SA1

PRIMARY 6 MID-YEAR EXAMINATION 2017

Name _____ Date: 8 MAY 2017

Class : Primary _____ Duration: 1h 45min

Parent's Signature : Marks: _____ / 56

SCIENCE
BOOKLET A

INSTRUCTIONS TO CANDIDATES

Write your name, class and register number.

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

Shade your answers on the Optical Answer Sheet (OAS) provided.

Booklet A (28 x 2 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) and shade your answer on the Optical Answer Sheet.

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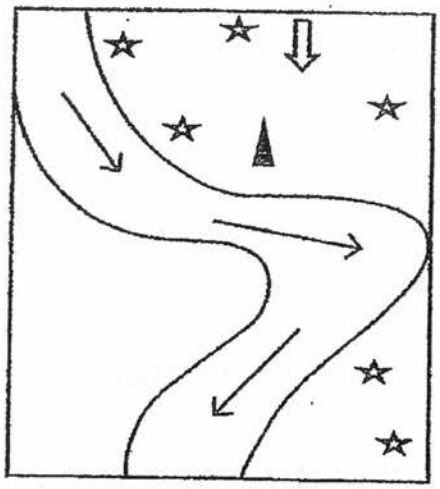
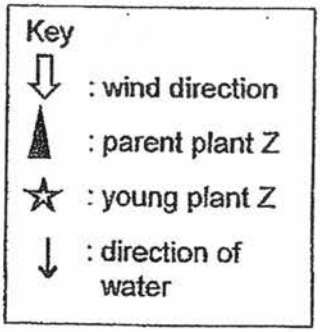
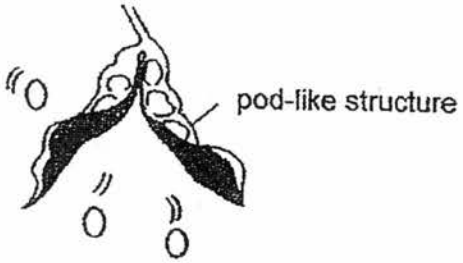
1. The diagram below shows the location of a parent plant Z and its young plants near a river.



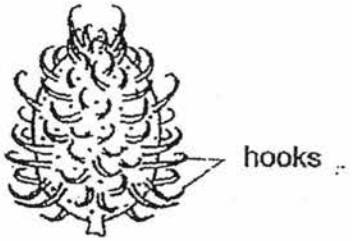


Which of the following fruits is likely to be produced from plant Z?

(1)



(2)



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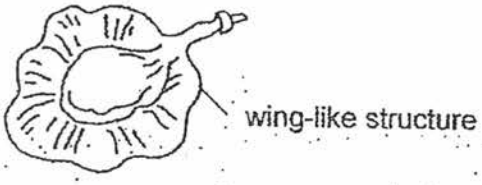

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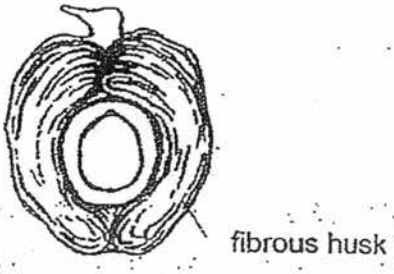
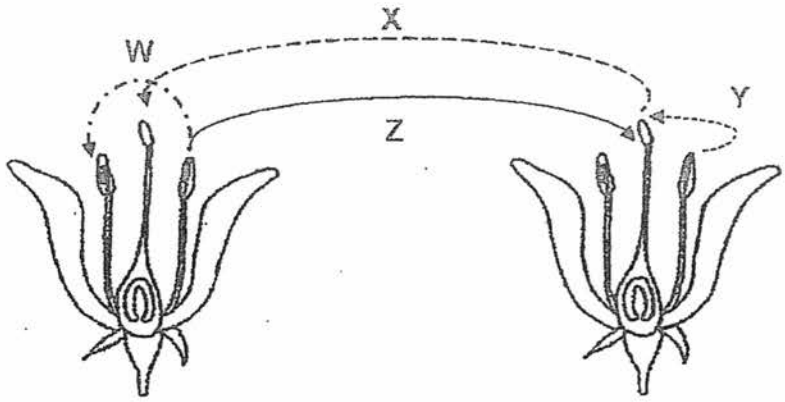


2. The diagram below shows two flowers from the same plant.



Which of the arrows show(s) pollination taking place?

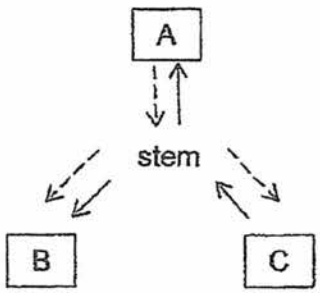
(1) Y only

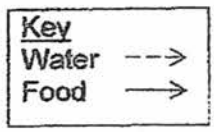
(2) W and Y only

(3) X and Z only

(4) Y and Z only

3. A, B and C are different parts of a plant. The diagram below shows how water and food are transported in the plant.

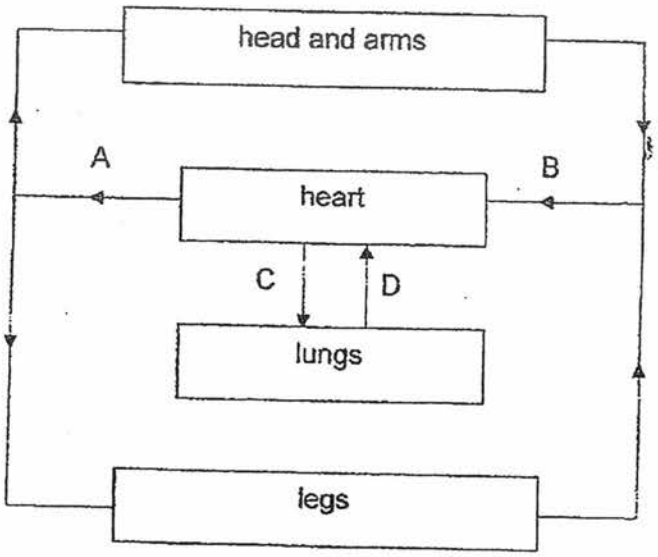




Which of the following correctly shows the parts of the plants?

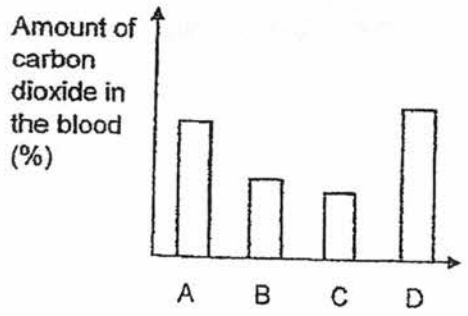
	A	B	C
(1)	root	leaf	fruit
(2)	leaf	flower	root
(3)	leaf	root	fruit
(4)	root	flower	leaf

4. The diagram below shows the movement of blood in some parts of the human circulatory system.

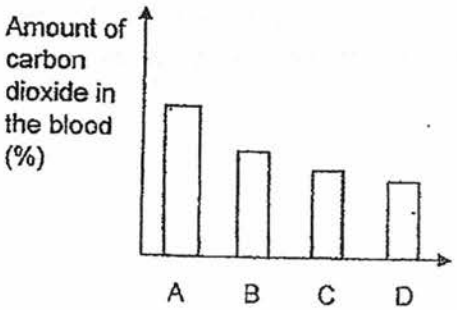


Which of the following graphs represents the **amount of carbon dioxide** in blood vessels, A, B, C and D?

(1)



(2)



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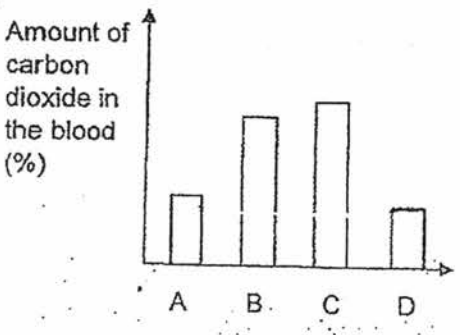

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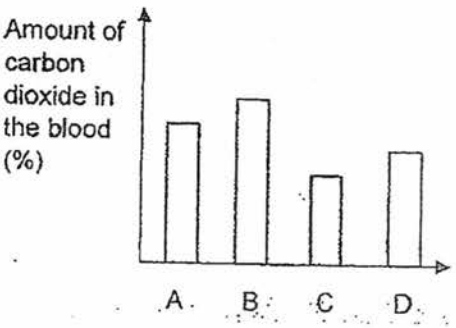
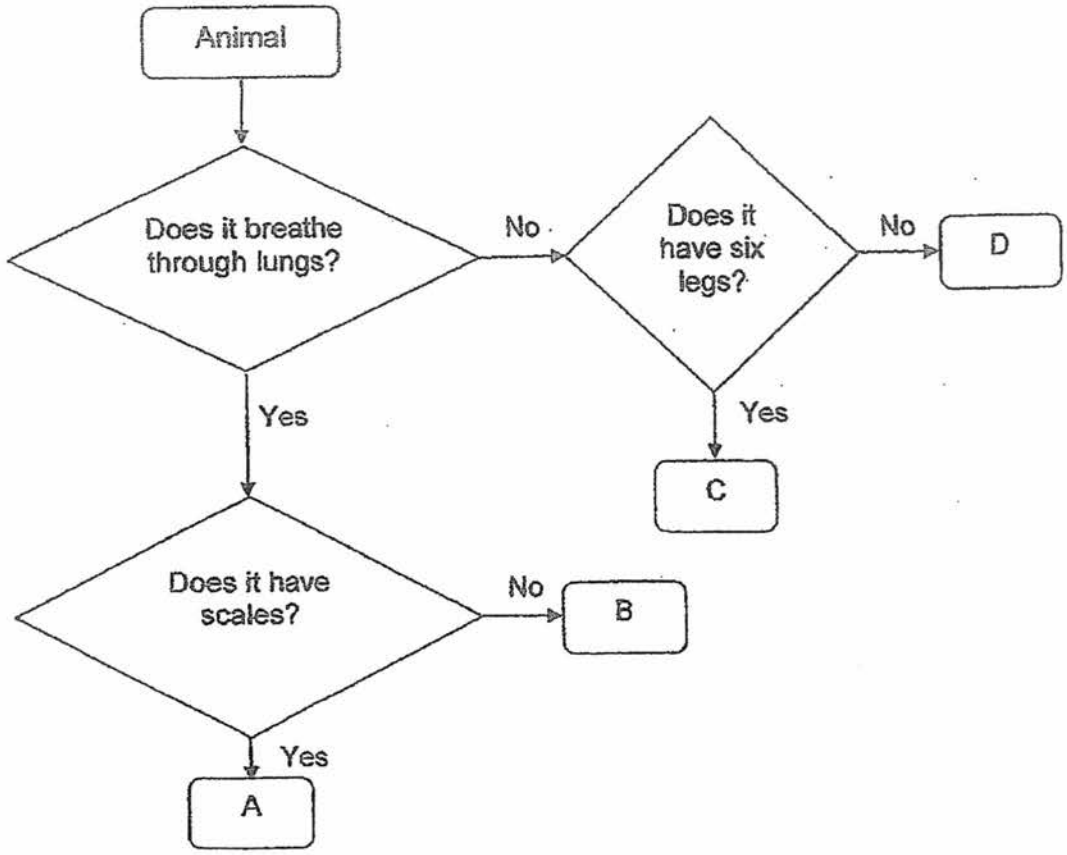


5. The flowchart below shows some characteristics of animals, A, B, C and D.



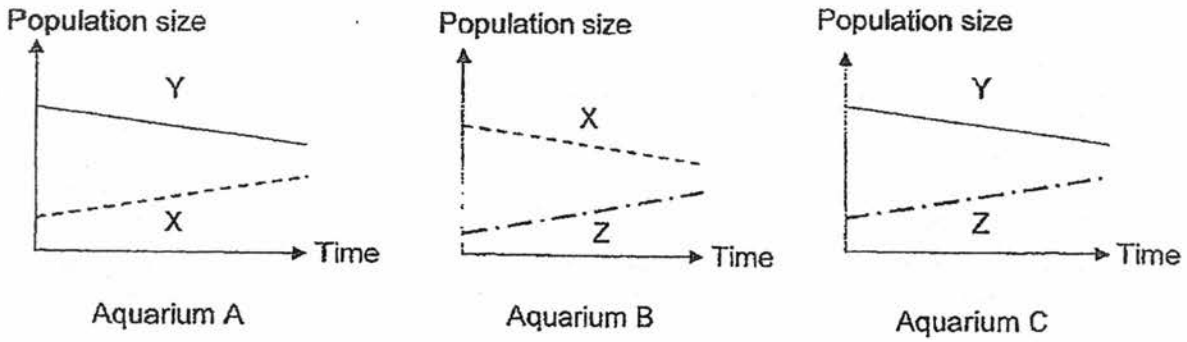
Which of the following is best represented by A, B, C and D?

	A	B	C	D
(1)	reptile	bird	mammal	fish
(2)	fish	mammal	insect	bird
(3)	fish	bird	amphibian	mammal
(4)	reptile	amphibian	insect	fish

6. Three aquariums, A, B and C, contain different organisms, X, Y and Z, as shown in the table below.

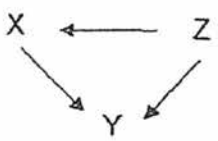
Aquarium	Organisms
A	X and Y
B	X and Z
C	Y and Z

The graphs below show the populations of the organisms in each aquarium over a month.



Which of the following shows the relationships between the organisms, X, Y and Z, if they are all placed in the same aquarium?

(1)



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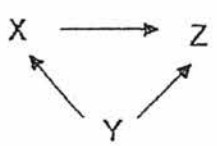

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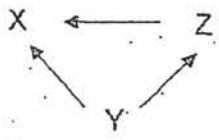

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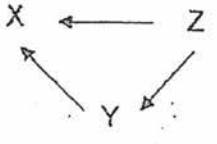
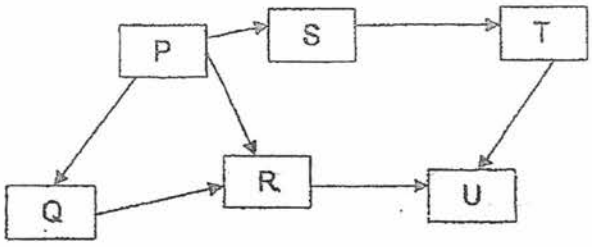


7. The diagram below shows a food web.



Three statements were written about the food web.

A R is a prey as well as a predator.

B There are five prey in this food web.

C All the energy in R is transferred to U.

Which of the above statements is/are correct?

(1) A only

(2) A and B only

(3) B and C only

(4) A, B and C

8. The following relationships were observed among four living things, P, Q, R and S.

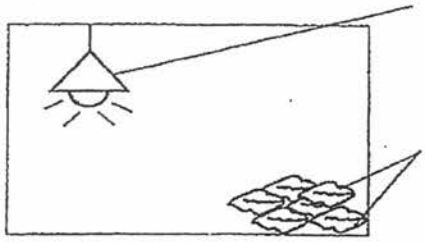
R feeds on S.
P feeds on Q and S.
S gets its food from Q.
R feeds on P but does not feed on Q.

Which of the following classifications is correct?

	producer	prey only	prey and predator	predator only
(1)	R	S	P	Q
(2)	Q	P	S	R
(3)	R	Q	P	S
(4)	Q	S	P	R

9. Study the set-ups shown below. Which pile of leaves would be the first to decompose completely?

(1)



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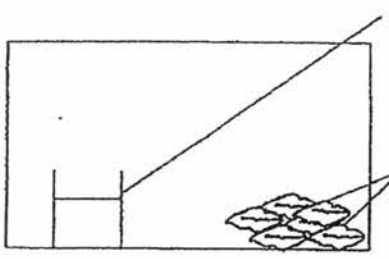

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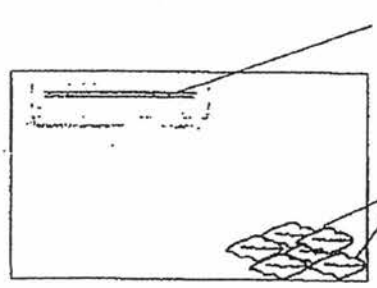

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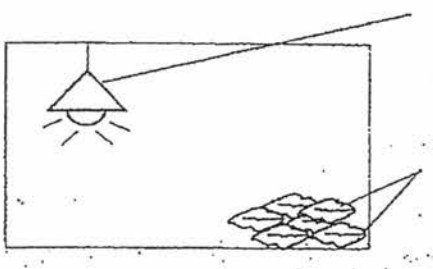


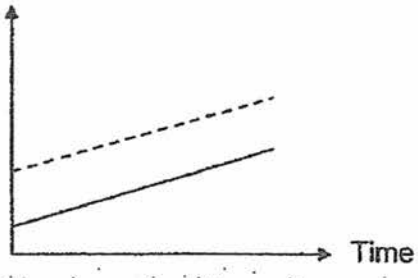
10. The food chain below, shows the relationship between four organisms in a community.

plant ⟶ grasshopper ⟶ mynah ⟶ eagle

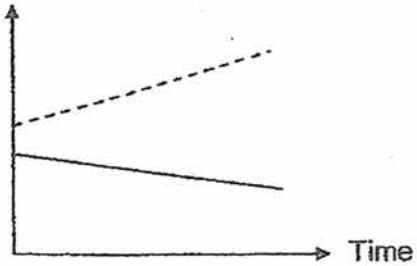
Which of the graphs below correctly represents the changes in the populations of the grasshoppers and eagles when animal X, which only feeds on mynahs, is introduced to the community?

Key:	
Grasshoppers	- - - - - - -
Eagles	———

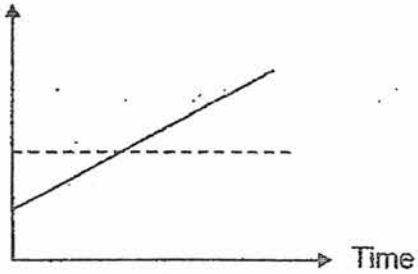
(1)



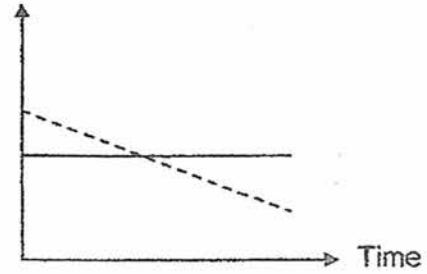
(2)



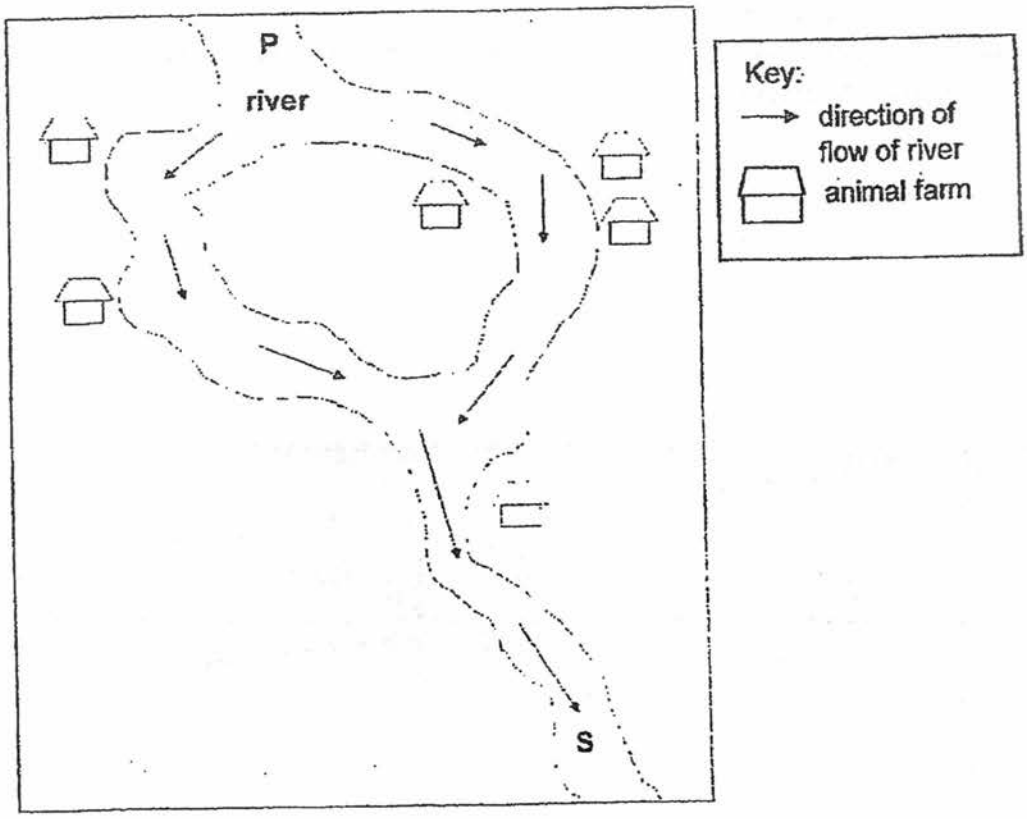
(3)



(4)



11. The map below shows the location of some animal farms along a river. The animal waste from the farms flowed into the river where decomposition of the animal waste would take place. The number of fish at P and S was recorded over a period of time.



Which of the following is a possible effect on the number of fish in the river and is matched with the correct reason?

	Effect on the number of fishes	Reason
(1)	More fishes at S than at P	There was more nutrients for the fish at S.
(2)	Fewer fishes at S than at P	More bacteria would compete with the fish for dissolved oxygen at S.
(3)	More fishes at S than at P	Decomposition produced carbon dioxide for the fish at S.
(4)	Fewer fishes at S than at P	Bacteria fed on the fish at S.

12. In a particular habitat, the number of organisms are counted and recorded in the table below.

Organisms	Number of organisms
grasshoppers	23
hibiscus	10
male frogs	6
caterpillars	4
female frogs	4
butterflies	6

Based on the table above, which of the following is correct?

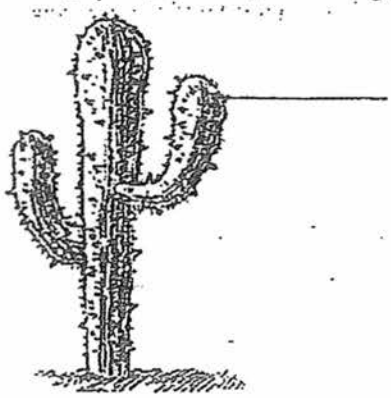
(1) There are six communities.

(2) There are six populations with a total of 53 organisms.

(3) There are 53 populations of organisms living in the habitat.

(4) There is one community with four populations of organisms.

13. The diagram shows a plant living in a desert.



The small needle-like leaf helps the plant to _____.

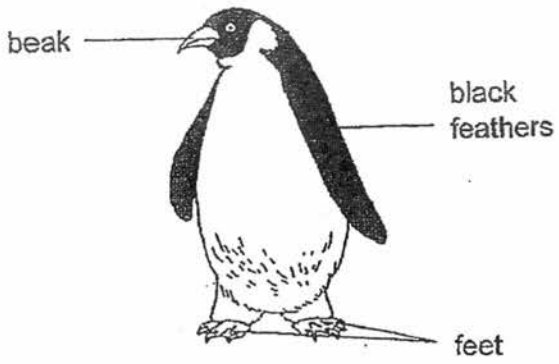
(1) make food

(2) store water

(3) reduce heat loss

(4) reduce water loss

14. The diagram below shows animal P.



Animal P

Which of the following adaptations helps it to get food?

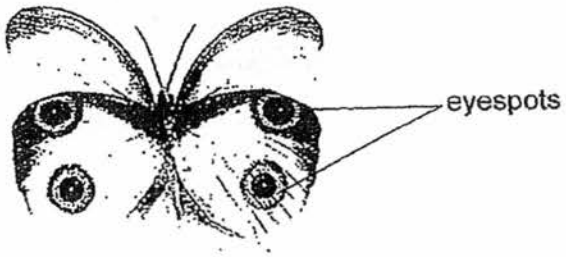
(1) The streamlined body reduces water resistance.

(2) The small feet reduce heat loss to the surroundings.

(3) The beak of the animal P helps it to peck for prey in the ground.

(4) The black feathers help to camouflage it so its prey below cannot see it.

15. The diagram below shows the adaptation of animal X.



Animal X

Which of the following is correct about how the eyespots of animal X help it to survive?

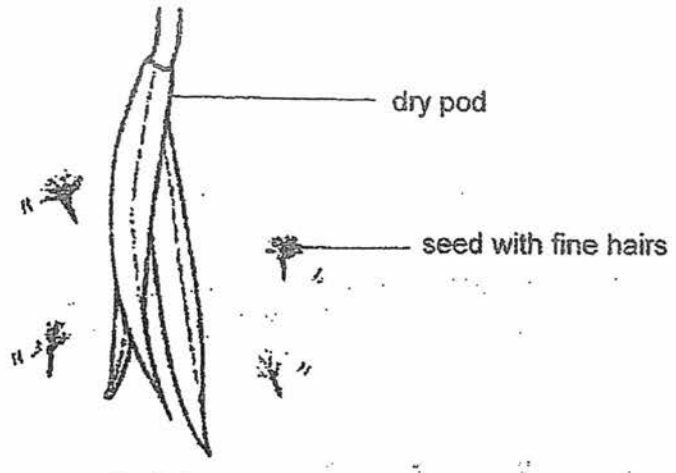
(1) The attractive wings will distract its predator.

(2) The prey of animal X will not be able to spot it easily.

(3) The predators of animal X will mistake it for a bigger animal and avoid it.

(4) Animal X will be able to camouflage itself in its surroundings and escape from its predators.

16. The diagram below shows the characteristics of fruit A.



Fruit A

Which of the following correctly describes the dispersal of fruit A?

A The seed will hook onto the fur of animals.

B The fruit splits open to release the seeds when it ripens.

C The seed has fine hairs so as to be carried further away by the wind.

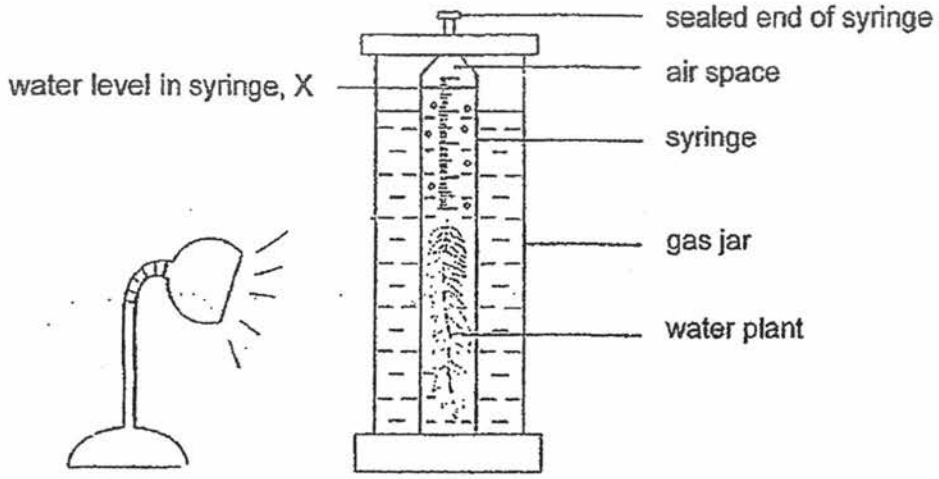
(1) B only

(2) C only

(3) B and C only

(4) A, B and C

17. Weiming set up an experiment in a dark room as shown below.

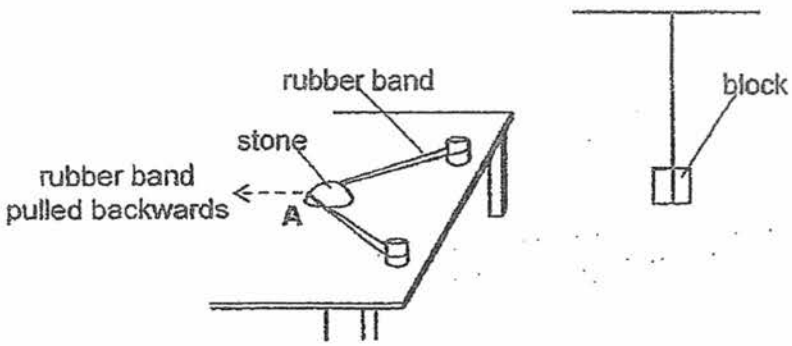


He placed a table lamp at a distance from the gas jar. After half an hour, he observed that the water level, X, in the syringe moved.

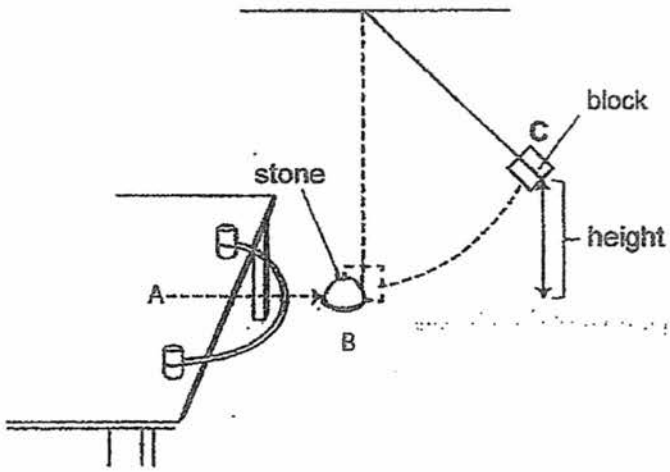
In which direction did the water level, X, move and what was the reason for the movement?

	Water level X moved	**Reason**
(1)	up	Heat from the lamp causes the water to expand.
(2)	up	Plant gives out water during photosynthesis.
(3)	down	Oxygen released by the plant collects in the air space.
(4)	down	Carbon dioxide in the air space is taken in by the plant.

18. Samantha conducted an experiment as shown below. She pulled the rubber band backwards together with a stone to position A.



When she released the rubber band with the stone, the stone moved forward and hit the block. The block swung from position B to position C, as shown in the diagram below.



Which one of the following correctly shows the main energy conversions taking place from positions A to B to C, and back to B?

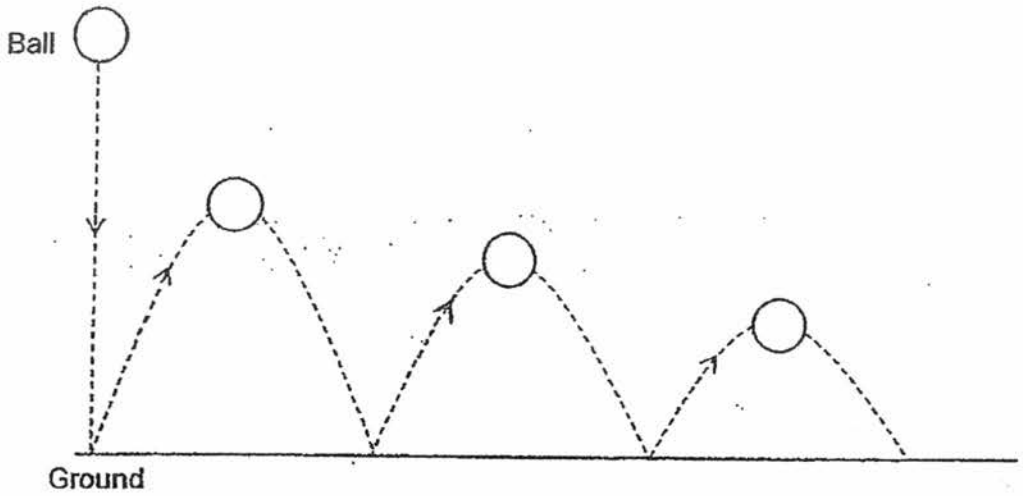
(1) Potential energy →Kinetic energy → Kinetic energy

(2) Potential energy → Kinetic energy → Potential energy

(3) Potential energy → Kinetic energy → Kinetic energy → Potential energy

(4) Potential energy → Kinetic energy → Potential energy → Kinetic energy

19. Ravi dropped a ball from a height above the ground. As the ball bounced, Amy noticed that the ball bounced up to a lower height after each bounce, as shown in the diagram below.



Which of the following explains correctly why the ball did not bounce back to the initial height from which it was dropped?

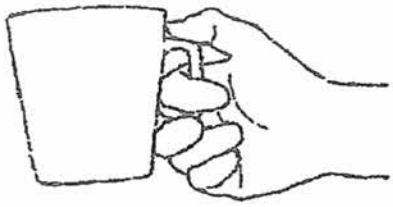
(1) The potential energy increased with each bounce.

(2) All of the potential energy was converted to heat energy.

(3) Some of the potential energy was destroyed when the ball bounced when it hit the ground.

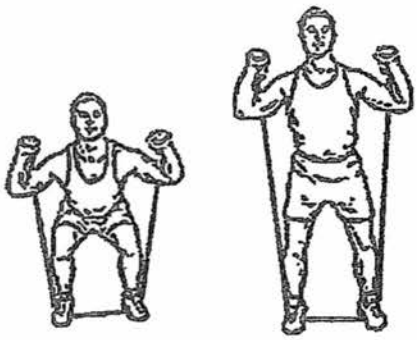
(4) Some of the kinetic energy was converted to heat energy and sound energy when it hit the ground.

20. Which of the following makes use of gravitational force to do the work?

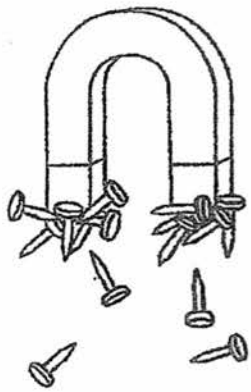


(1) Holding a cup

(2) Watering plants

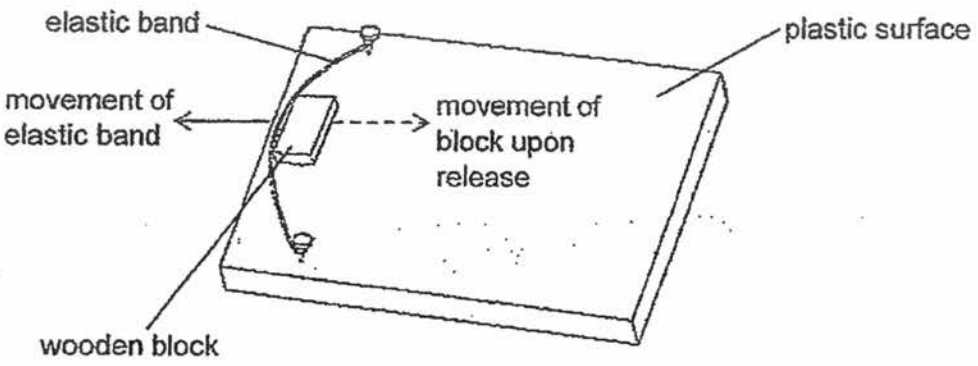


(3) Exercising with resistance bands



(4) Attracting nails with a magnet

21. Carl conducted an experiment to find out which liquid, R, S, T or U, is best able to reduce friction between a wooden block and a plastic surface.



In the set-up above, he applied a thin layer of liquid R on the plastic surface. He then stretched the elastic band by 2 cm from its original position. He released the block and measured the distance it moved before coming to a stop. The plastic surface was cleaned and Carl repeated the experiment with liquids S, T and U and the table below shows the results of his findings.

Liquid	R	S	T	U
Distance moved by the block (cm)	33	45	27	39

Friction between the engine parts in the moving car can cause overheating.

Based on his results, which of the liquids, R, S, T or U, should he choose to reduce overheating in the engine parts most effectively?

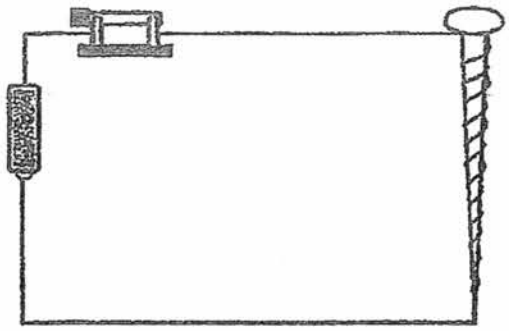
(1) R

(2) S

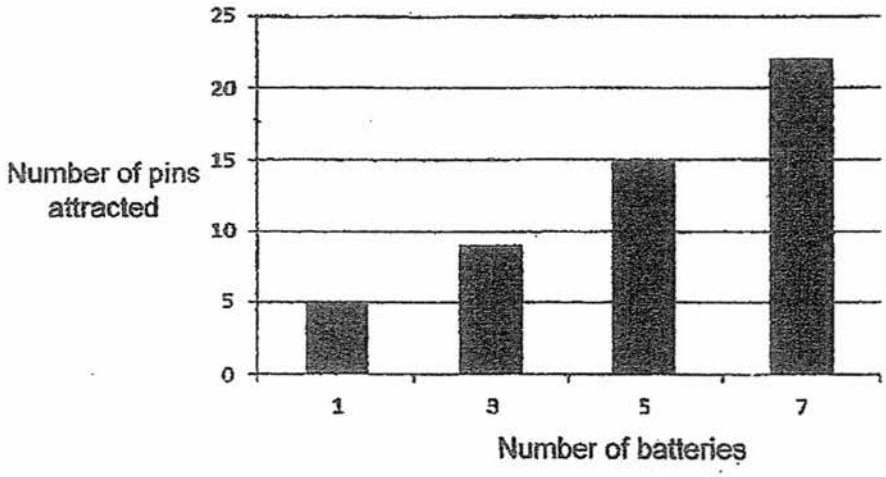
(3) T

(4) U

22. Gina wanted to find out how the number of batteries affect the strength of an electromagnet using the set-up below. She changed the number of batteries and counted the number of pins that were attracted to the iron nail.



Her results were shown in the graph below.



Based on the graph, how many pins would the electromagnet attract if there were six batteries in the set-up?

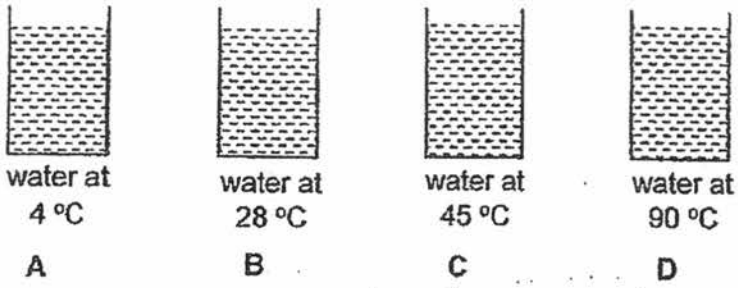
(1) 7

(2) 13

(3) 19

(4) 25

23. Four identical containers, A, B, C and D, shown below were filled with water at different temperatures. They were left in a room with a temperature of 28°C.



Which of the following container(s) will you observe water droplets forming on its/ their outer surface(s)?

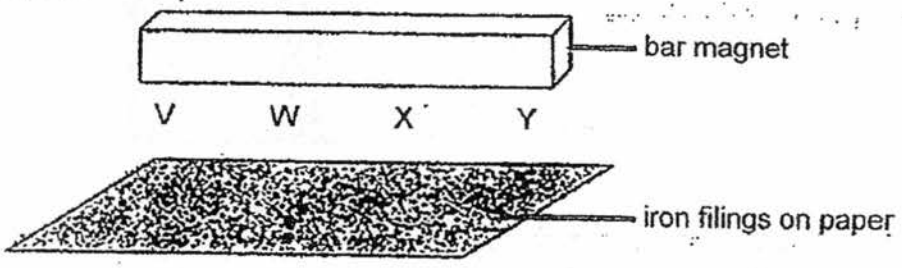
(1) A only

(2) A and B only

(3) C and D only

(4) A, B, C and D

24. Siang Hoe spread iron filings evenly on a piece of paper. He placed a bar magnet above it and then moved the bar magnet towards the paper. He observed that the iron filings were mostly attracted to certain parts of the magnet.



At which parts of the magnet, V, W, X or Y, would the least amount of iron filings be attracted to?

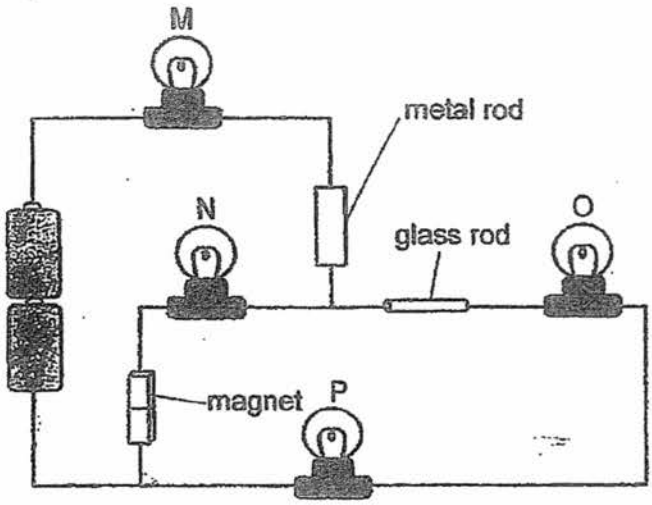
(1) V and W only

(2) V and Y only

(3) W and X only

(4) X and Y only

25. The diagram below shows four bulbs, M, N, O, and P, connected properly in a circuit. All the bulbs and batteries are in good working condition.



Which of the bulbs, M, N, O or P, will light up?

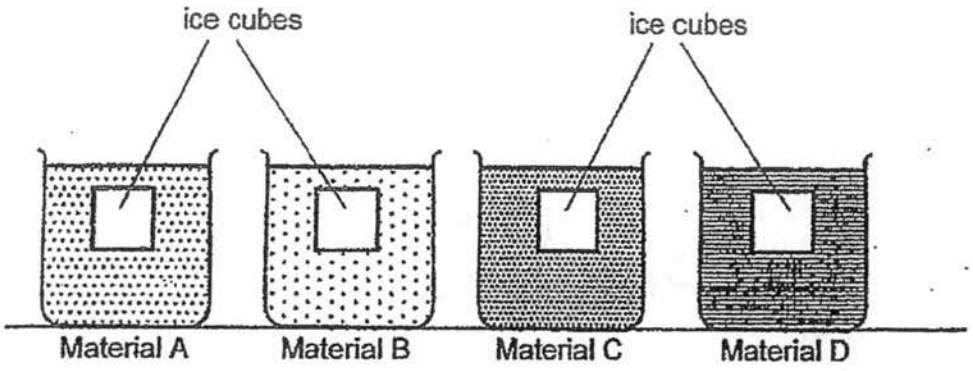
(1) M and N only

(2) M, O and P only

(3) N, O and P only

(4) None of the bulbs

26. Each of the four beakers was packed with different materials, A, B, C and D, as shown in the diagram below. Hayati placed identical ice cubes in each beaker.



She recorded the time taken for each ice cube to melt completely in the table below.

Material	Time taken for ice cube to melt completely (min)
A	25
B	55
C	75
D	100

Based on her findings, which of the materials, A, B, C or D, could be used to make a container that will keep hot food warm for the longest time?

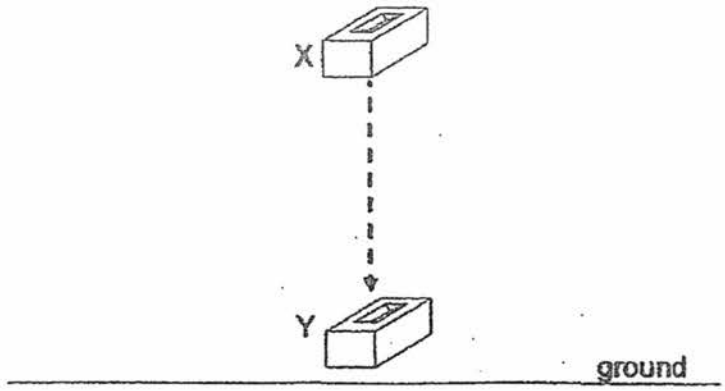
(1) Material A

(2) Material B

(3) Material C

(4) Material D

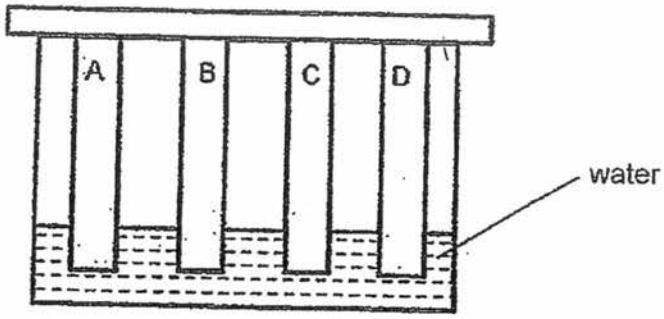
27. In the diagram below, a brick was dropped from position X above ground. It moved from position X to position Y before touching the ground.



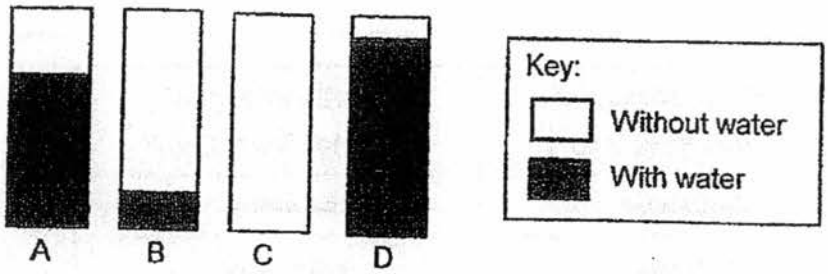
Which of the following correctly shows the change in the amount of potential energy and kinetic energy from X to Y?

	Potential energy of the brick from X to Y	**Kinetic energy of the brick from X to Y**
(1)	decreased	decreased
(2)	increased	decreased
(3)	decreased	increased
(4)	increased	increased

28. Catherine placed four similar strips made of different materials, A, B, C and D, into a container filled with water as shown below.



She removed the strips after one minute. The amount of water absorbed by each strip is shown below.



What observation in the strips would not help Catherine decide which material is most suited to make a bath towel?

(1) the colour of the strip when it is wet

(2) the length of the strip that remains dry

(3) the mass of each strip after one minute

(4) the time taken by the strip to be completely wet

End of Booklet A

PRIMARY 6 MID-YEAR EXAMINATION 2017

Name . _____ ( ) Date: 8 MAY 2017

Class : Primary 6 ( ) Duration : 1h 45min

Parent's Signature : _____ Marks: _____ / 44

SCIENCE

BOOKLET B

INSTRUCTIONS TO CANDIDATES

Write your name, class and register number.

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

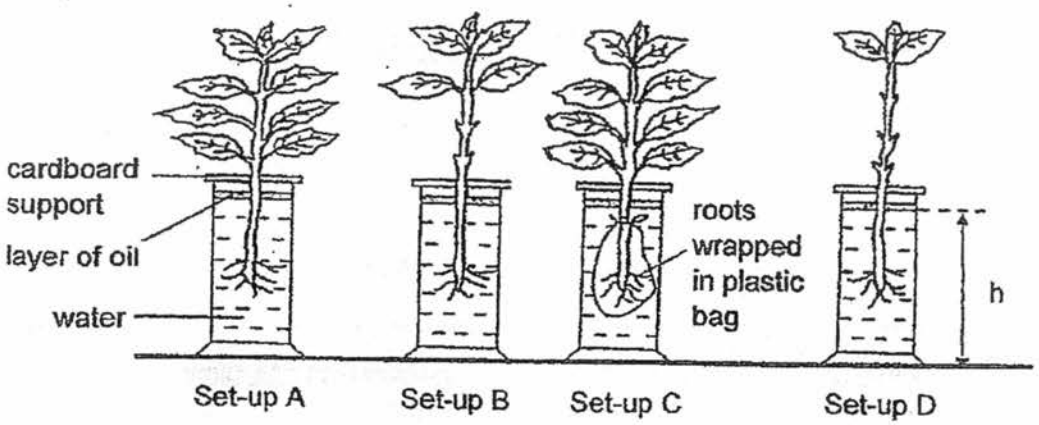
Booklet A	/56
Booklet B	/44
Total	/100

Section B

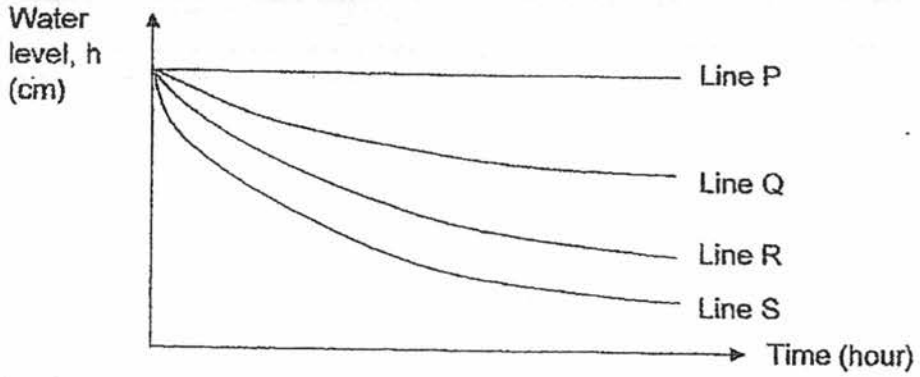
For questions 29 to 40, write your answers in this booklet. The number of marks available is shown in brackets [ ] at the end of each question or part question.

---

29. Simon was given four plants in identical glass jars, each containing the same amount of water as shown below. He has to find out how the number of leaves affects the amount of water absorbed by the plant. He placed the set-ups, A, B, C and D, next to the window for three hours. He then recorded the water level, h, at regular intervals.



The results obtained were represented in the graph below.



(a) Which line, Q, R or S, represents the results obtained for set-up D? Explain your choice. [2]

Score 2

(b) Simon changed the aim of the experiment to find out if the presence of roots of the plant affects the amount of water taken in. Which two set-ups should he use to compare? [1]

_____

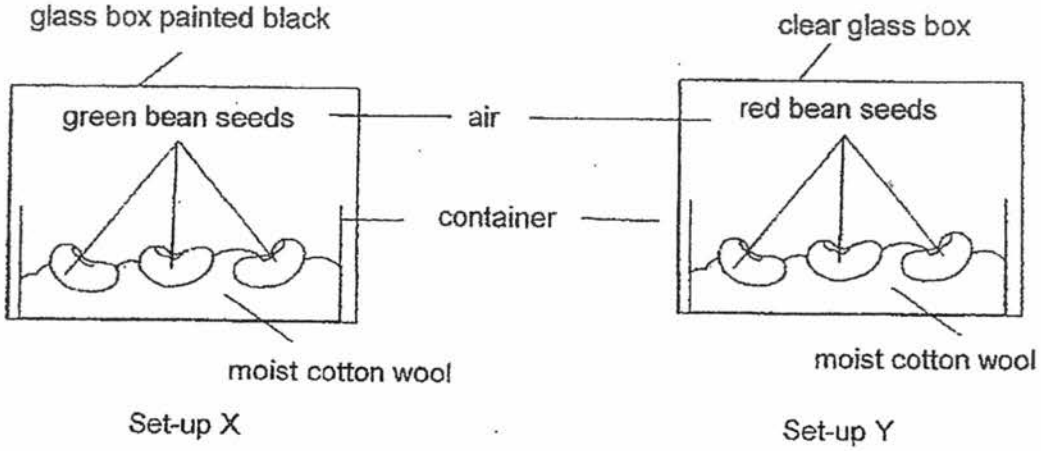
(c) Which set-up in (b) is the control set-up? Explain your answer. [1]

_____

_____

Score	2

30. Shawn wanted to find out if light is needed for the germination of seeds. He placed two set-ups as shown below on the kitchen table.

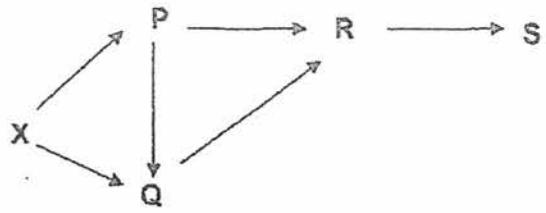


(a) Shawn was told that his experiment was not fair test as he had used different types of seeds. Explain why the same type of seeds should be used in his experiment. [1]

(b) What changes should Shawn make to set-up Y if he wants to find out if water is needed for the germination of seeds? [2]

Score	/3

31. The food web below shows how organisms X, P, Q, R and S, depend on one another in a pond community.



(a) Based on the above food web, which organism is greatest in terms of quantity? [1]

_____

(b) Based on the food web, explain how a disease that affects R would affect the population size of S. [2]

_____

_____

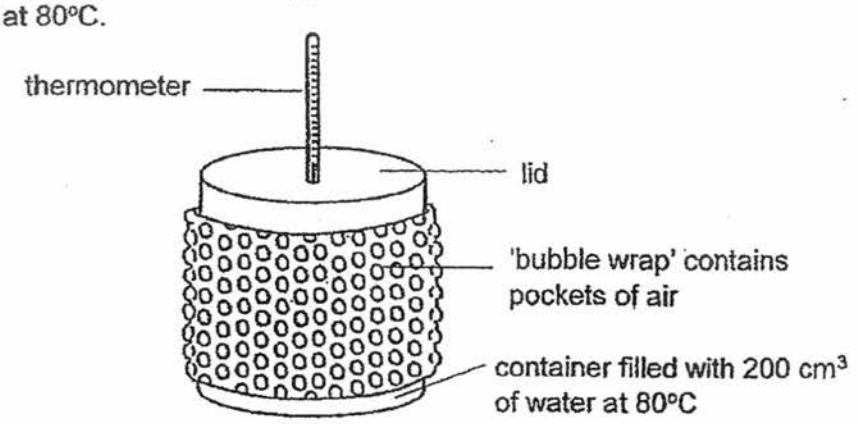
(c) Based on your answer in (b), state one way organism S could do to survive. [1]

_____

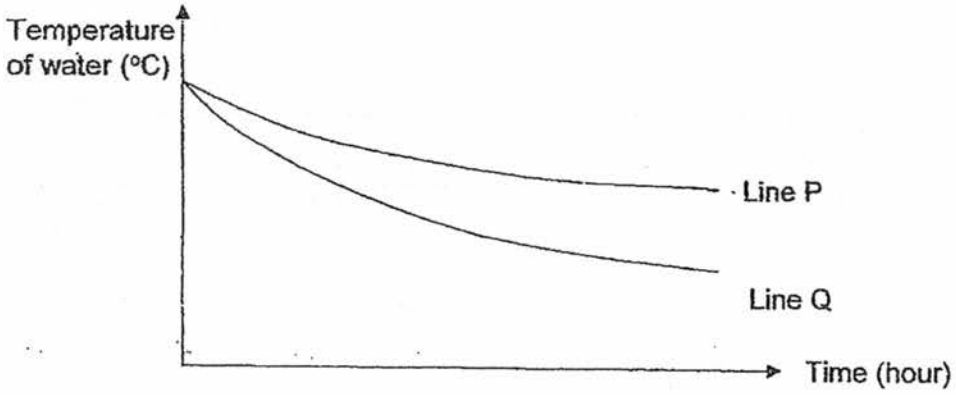
_____

Score ___/4

32. Sujesh conducted an experiment using two identical containers. One container was wrapped with the material, 'bubble wrap' as shown in the diagram while the other container was not wrapped. Both containers were filled with 200 cm^3 of water at 80°C.



Sujesh recorded the reading of the temperature of water over time. His results are shown in the graph below.



(a) Which line graph shows the results of the container with the bubble wrap? Explain your answer. [2]

_____

_____

_____

Score	/ 2

The diagrams below show how bird P looks like in warm and cold weathers. Bird P does not gain or lose weight in the different weathers.

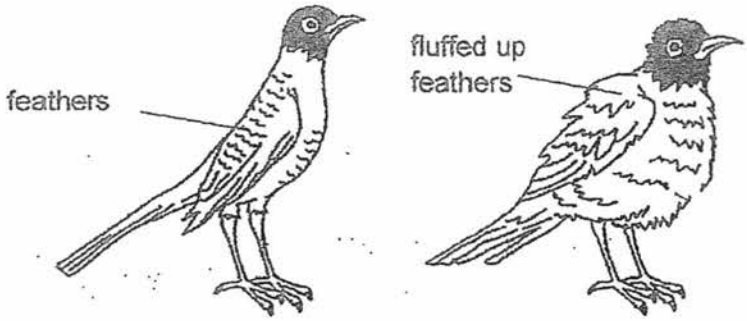


Diagram A Diagram B

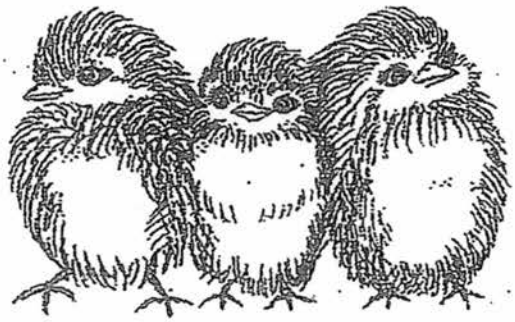
(b) Based on the results of Sujesh's experiment, which diagram, A or B, shows how bird P looks like in cold weather? Explain your answer. [2]

_____

_____

_____

The diagram below shows how some birds stay close together to keep warm.



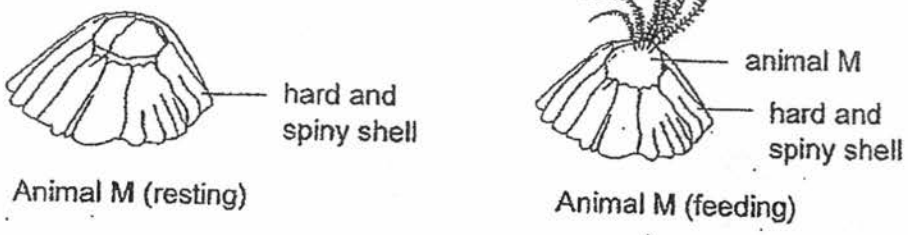
(c) Explain how staying close together helps the bird to keep warm their cold environment. [1]

_____

_____

Score	/ 3

33. The diagram below shows animal M coming out of its hard and spiny shell to feed.

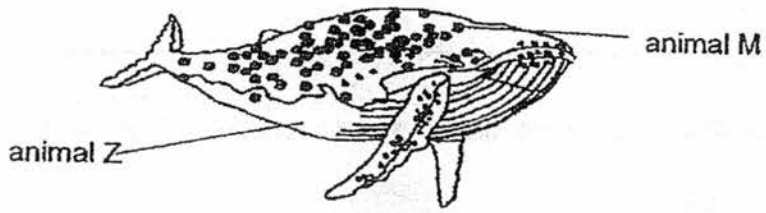


Animal M (resting)

Animal M (feeding)

(a) Some fish feed on animal M. How does the hard and spiny shell benefit animal M? [1]

Animal M usually attaches itself on a rock. It also attaches itself on the back of animal Z as shown below.



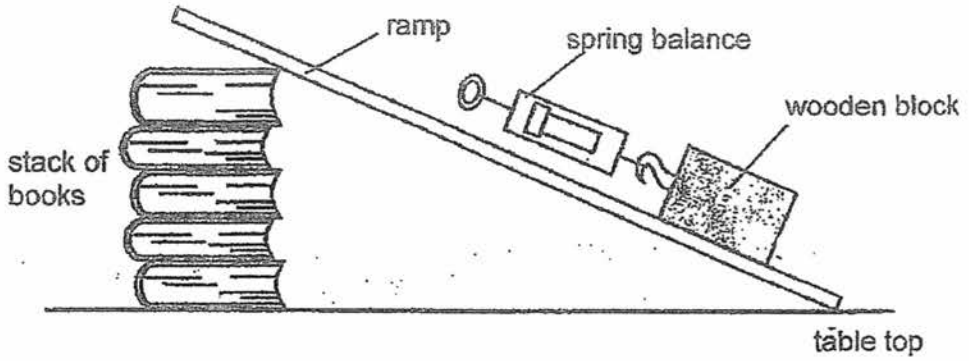
(b) Give two reasons why it is an advantage for animal M to attach itself on animal Z instead of attaching on a rock. [2]

Reason 1:

Reason 2:

Score	/3

34. Asha pulled a wooden block up a ramp using a spring balance as shown in the diagram below.



She recorded the amount of force needed to move the wooden block up the ramp. She then changed the number of books in the stack and pulled the block again. Her results are shown in the table below.

Number of books	Amount of force (unit)
1	65
3	80
5	90

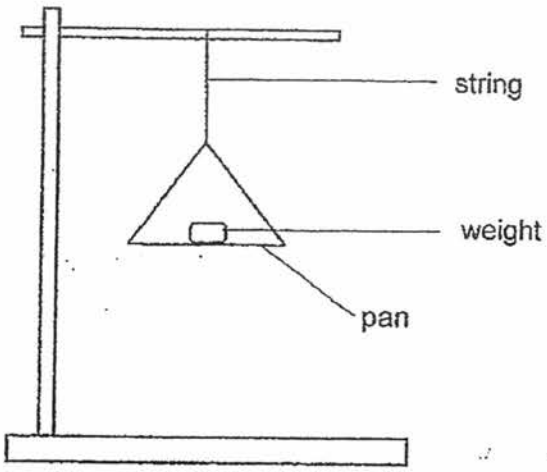
a) What was the relationship between the amount of force and the number of books used in the stack? [1]

b) State two forces acting on the wooden block when it was being pulled up. [2]

c) In the diagram above, draw arrows and label the two forces that were acting on the wooden block when it was pulled up. [1]

Score 4

35. Hafiz used the set-up below to compare the strength of two strings, X and Y.



He added weights, of equal mass, onto the pan until each of the strings broke. His results are shown in the table below.

String	Number of weights added to break the string
X	2
Y	8

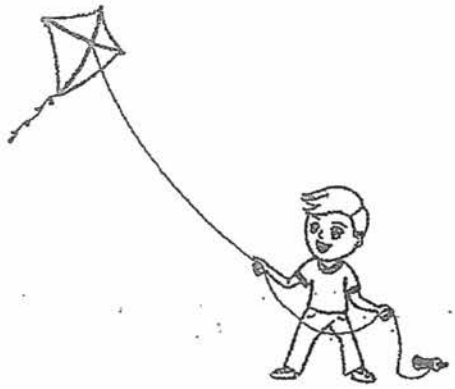
a) State one variable Hafiz has to keep the same to ensure a fair test? [1]

_____

_____

Score	/ 1

Hafiz wanted to string his kite.



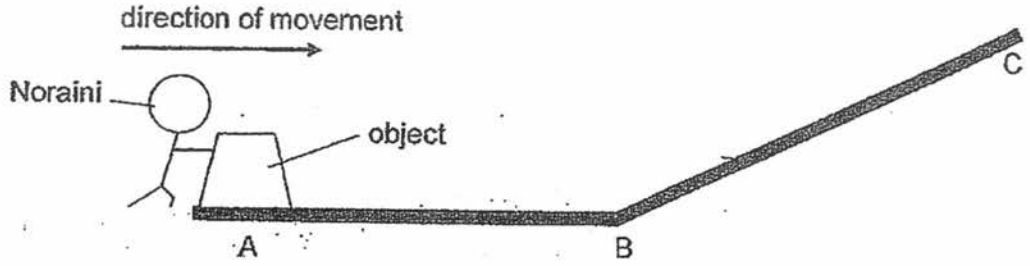
(b) Which string, X or Y, should he choose if he does not want the string to break easily? Give a reason for your answer. [1]

_____

_____

Score	/ 1

36. Noraini pushed an object over the same type of surface from point A to C as shown in the diagram below.



(a) Based on the diagram above, explain why Noraini needed more force to push the object from point B to C, than from point A to B. [1]

_____

_____

(b) Suggest one method that will allow Noraini to push the object from point B to C more easily. [1]

_____

_____

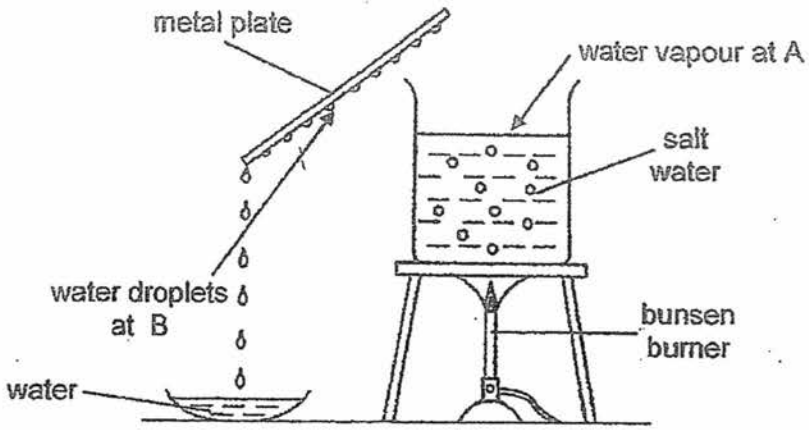
(c) Explain why your method stated in (b) will allow the object to be pushed from B to C more easily. [1]

_____

_____

Score	
	3

37. The diagram below shows a set-up used to obtain clean water from salt water.



(a) Based on the diagram, identify the two different processes involved in the set-up. Name the processes that occur at point A and point B. [1]

Process at point A: _____

Process at point B: _____

(b) If the metal plate is changed to a glass plate, explain clearly how this will affect the amount of clean water collected after a short period of time. [2]

_____

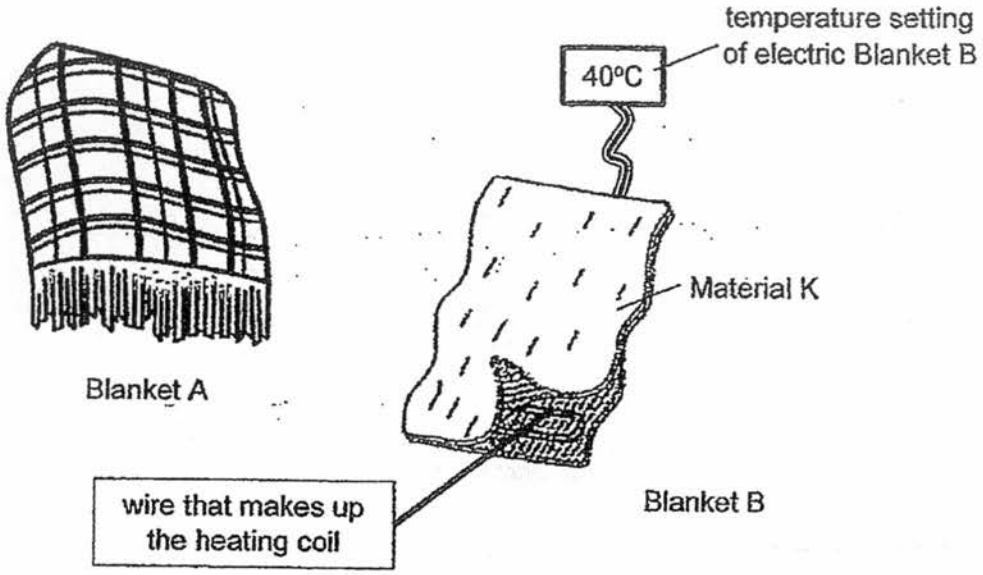
_____

_____

_____

Score	/3

38. The diagram below shows a normal wool blanket, Blanket A, and an electric blanket, Blanket B. Both blankets are of the same size and thickness.



(a) Which Blanket, A or B, would keep a person warmer? Explain why. [2]

_____

_____

_____

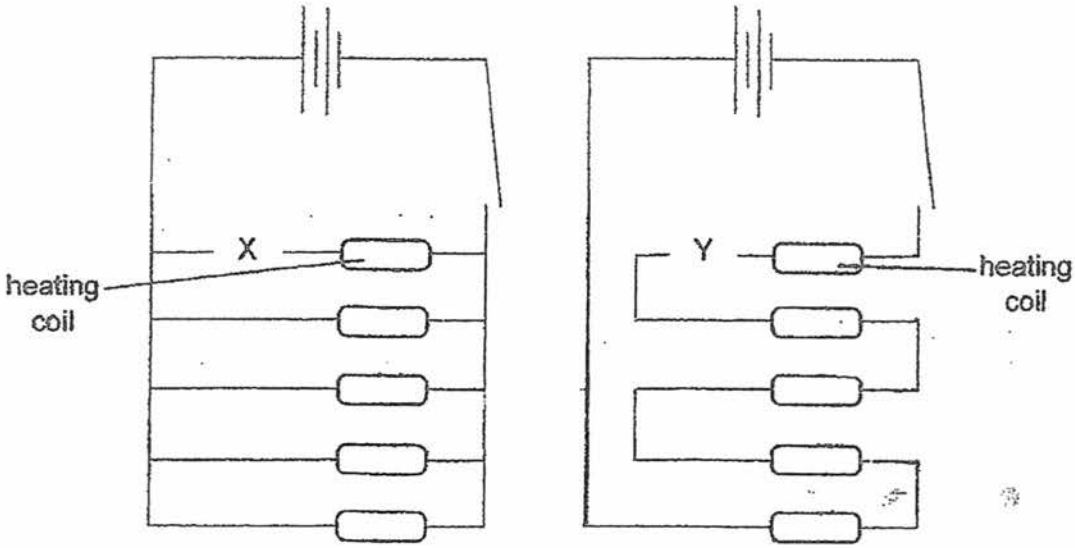
(b) Suggest a suitable property that Material K must have for it to be made into an electric blanket. [1]

_____

_____

Score	/ 3

The diagrams below show two possible ways how the circuit of the heating coil in the electric blanket can be connected.



Part of the wire broke at point X of Circuit A and at point Y of Circuit B.

(c) Explain how the broken wire in each circuit affects the amount of heat produced when the switch is closed? [2]

Circuit A:

_____

_____

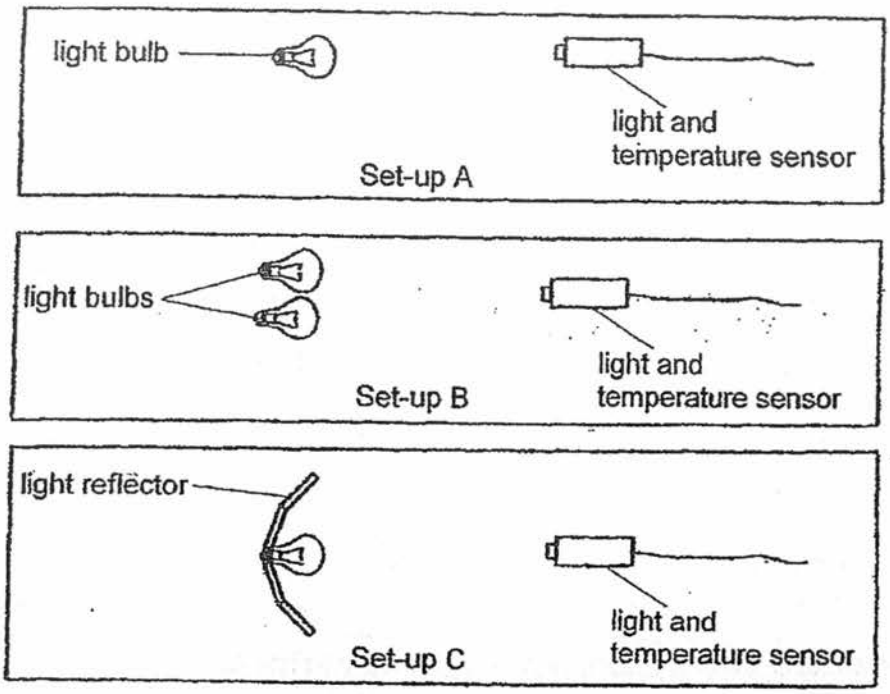
Circuit B:

_____

_____

Score 2

39. An experiment was conducted to determine which set-up, A, B or C, is best suited for use in a classroom as shown in the diagram below.



Set-up	Amount of light detected (unit)	Temperature (°C)
A	200	31
B	400	34
C	400	31

The results are shown in the table above.

(a) Using the information given above, state two advantages of using set-up C in a classroom. [2]

Advantage 1:

_____

_____

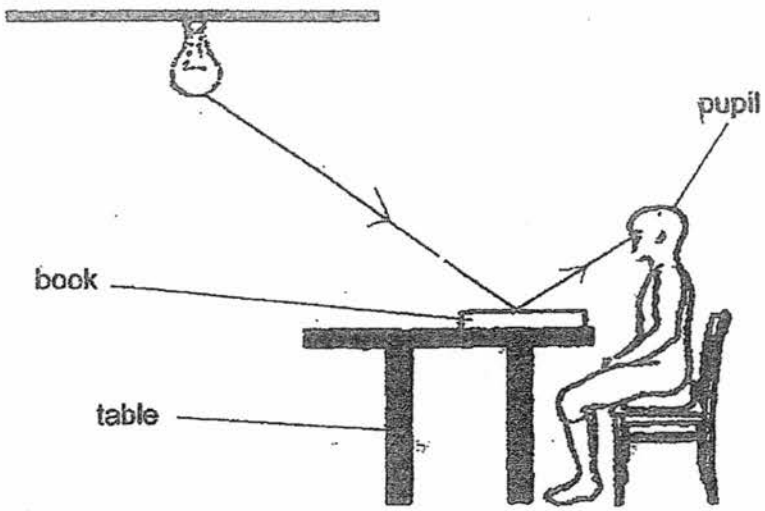
Advantage 2:

_____

_____

Score 2

(b) In the diagram below, draw in two arrows heads on the two lines provided, to show the path of light which enables the pupil to see the book. [1]

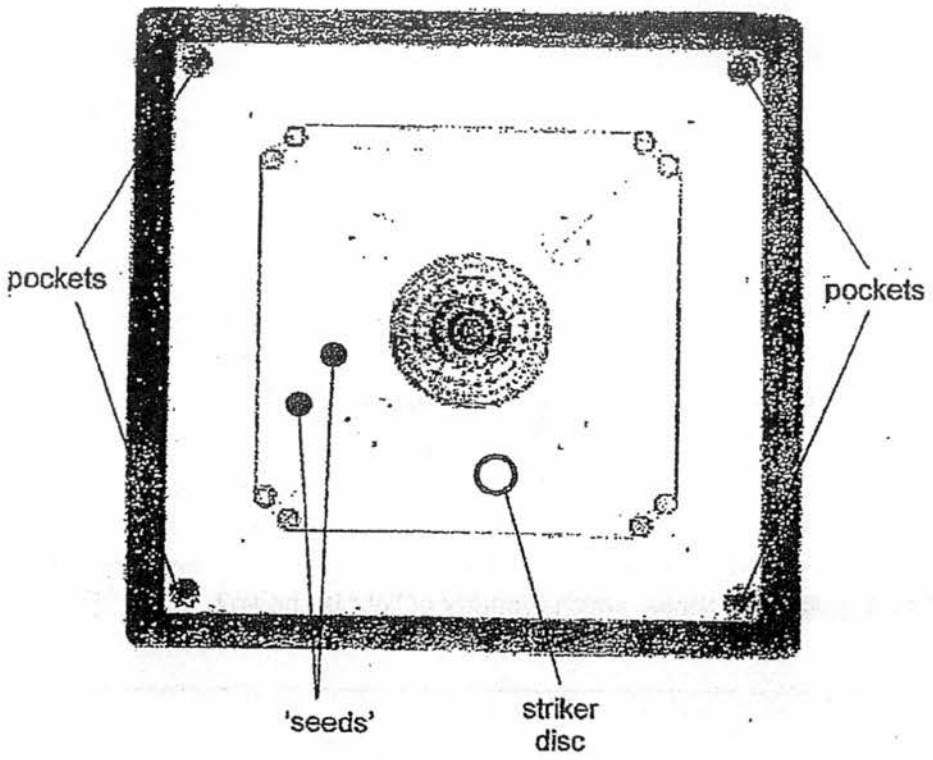


(c) Based on the diagram above, which property of light is shown? [1]

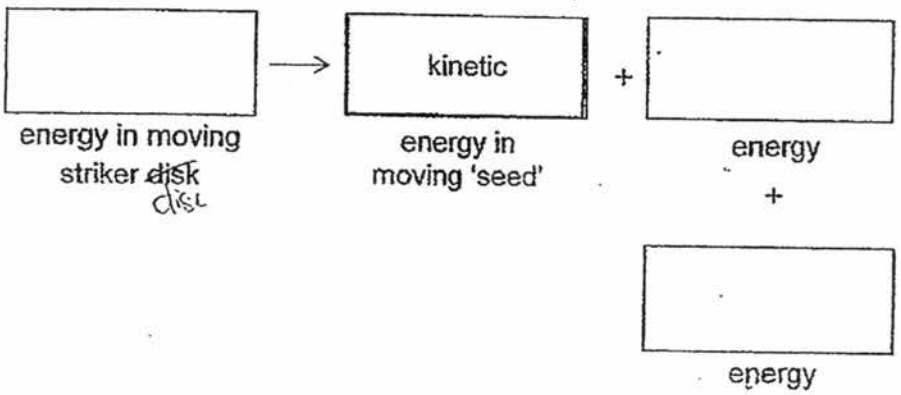
_____

Score	/2

40. In the game carom, a player uses his finger to flick the striker disc to hit the carom 'seeds' into the pockets of a wooden board.



(a) State the energy conversion that takes place when a striker disc hits a 'seed'. [1]



Score 1

(b) If the player changes the striker disc to a heavier one and the new striker disc travels at the same speed as that in part (a), explain how it would affect the speed of the 'seed'. [2]

(c) It was observed that the 'seed' slowed down after some time as it moved across the surface of the game board. Give an explanation for this observation. [1]

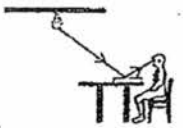
Score	/3

End of paper

EXAM PAPER 2017
LEVEL : PRIMARY 6
SCHOOL : TAO NAN SCHOOL
SUBJECT : SCIENCE
TERM : SA1

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

35a)	To ensure a fair test, Hafiz needs to keep the thickness/length of the string or material/weight/mass of the pan the same.	
b)	Y, because it was able to withstand/hold more weights before it broke so it was stronger than X.	☐ I am able to use the data/evidence from the table to compare the strength of String X and Y, using words like "more weights" instead of " Y needs 8 weights to break the string"
36a)	When the block was travelling from B to C it was opposing gravity, when it was travelling from A to B, it was not. Or When pushing the box from A to B, he needed to overcome friction only. From B to C, he needed to overcome both friction and gravity when pushing up the box. Hence more force is needed.	
b)	Add some wheels/ ball bearings to the object. Or Add lubricant/oil/ water/ powder to the surface from B to C (or under the object)	
c)	By adding wheels or adding lubricant to the surface, there is now less friction between the surface and the object, thus allowing it to move easily.	☐ I explained using the science **concept** of "reduced friction" ☐ I indicated which **two surfaces** where the reduced friction was acting between.
37a)	Process A: Evaporation/Boiling Process B: Condensation	
b)	Glass is a poorer conductor of heat /gains heat slower from the water vapour. This would lead to less/slower condensation of the water vapour and less water collected at the end of the experiment.	☐ I showed **comparison** in (i) difference in the heat conductivity between metal and glass (ii) rate of condensation of water vapour (iii) amount of clean water collected
38a)	Blanket B. Blanket B has a heating coil to provide a heat source to keep a person warmer while Blanket A does not have a heat source/ or Blanket A only reduces heat loss from a person's body the surroundings	☐ I showed **comparison** in how Blanket B keeps a person warmer
b)	Poor conductor of heat/electricity.	
c)	Circuit A: The circuit is still **closed** except for one pathway. Less heat is produced. or Electricity still flows through the other 4 pathways in the circuit. Less heat is produced. Circuit B: The circuit is open / electricity does not flow through the circuit. No heat is produced.	☐ I explained the science **concept** about close/open circuit causing electricity to flow or not flow through the heating coil. ☐ I state the how this **affects** the amount of heat produced(increase/decrease/no heat)

39a)	• Since the amount of light detected for one bulb with a reflector is the same as using 2 bulbs, it saves energy/ uses less energy for the same amount of light. • The classroom will be cooler. • The classroom will be brighter/has more light.	
b)	 There must be 2 arrow heads to show direction of light from:- light bulb to book, book to pupil.	
c)	Light can be reflected / travel in a straight line.	
40a)	Kinetic → **Kinetic energy (GIVEN)** + Heat + Sound	
b)	When the striker disc has a greater mass, the kinetic energy is greater and (more) kinetic energy will be **transferred** to the seed causing the speed of the seed to increase. or When the striker disc has a greater mass, the kinetic energy is greater and will hit the seed with greater impact causing the speed of the seed to increase.	
c)	Some of the kinetic energy of the seed has been converted into heat energy and sound energy. Or Friction/Frictional force has caused the seed to slow down.	

Tao Nan School

2017 Primary 6 Science Mid-Year Examination

Qn	Suggested answers	Checklist
29a)	Line Q. The plant in set-up D has the least number of leaves so the plant (or roots) took in least water as they lose the least amount of water through the (stomata of) leaves. Hence the water decreased the least as shown in Line Q.	☑ I used superlative to show comparison in the observation of leaves in different set-up. ☑ I linked the amount of water decreased/taken in by plant to the number of leaves. ☐ I linked amount of loss of water loss/evaporated from the stomata of leaves to the decrease of water loss in set-up D.
b)	He should use set-ups A and C.	
c)	Set-up C. The roots cannot take in water because it is wrapped in a plastic bag. Set-up C confirms/shows that the decrease in the amount of water level in set-up A, is due to the roots taking in the water/ presence of roots.	☑ I selected the correct set-up C as the control set-up. ☐ I explained set-up C is the control as the roots could not absorb water. (absence of I.V) ☐ I explained this showed/confirmed that any results (or decrease in water level) observed in set-up A is solely due to the IV (presence of roots)
30a)	So that the results of the experiment will only be affected by the presence of light and not by the type of seeds used.	
b)	• He should paint the clear glass box black, • change the red bean seeds to green bean seeds and • change the moist cotton wool to a dry cotton wool.	☐ I ensured that all variables in set-up Y were the same as set-up X except for the Independent/Changed Variable (presence of water) for a fair test to be conducted.
31a)	Organism X	☑ I selected a food producer in the food web.
b)	Population of R would decrease so population of S would decrease as S would have fewer R to feed on.	☑ I gave the cause: As population of R decreases/is wiped out by the disease, less R for S to feed on or S is affected by disease after eating R and hence dies. ☑ I gave the effect: Population of S decreased
c)	Organism S could move to another habitat/area/pond where more food is available. Or could adapt to eat P/Q or other animals/other food sources.	

32a)	P. The air in the bubble wrap is a poor conductor of heat so water in the container lost heat more slowly to the surrounding (air). Hence the temperature of the water decreases more slowly as showed in Line P.	☑ I gave the science concept that air in the bubble wrap is a poor conductor of heat. ☑ I explained how the air caused water in container to lose less heat/ lose heat more slowly. (Comparison) ☐ I stated clearly the direction of heat flow from source to destination.
b)	Diagram B. The bird's feathers in B fluffed up to trap air which is a poor conductor of heat so the bird's body loses less heat (or loses heat more slowly) to the surrounding air to keep the bird warm.	☑ I applied the concept from the experiment illustrated in (a) of the question ☑ I linked "fluffed up feathers traps air" and explained how air slowed down the heat loss. (Comparison) ☐ I stated clearly the direction of heat flow from source to destination.
c)	The birds stay close together so that there is smaller exposed surface area of their bodies which will reduce the rate of heat loss from their bodies to the cooler surroundings.	☑ I could identify the main cause – exposed surface area of the bird's bodies is reduced/less (Compare!) when birds huddle together. Effect: reduced heat loss from bird to the cold air.
33a)	Animal M can hide/stay/rest in the hard and spiny shell to avoid detection by its predator.	
b)	• Animal M is able to travel to more places/faster to get (more) food/get food more easily. • Animal M is able to get food/foodscraps from Animal Z. • Animal M is able to escape easily from predators on the back of Animal Z that moves (faster) rather than grow on stationary rocks. • Animal Z will eat/scare away the predators of M.	☑ I linked the benefit/advantage to survival as compared to if animal M attaches itself to the rock.
34a)	As the number of books increases, the amount of force increases.	☑ I am able to state how the independent variable (Number of books) affects the dependent variable (Amount of force needed to pull the books up)
b)	Gravity/ Gravitational Force and Friction/ Frictional Force	
c)