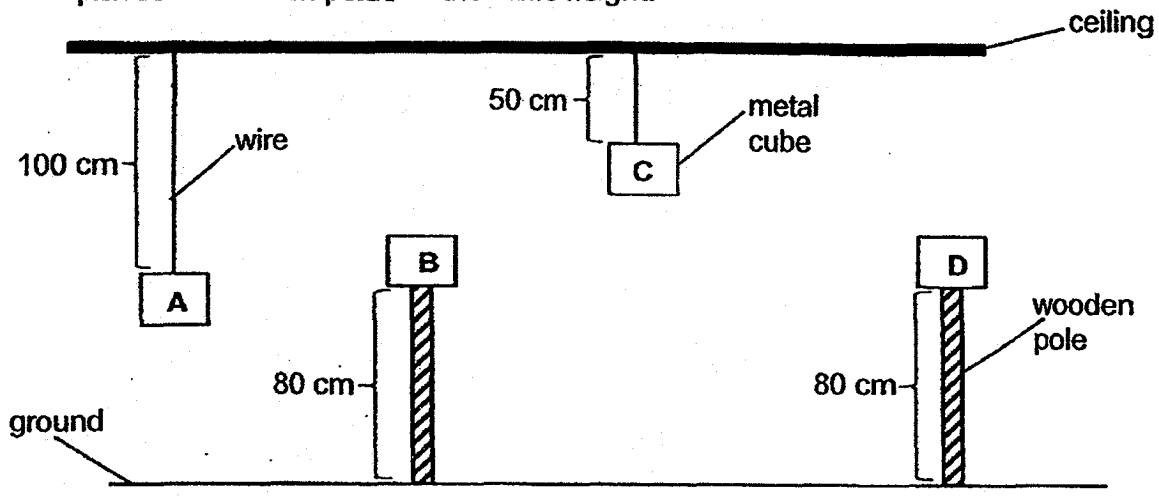
The information above was used to classify Plants M and N in the chart below.



Which letters, A, B, C or D, best represent Plants M and N?

	Plant M	Plant N
(1)	A	D
(2)	B	C
(3)	C	B
(4)	D	A

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

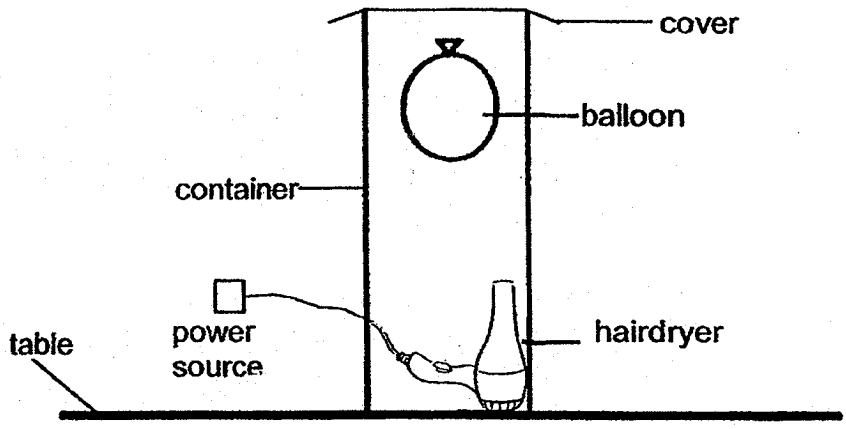


Which of the following statements made by the four pupils are true about the amount of gravitational potential energy that the four cubes have?

Ahmad	Cube A and cube B possess different amounts of gravitational potential energy.
Brandon	Cube A possesses a greater amount of gravitational potential energy than cube C.
Claire	Cube C possesses a greater amount of gravitational potential energy than cube D
Darren	Cubes B and D 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. A hair dryer was used to push up a balloon and to keep it moving in the container as shown below.



Which one of the following best describes the energy conversion taking place during the experiment?

	Hair dryer (switched on)		**Hot air from hairdryer**		**Balloon moving in the air**
(1)	Chemical Potential Energy	→	Heat Energy	→	Kinetic Energy + Gravitational Potential Energy
(2)	Electrical Energy	→	Sound Energy	→	Kinetic Energy + Gravitational Potential Energy
(3)	Chemical Potential Energy	→	Kinetic Energy	→	Kinetic Energy + Gravitational Potential Energy
(4)	Electrical Energy	→	Kinetic Energy	→	Kinetic Energy + Gravitational Potential Energy

21. 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?

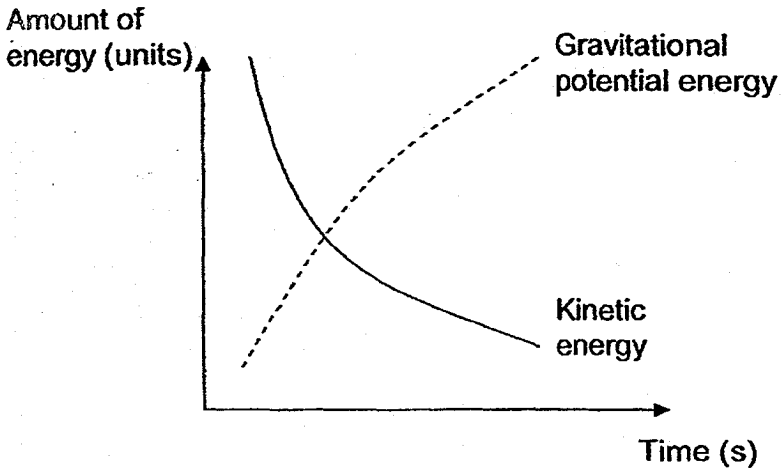
(1) The kinetic energy of the ball increases when its speed decreases.

(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.

22. Study the graph below.



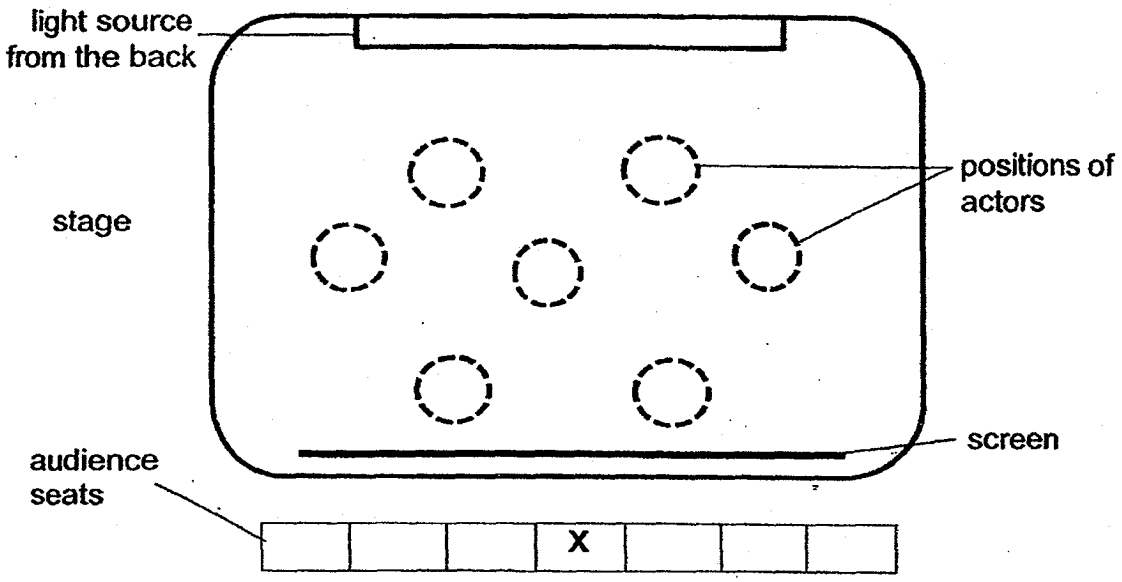
Which of the following actions would show the same energy conversions as the graph above?

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

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

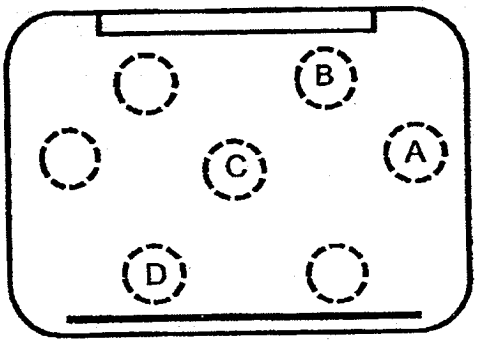


There were four actors, A, B, C and D, who were of similar height. The person seated at X saw the shadows of the actors on the screen as shown below.

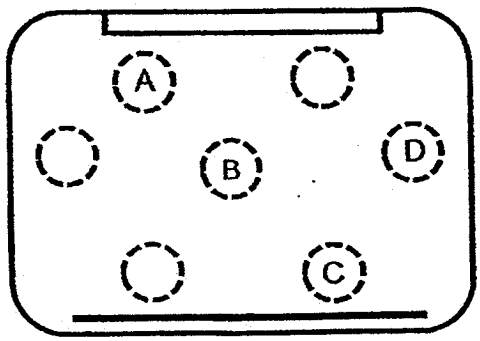
shadow of A **shadow of B** **shadow of C** **shadow of D**

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

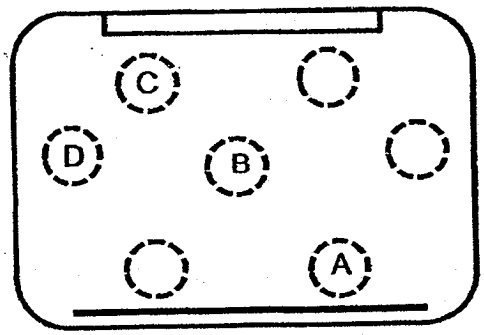
(1)



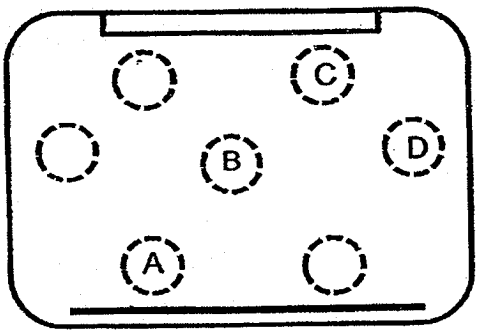
(2)



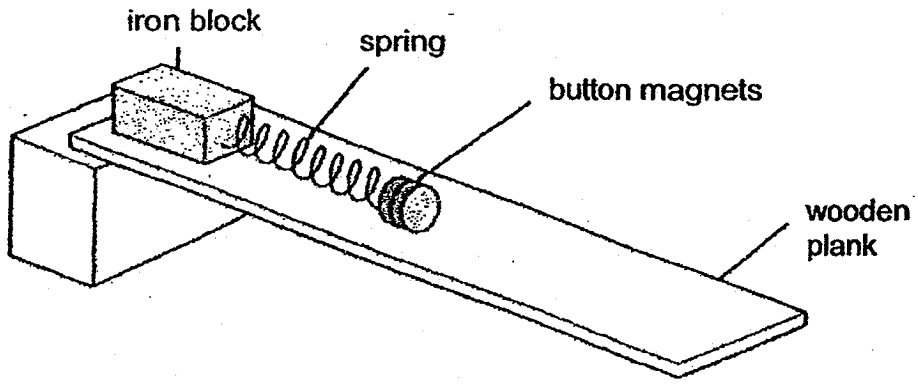
(3)



(4)



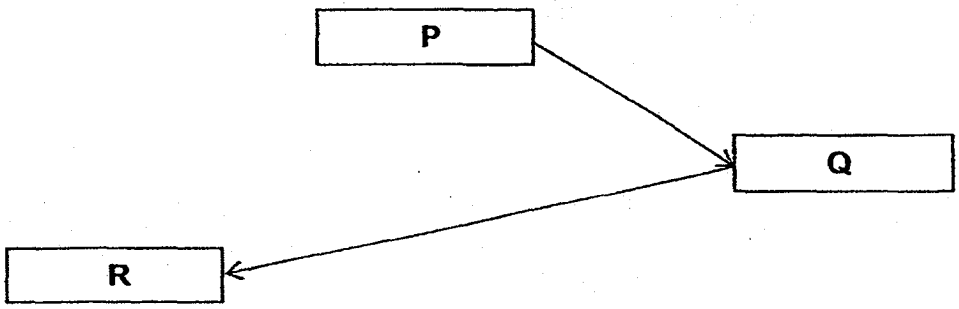
25. An iron block is attached to an elastic spring with two button magnets. It is then placed on the top end of a wooden plank as shown in the diagram below. The iron block remained stationary at the top of the wooden plank.



Which force could have stopped the iron block from sliding down the wooden plank?

(1) Magnetic force
(2) Frictional force
(3) Gravitational force
(4) Elastic spring force

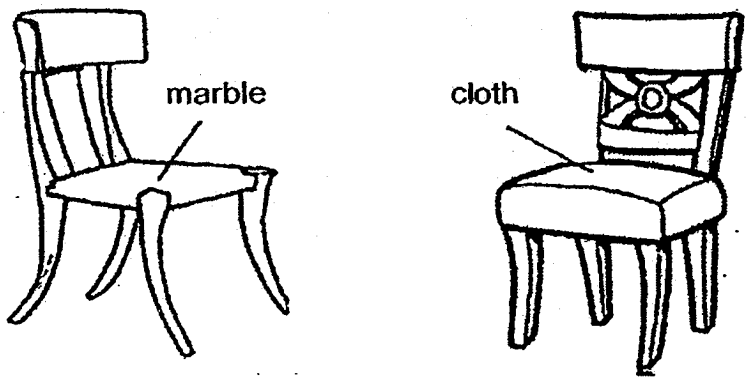
26. The diagram below shows the path of light that enabled Alex to see the ball while playing soccer at the field.



Based on the diagram above, what could P, Q and R represent?

	P	Q	R
(1)	Ball	Sun	Alex
(2)	Alex	Ball	Sun
(3)	Sun	Alex	Ball
(4)	Sun	Ball	Alex

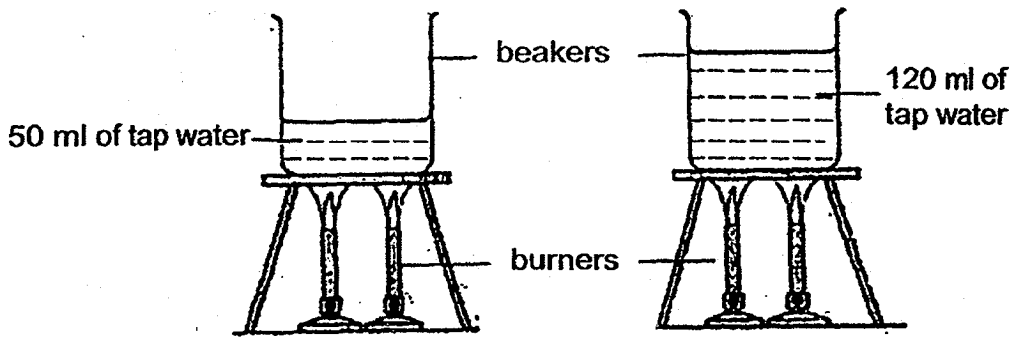
27. Grace wanted to buy a chair. She placed her hands on each of the seat below and observed that her hands felt cooler when they were on the marble chair compared to the chair made of cloth.



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. Ali set up the following experiment with two beakers containing different amounts of water. He turned on the four burners at the same time and observed the two set-ups till the water boiled. Each burner gave off the same amount of heat.



Based on the experiment above, which of the following statement(s) is/are most likely to be correct?

A The water in both set-ups started boiling at the same time.
B The water in both set-ups is at the same temperature when it was boiling.
C The water in set-up X had more heat energy than the water in set-up Y when it was boiling.
D The water in set-up Y is at a higher temperature than the water in set-up X when it was boiling.

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

NANYANG PRIMARY SCHOOL

PRIMARY 6 SCIENCE

SEMESTRAL ASSESSMENT 1

2018

BOOKLET B

Date : 8th May 2018

Duration : 1 h 45 min

Name : _____ **( )**

Class: Primary 6 ( )

Marks Scored:

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

Any query on marks awarded should be raised by 17 May 2018. We seek your understanding in this matter as any delay in the confirmation of marks will lead to delays in the generation of results.

Parent's signature: .....

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.

Booklet B consists of 14 printed pages including this cover page.

Section B (44 marks)

Write your answers to questions 29 to 40 in the spaces provided.

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 : _____

_____

_____

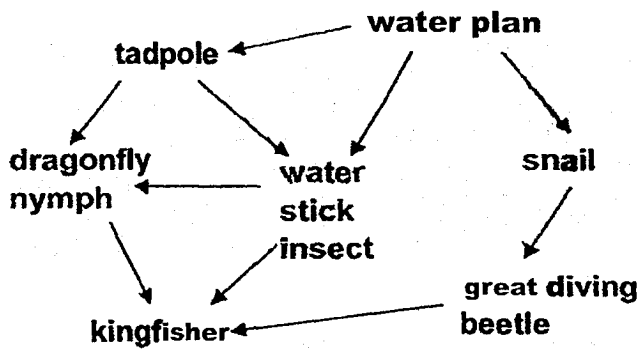
It is observed that the moth will leave a scent on the flower after it has laid its eggs. After that, no other moths will lay its eggs in the same flower.

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

_____

_____

30. The diagram below shows a food web in a pond community.



(a) If the population of water stick insect decreased drastically, explain how this would affect the population of snails in the pond after some time? [1]

_____

_____

(b) Based only on the food web above, write down the food chain that is made up of the most number of organisms. [1]

_____

_____

(c) Besides being the food source for the food chain, give two **other** benefits that the water plants provide for the animals in the pond. [2]

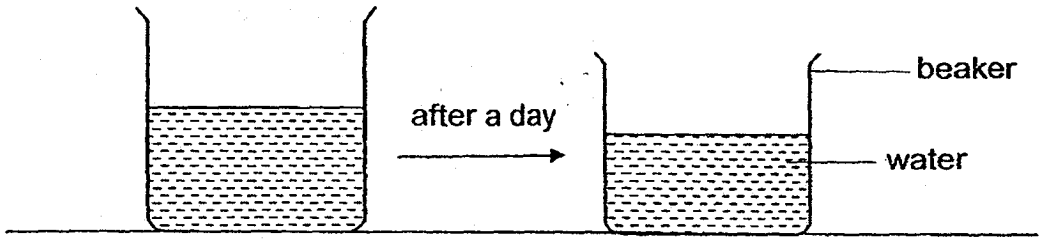
(i) _____

_____

(ii) _____

_____

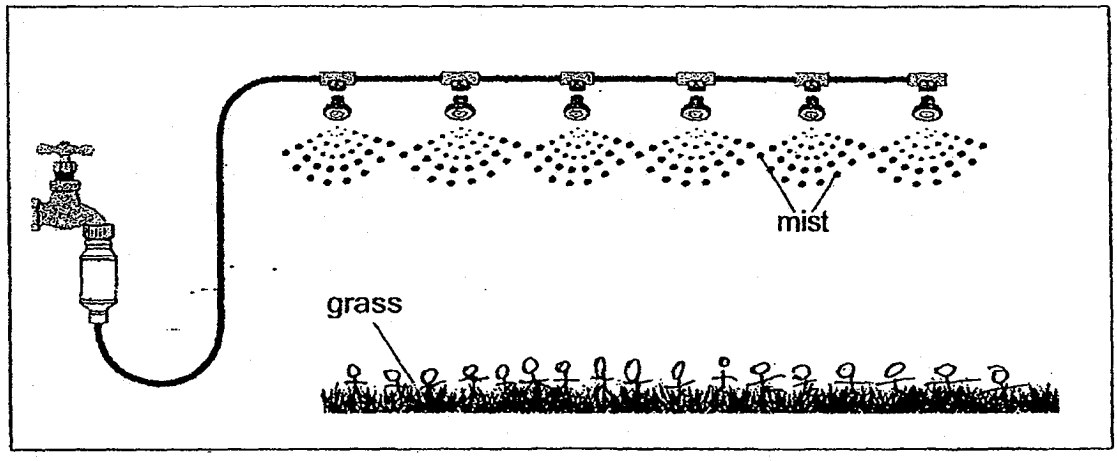
31. The diagram below shows a beaker of water left under the sun for a day. The amount of water became less after a day.



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

_____

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]

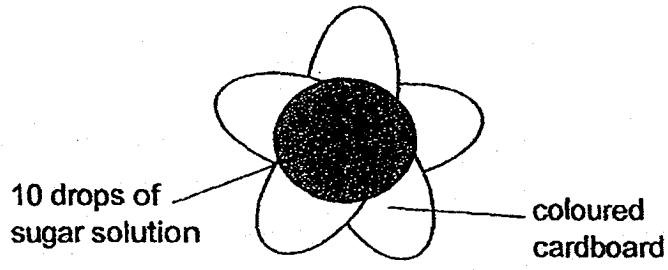
_____

_____

_____

_____

32. Kumar wanted to find out how the colour of flowers affects the number of insects they attract. He cut flowers of the same size and shape from three different coloured cardboards. He then placed 10 drops of sugar solution at the centre of each flower and left them in the open field.



Kumar counted the number of insects that visited the flowers in two hours and recorded the results in the table below.

Colour of flower	Number of insects that visited the flower		
	Insect X	Insect Y	Insect Z
Red	18	4	8
White	1	1	2
Yellow	9	12	2

(a) Based on Kumar's results, state what can be concluded for insect X's order of preference of flower colour? [1]

1st preference	2nd preference	3rd preference

Some flowers do not have bright colours nor nectar to attract insects. They have other characteristics to help in pollination.

(b) **Identify** one characteristic of such flowers and **explain** how it helps them in getting pollinated. [1]

_____

_____

(c) Name and describe the two processes that take place to enable a flower to become a fruit. [2]

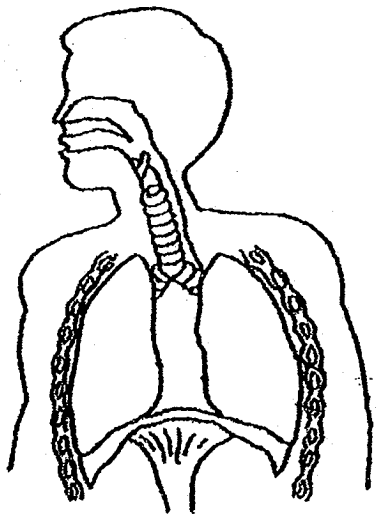
(i) _____

_____

(ii) _____

_____

33. (a) **Identify** and **label** the part of the human respiratory system which is involved in the exchange of gases in the body. [1]



The air up in the mountains is "thinner" as it contains less oxygen to breathe.

(b) Explain why Tom's breathing rate and heartbeat increased after he climbed and reached the top of a high mountain. [2]

Increased breathing rate:_____

_____

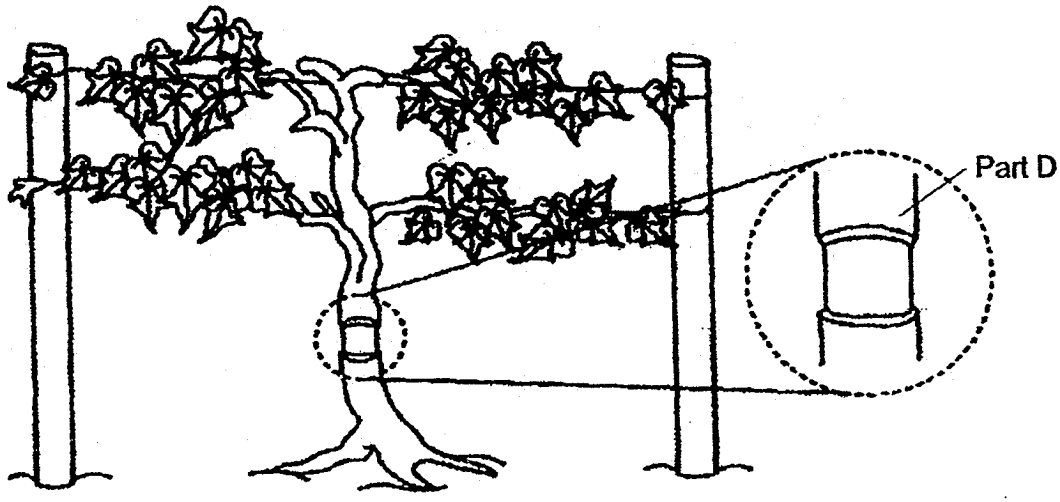
_____

Increased heartbeat:_____

_____

_____

34. Wei Ming removed the outer layer of a stem, hence removing the food-carrying tubes.



He measured and recorded the circumference of the stem in the table below.

(a) In the table below, fill in the expected circumference of the stem at part D for Day 5. [1]

	Circumference of stem (cm)		
Part	**Day 1**	**Day 3**	**Day 5**
D	1.6	1.8	

(b) Explain the change in the circumference of the stem from Day 1 to Day 3. [1]

_____

_____

(c) Wei Ming observed that the plant died after one month. Give a reason for his observation. [1]

_____

_____

35. Sarah prepared a specimen of four different types of cells, A, B, C and D. She observed the cells under the microscope and recorded the parts that were present with a tick (√).

Cell Part	Cell			
	A	B	C	D
Nucleus	√	√	√	
Cell wall		√	√	
Chloroplast		√		
Cell membrane	√	√	√	√

(a) Draw cell B in the box below and label it using the cell parts in the table above. [2]

Sarah had missed out one cell part in the table above. This part is present in all animal and plant cells.

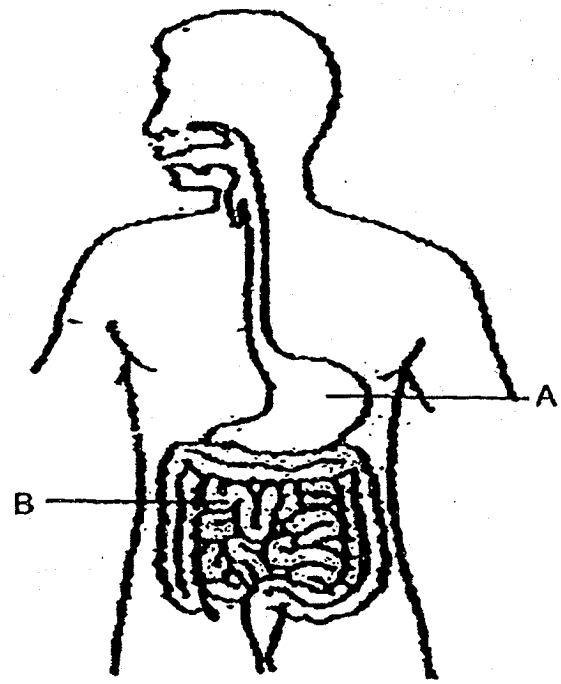
(b) Name the cell part and state its function. [1]

(i) Cell part : _____

(ii) Function : _____

_____

36. The diagram below represents the human digestive system.



(a) Identify the parts A and B. [1]

A : _____

B : _____

(b) Patient X had most of part A removed due to an illness. However, the patient's digestive system was still able to provide digested food to the rest of his body. Explain why. [2]

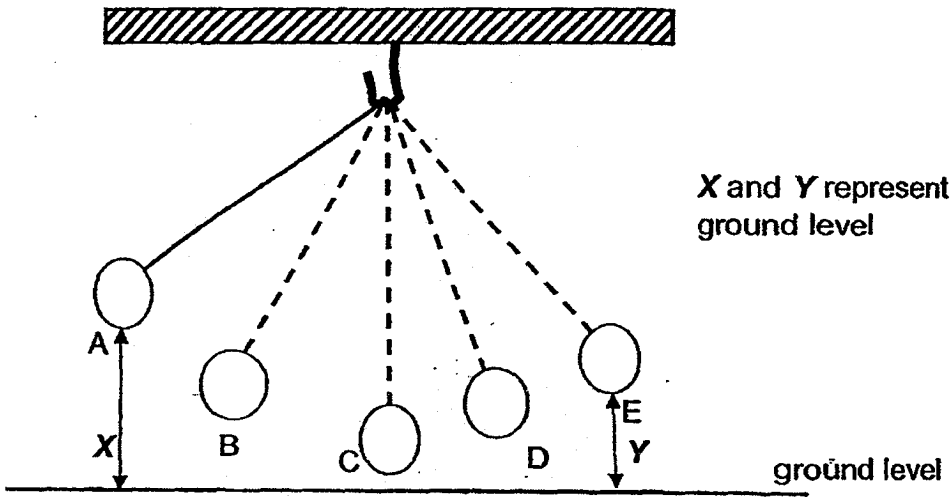
_____

_____

_____

_____

37. The diagram below shows the various positions of a metal ball when it was released from the original point A. The metal ball was observed to swing to point E before swinging back.

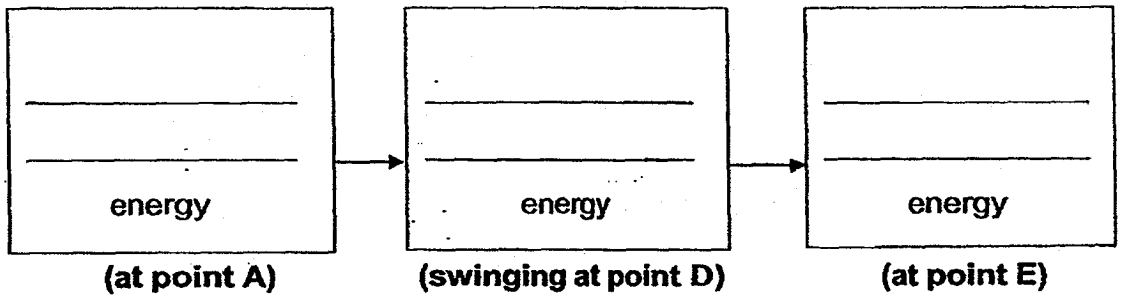


X and *Y* represent the heights above ground level

(a) State the point (A, B, C, D or E) where the metal ball had the greatest amount of kinetic energy. [1]

_____

(b) Fill in the blanks below to show the main energy conversion of the metal ball when it swung from point A to point E. [1]



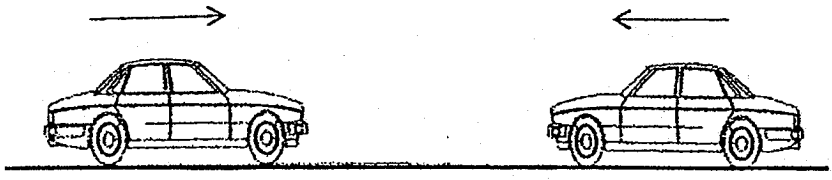
(c) Explain in terms of energy conversion, why height Y is lower than height X when the metal ball swung from point A to point E. [2]

_____

_____

_____

38. Steven was playing with his remote-controlled car which was travelling along a straight road. Ryan's remote-controlled car was travelling at the same speed but in the opposite direction as shown below.



Steven's car **Ryan's car**

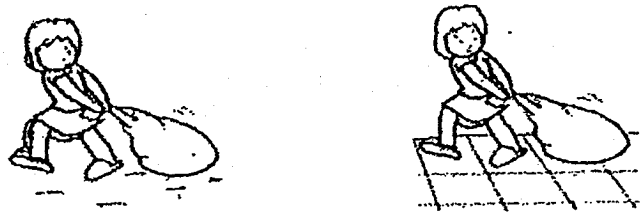
(a) State one effect of the force observed when the cars collided. [1]

_____

(b) In the table below, indicate with a tick (√) whether each of these actions requires only a 'push', a 'pull' or both 'push and pull'. [2]

	Action	Push	Pull	Push and Pull
(i)	Jumping up			
(ii)	Cutting paper with a pair of scissors			
(iii)	Flattening a plasticine			
(iv)	Taking a piece of tissue paper from a tissue box			

Peggy dragged a 10 kg bag on 2 different types of floors.



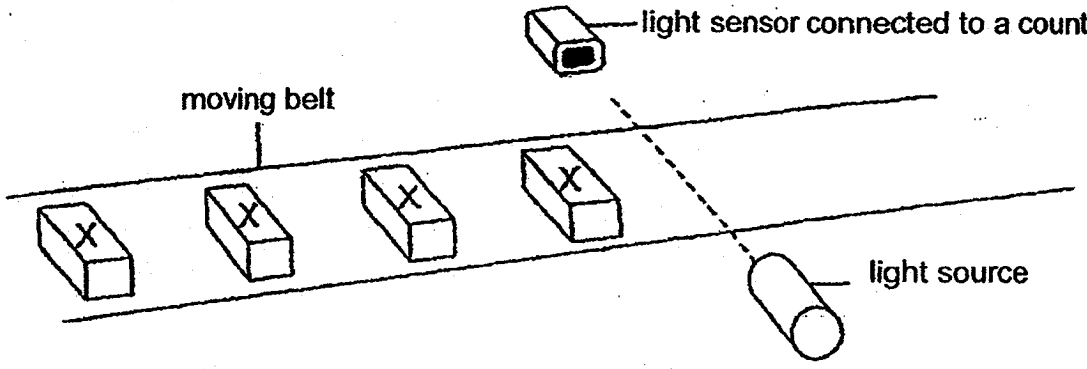
carpeted floor **tiled floor**

(c) She observed that it was harder to drag it across a carpeted floor than a tiled floor. Explain this observation. [2]

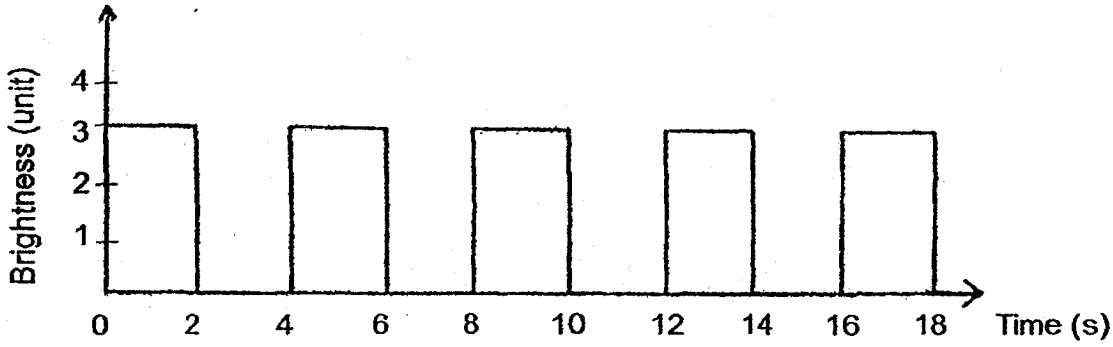
_____

_____

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

_____

(c) The light source and the sensor are placed 2 cm above the belt. Can an object that is 5 cm in height be detected? Explain your answer. [1]

_____

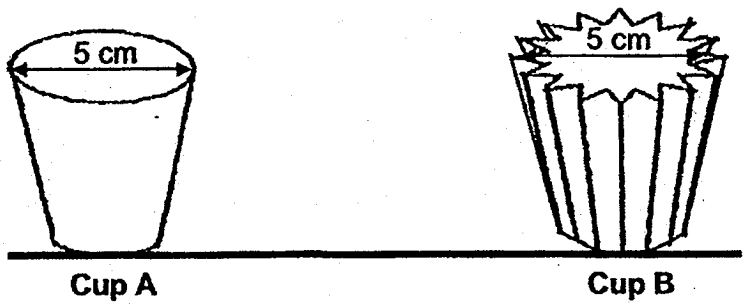
_____

(d) Object Y is made of a material that allows **most** light to pass through. Can this set-up be used to count the number of Y? Explain your answer. [2]

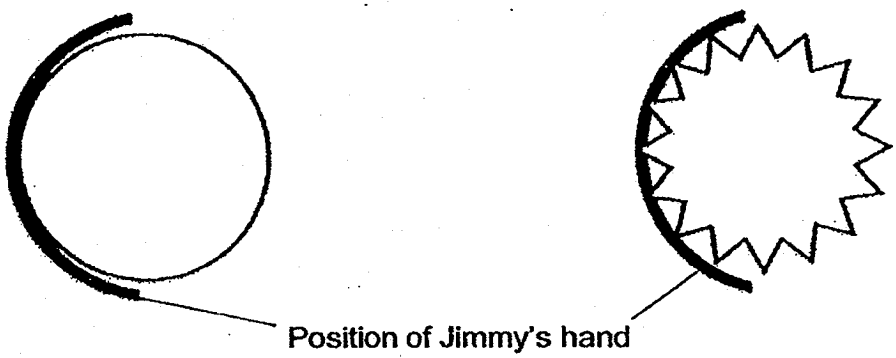
_____

_____

40. Jimmy wanted to find out how long he could hold onto the cups below with his bare hands. He used two cups made of the same material and of the same diameter. He then filled both cups with the same amount of hot water at 90^0C.



The diagram below shows the position of his hand when he held each cup up.



(a) Which cup, A or B, could Jimmy hold for a longer period of time before it was too hot for him to continue holding? Explain your answer. [2]

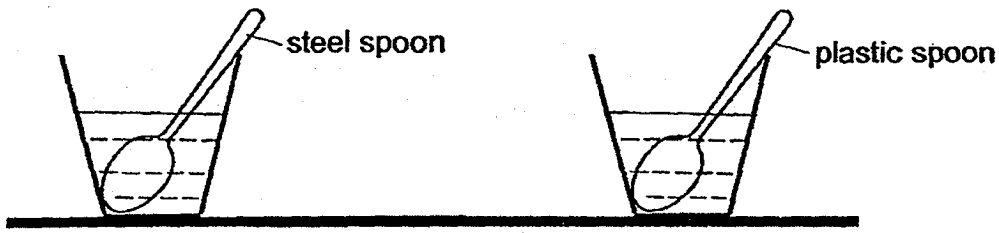
_____

_____

_____

_____

Jimmy then conducted another experiment as shown below. He used two identical cups and filled both cups with the same amount of hot water at 90°C.



(b) In which cup, C or D, would the water reach room temperature faster? Explain your answer [2]

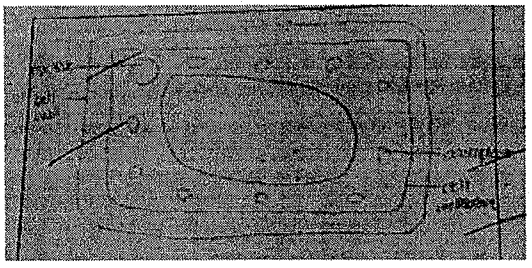
SCHOOL : NANYANG PRIMARY SCHOOL
LEVEL : PRIMARY 6
SUBJECT : SCIENCE
TERM : 2018 SA1

SECTION A

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

SECTION B

Q29)	(a) (i) Its flowers can be pollinated and the ovules can fertilise when the moth brings pollen. (ii) Its young will not go hungry when it hatches because the young's source of food is the seeds. (b) The other moths of the same type will know that a moth has already laid its eggs on the flower and will not lay their eggs on the same flower.
Q30)	(a) Less water stick insect feeds on the water plant, the population of water plant increases. Population of snail has more food, population size of the snail increases. (b) Water plant is eaten by tadpole which is eaten by water stick insect and eaten by dragonfly nymph and lastly eaten by king fisher. (c) (i) It provides oxygen for the animals in the pond. (ii) It provides shelter for the animals in the pond to reproduce, grow and hide from predators.

Q31)	(a) Evaporation (b) The water vapour in the surrounding air loses heat to the tiny water droplets and condenses into tiny water droplets to cool down the surrounding air.
Q32)	(a) Red, Yellow, White (b) The feathery stigma that traps pollen grain is blown by wind. (c) (i) Pollination. Pollen is transferred from the anther to the stigma of the flower. (ii) Fertilisation. The male reproductive cell fuses with the female productive cell.
Q33)	(a) Lungs (b) There is less oxygen in the air for Tom to take in. So Tom has to breathe in more times to take in enough oxygen for the body. As his body needs more oxygen, digested food and water, his heart will beat faster for the blood to transport more oxygen, digested food and water to all parts of the body.
Q34)	(a) 2 (b) As there was no food-carrying tube, the food will be stuck at part D and start to bloat. (c) (d) The roots could not receive food and so the roots could not absorb water for the plant.
Q35)	(a)  (b) (i) Cytoplasm (ii) It is where all cell activities take place.
Q36)	(a) A : stomach B : small intestine (b) Small intestine is still able to digest the food. The digested food can still be absorbed through the wall of the small intestine and into the

	bloodstream.
Q37)	(a) C (b) Gravitational Potential → Kinetic → Gravitational Potential (c) Some of the kinetic energy of the metal ball was converted to heat energy and sound energy. There was less kinetic energy to be converted to less gravitational potential energy at Point E compared to Point A.
Q38)	(a) Force caused the cars to stop (b) (i) Push (ii) Push and Pull (iii) Push (iv) Pull (c) There is more frictional force between the bag and the carpeted floor so more pull force is needed to overcome the frictional force.
Q39)	(a) 3 units (b) Light travels in a straight line (c) Yes. As long as any object that has a height of more than 2 cm can be detected by the light sensor. (d) No. Object Y is transparent and allows most light to pass through as light is not blocked. The sensor can sense light passing through the object and not the difference in light that passed through.
Q40)	(a) Cup B. Tom's hand was covering less surface area of Cup B than Cup A. So his hand will gain lesser heat from Cup B than Cup A. (b) Cup C. Steel is a better conductor of heat than plastic. The water in Cup C would lose heat faster to the steel spoon and the steel spoon would lose heat faster to the surrounding, cooling the water faster.