Temasek Primary School

Preliminary Examination

Primary Six Standard

2018

SCIENCE

(BOOKLET A)

Name: _____ ( ) Class: 6 ( )

Date : 27 August 2018

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

INSTRUCTIONS TO CANDIDATES

1. Do not turn over this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.
4. Shade your answers on the Optical Answer Sheet (OAS) provided.
5. This booklet consists of 23 printed pages and 1 blank page.

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

(56 marks)

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1. What is the function of the large intestine in our digestive system?

   (1) It digests the food.

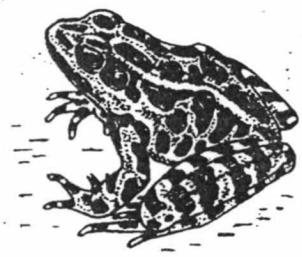
   (2) It passes the digested food to the blood.

   (3) It takes away water from the undigested food.

   (4) It passes the undigested food out of the body.

2. Study the two organisms, A and B, below.

Animal A



Animal B

Which of the following correctly describes animal A or B?

	Animal	Covered with scales	Lays eggs	Gives birth to young alive
(1)	A	No	No	Yes
(2)	A	Yes	Yes	No
(3)	B	Yes	Yes	No
(4)	B	No	No	Yes

(Go on to the next page)

3. The lungs and the heart are two organs in the human body. Which one of the following statements on the functions of the lungs or the heart is true?

(1) The lungs remove carbon dioxide from the body.

(2) The heart removes carbon dioxide from the lungs.

(3) The lungs transport oxygen produced by the heart.

(4) The heart takes in oxygen from the surroundings directly into the body.

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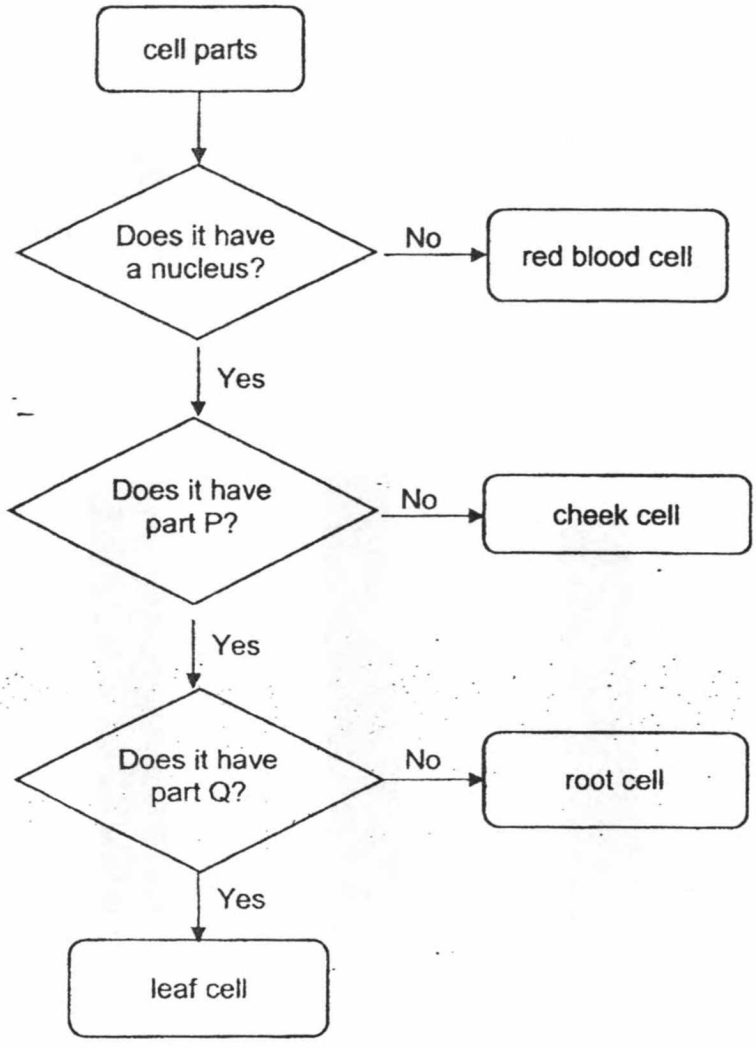
4. Study the flow chart below.



Which one of the following correctly identifies parts P and Q?

	Part P	Part Q
(1)	chloroplast	cytoplasm
(2)	chloroplast	cell wall
(3)	cell membrane	chloroplast
(4)	cell wall	chloroplast

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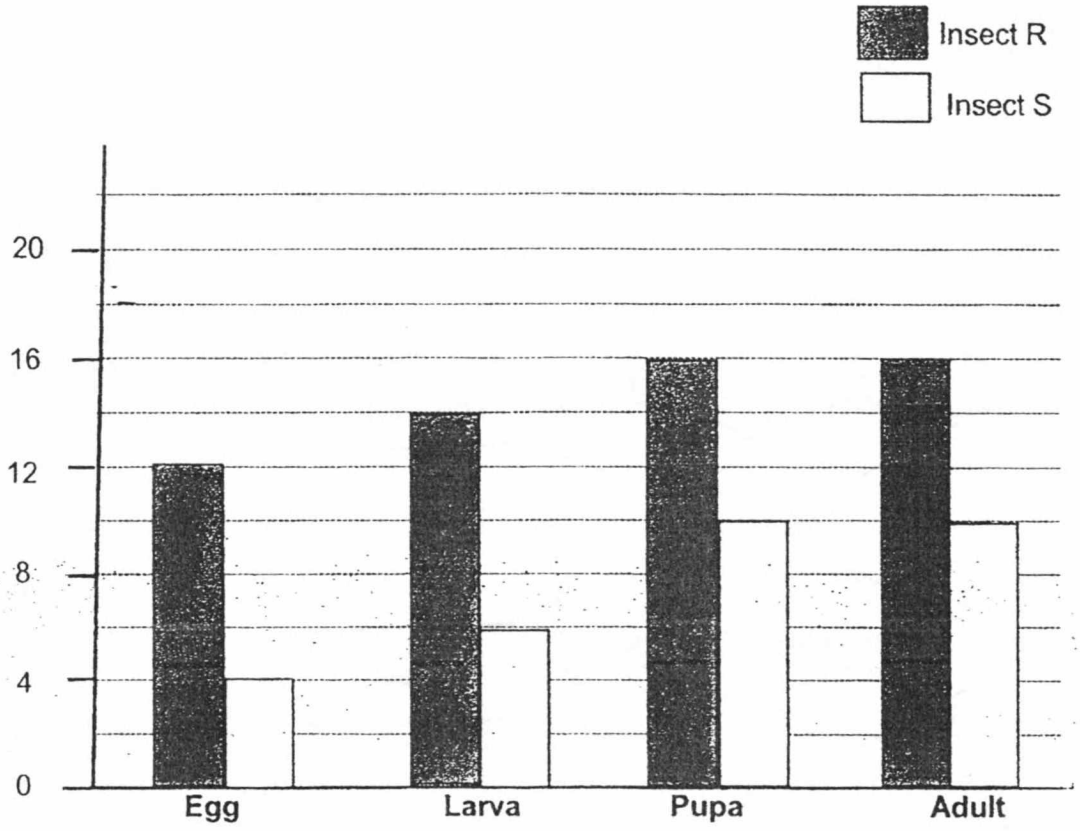
5. The graph below shows the number of days in each stage of the life cycle of Insect R and Insect S.



Stages of a Life Cycle

At which stage would Insect R and Insect S be on the 20th day after the eggs hatched?

	Insect R	Insect S
(1)	Larva	Pupa
(2)	Larva	Adult
(3)	Pupa	Pupa
(4)	Pupa	Adult

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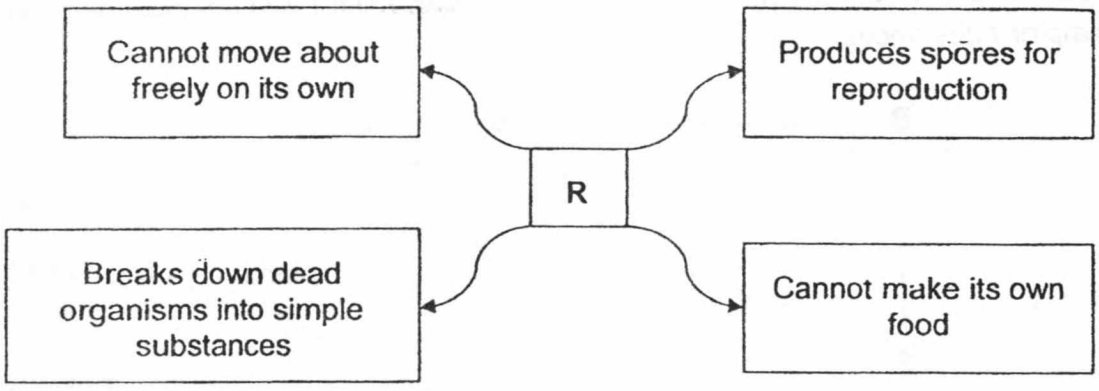
6. The diagram below shows the characteristics of an organism R.



What can organism R be?

A bacteria
B mould
C fungus
D fern

(1) A and B only

(2) B and C only

(3) A, B and C only

(4) A, C and D only

7. Study the food chain below carefully.

A ⟶ B ⟶ C ⟶ D

Based on the food chain above, which one of the following statements is correct?

(1) Organism D is likely to have the highest population among A, B, C and D.

(2) Organisms B, C and D get equal amount of energy from organism A.

(3) Organism C is likely to have a lower population than organism B.

(4) Organism A does not have any energy to stay alive.

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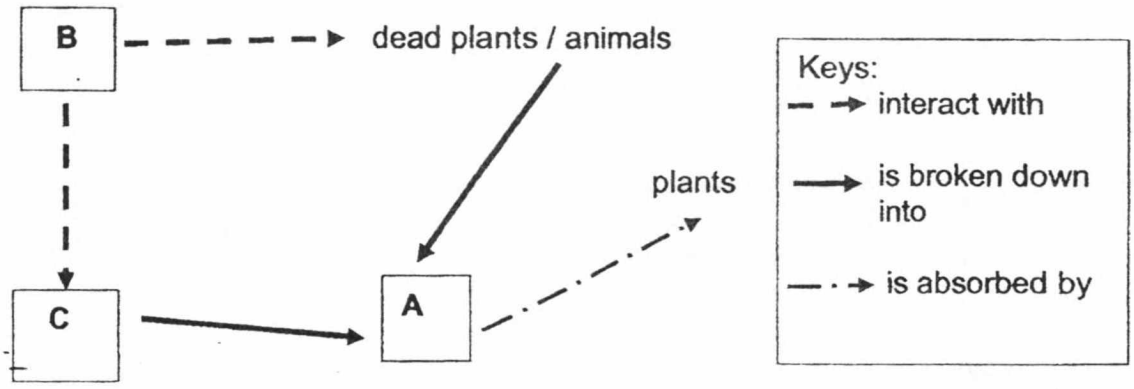
8. Decomposers enrich the soil with nutrients for the plants to grow well. The diagram below shows how decomposers interact with dead matter and change them into simpler substances.



Which of the following best represent A, B and C respectively?

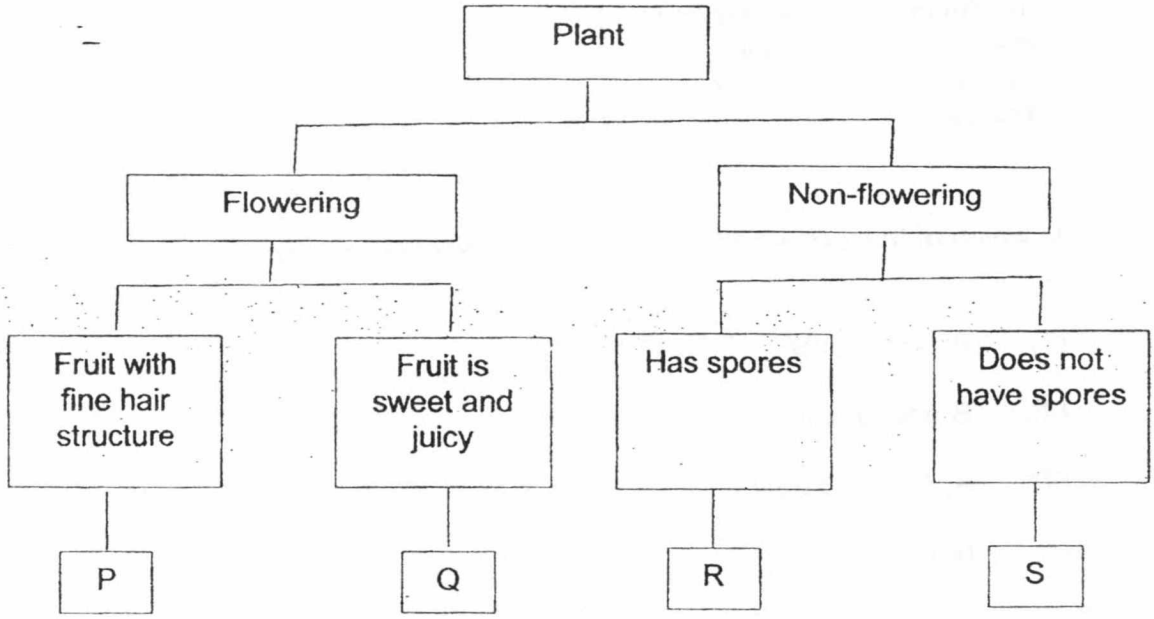
	A	B	C
(1)	carbon dioxide	predators	nutrients
(2)	water	fungi	nutrients
(3)	nutrients	prey	animal wastes
(4)	nutrients	bacteria	animal wastes

(Go on to the next page)

9. The table below shows the characteristics of two plants A and B.

Characteristics \ Plant	A	B
Does it disperse by wind?	No	Yes
Does it reproduce from seeds?	No	Yes

Using the information given above, identify the group Plant A and B belong to in the classification table below.



	Plant A	Plant B
(1)	Q	R
(2)	Q	S
(3)	S	P
(4)	R	P

10. Jasmine placed identical number of seeds over cotton wool in 5 identical jars, A, B, C, D and E. The seeds in each jar are exposed to the conditions as shown in the table below.

Jar A	Jar B	Jar C	Jar D	Jar E
sealed	sealed	open	open	open
damp cotton wool	damp cotton wool	damp cotton wool	damp cotton wool	dry cotton wool
in the garden	in the garden	in the freezer	In the cupboard	in garden
contained substance to absorb carbon dioxide	contained substance to absorb oxygen			

In which of the jars would the seeds most likely germinate?

(1) A and D only

(2) B and D only

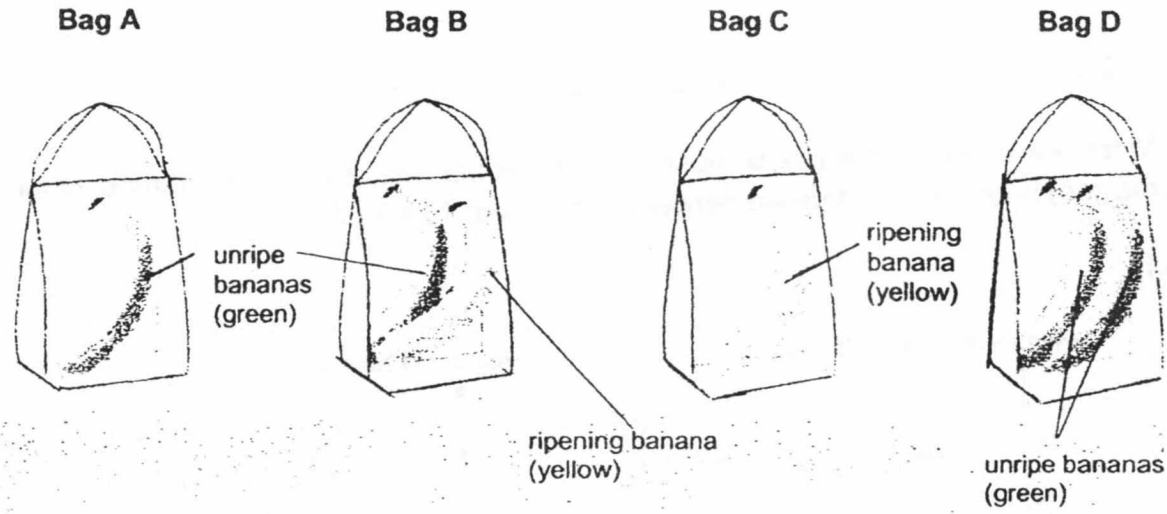
(3) A, C and D only

(4) B, C and E only

(Go on to the next page)

11. Bananas change colour from green (unripe) to yellow (ripening) as they ripen. Fruits produce a certain gas when ripening. This gas speeds up the ripening of the fruit.

Jerry wanted to see if he could make a banana ripen faster.
He took four similar plastic bags A, B, C and D and placed bananas in them as shown in the diagrams below. The bags are sealed.



Which of the following shows the bags must Jerry use and the correct reason for his choice to make his investigation a fair test?

	Bags	Reason
(1)	A and C	to find out which banana ripens first
(2)	B and C	to find out which banana ripens first
(3)	A and D	to find out if a ripening banana makes a difference to the ripening of an unripe banana
(4)	B and D	to find out if a ripening banana makes a difference to the ripening of an unripe banana

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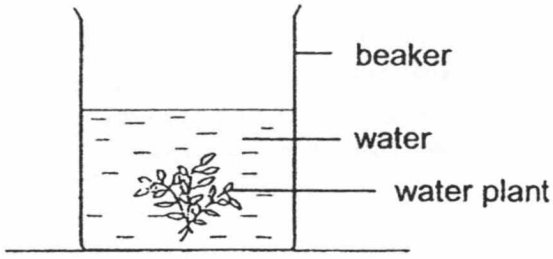
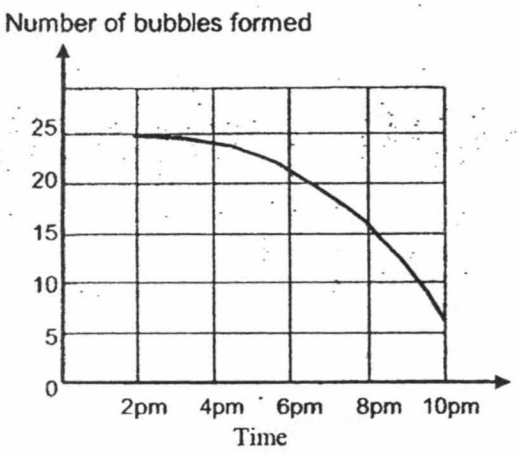
12. Jasmine set up the experiment as shown below and left it to stand in an open field from 1.30 p.m. to 10 p.m.



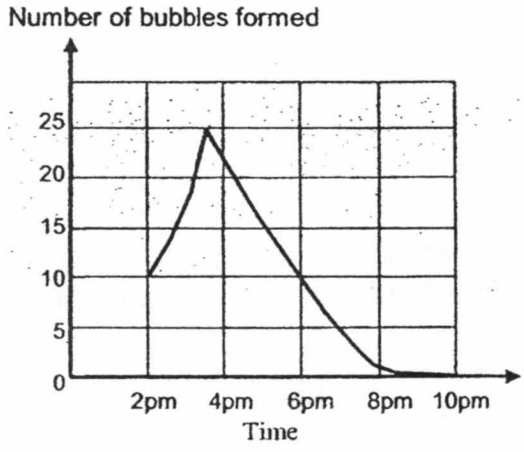
At 2 p.m., she noticed that air bubbles began to form on the leaves.

Which one of the graphs below most likely shows the rate at which the number of air (oxygen) bubbles were formed between 2 p.m. and 10 p.m.?

(1)



(2)



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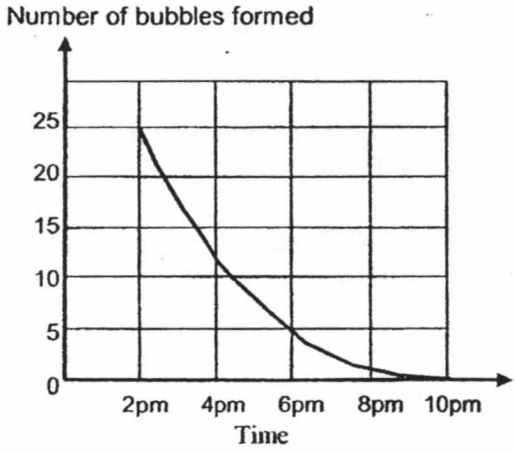
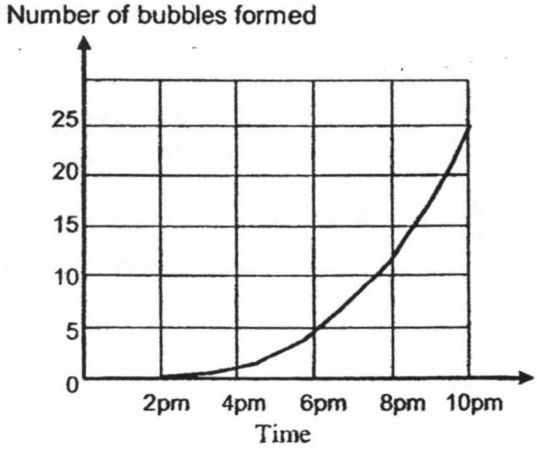


(4)



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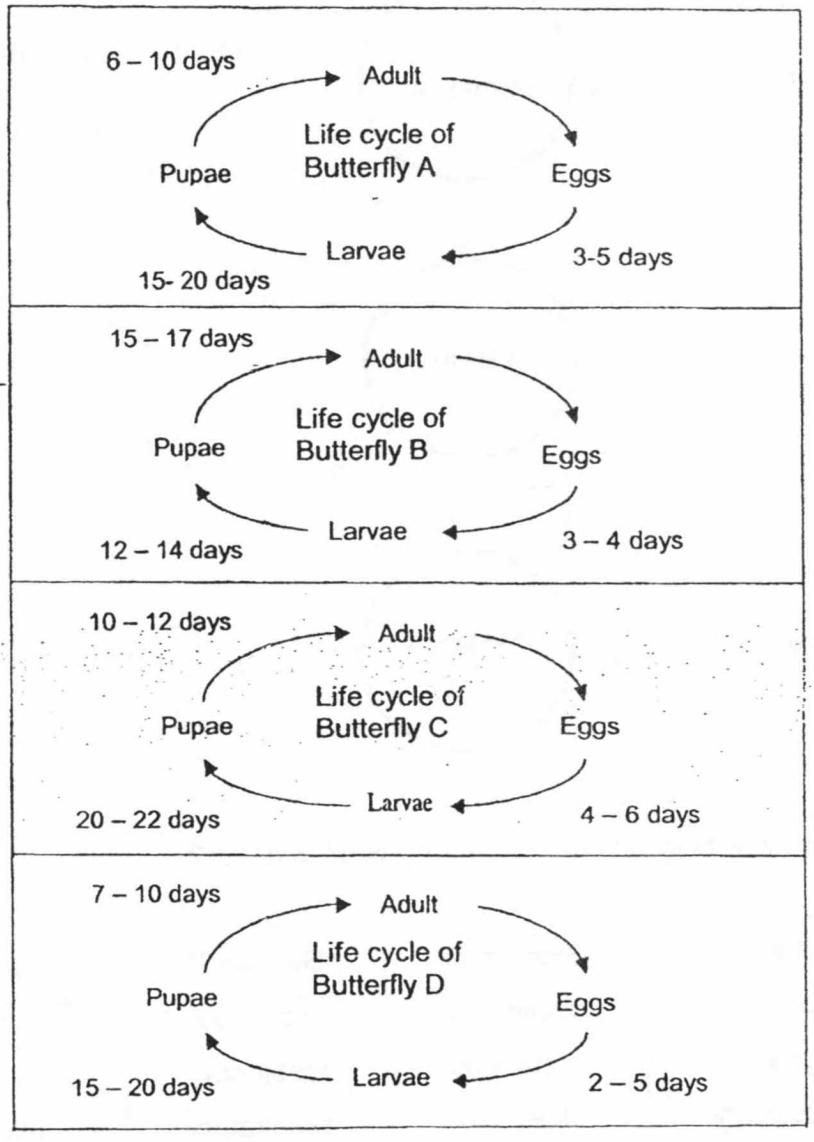
13. Study the life cycles of four species of butterflies, A, B, C and D. The young of the butterflies feed on the leaves of green plants.



Based on the information given, which species of butterfly is the most and the least destructive to the leaves of the green plants?

	Most destructive	Least destructive
(1)	A	D
(2)	B	C
(3)	C	B
(4)	D	A

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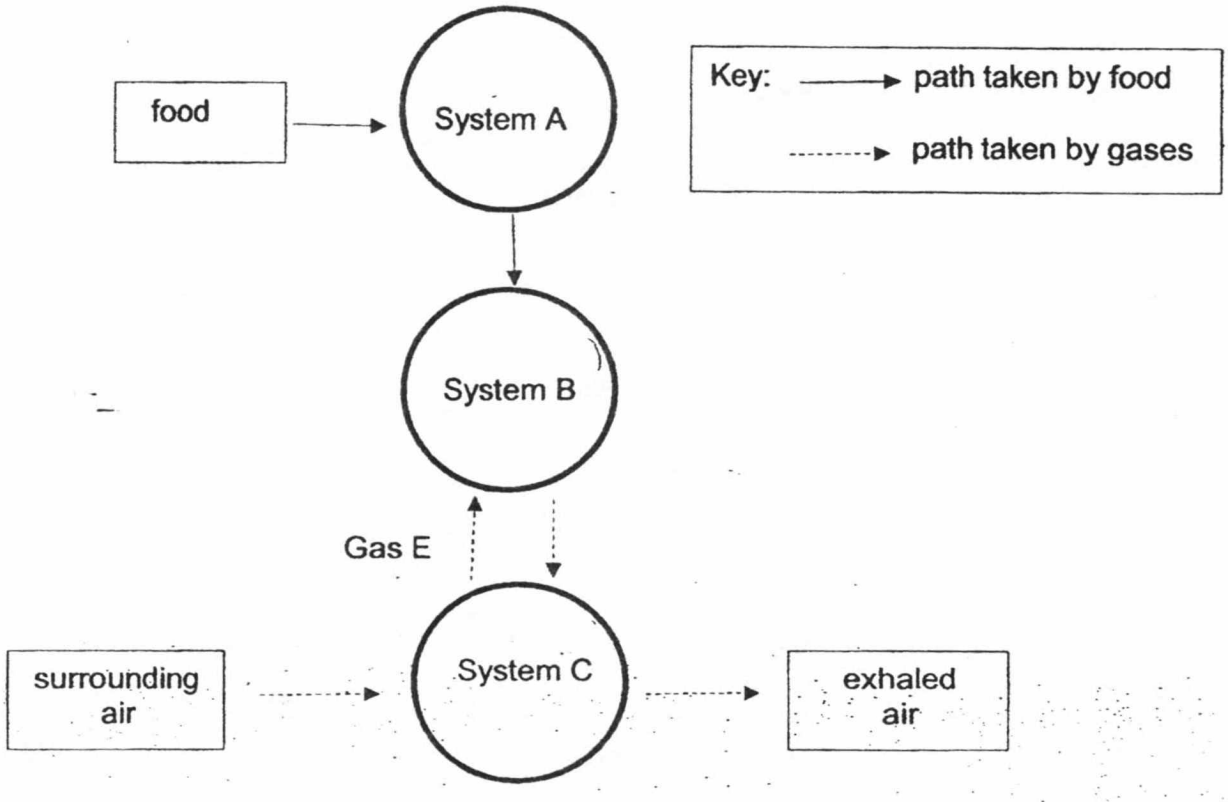
14. The diagram below shows how food and various gases are transported in the human body.



Which systems do A, B and C represent and what is gas E?

	System A	System B	System C	Gas E
(1)	circulatory	respiratory	digestive	carbon dioxide
(2)	digestive	circulatory	respiratory	oxygen
(3)	circulatory	digestive	respiratory	oxygen
(4)	digestive	respiratory	circulatory	carbon dioxide

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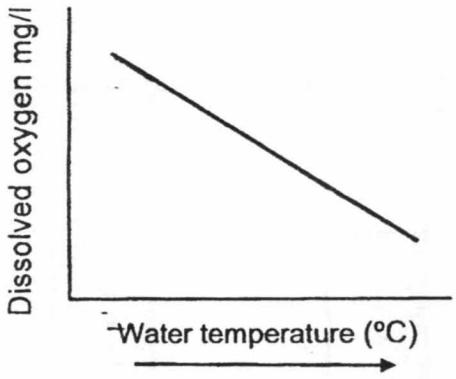
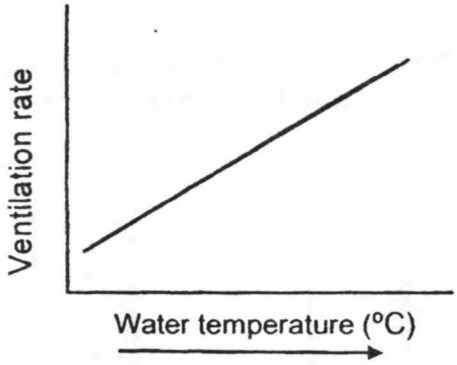
15. Water contains dissolved oxygen. Fish extract the oxygen they need by passing water over their gills. Ventilation rate refers to how fast fish pass water over their gills.





Based on the graphs above, which of the following correctly shows the relationship between the changes in water temperature, dissolved oxygen and the ventilation rate in fish?

	Water temperature	**Dissolved oxygen**	**Ventilation rate**
(1)	decreases	increases	increases
(2)	increases	increases	increases
(3)	decreases	decreases	decreases
(4)	increases	decreases	increases

16. Which of the following will **least** likely cause the greenhouse effect?

(1) flooding

(2) heavy traffic

(3) deforestation

(4) use of air conditioners

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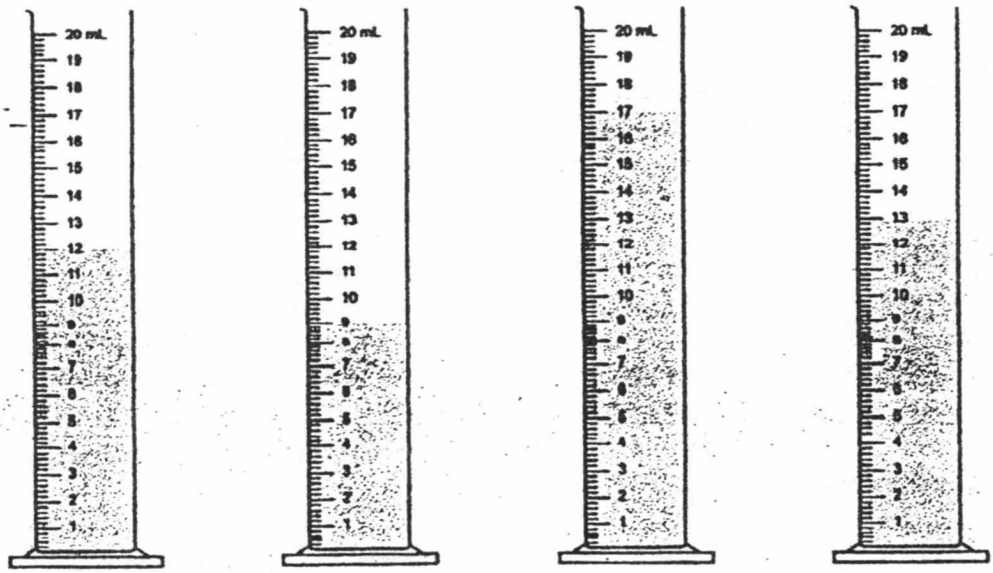
17. Two students wanted to compare the absorbency of four different brands of paper towel. They had equal-sized paper towels of different brands W, X, Y and Z. They prepared four measuring cylinders each with 20 ml of water.

They then poured water onto each paper towel until the paper towel could not absorb any more.

The diagram below shows the amount of water left in the measuring cylinders after they had stopped pouring water onto the paper towels.



Was their test a fair one?

(1) Yes, because they used the same amount of water on each paper towel each time.

(2) No, because each paper towel soaked up different amounts of water.

(3) No, because the paper towels were all of different brands.

(4) Yes, because each paper towel was of the same size.

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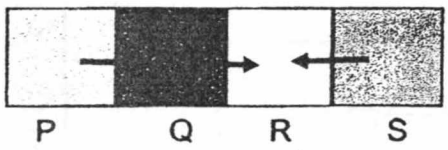
18. Four objects P, Q, R and S are arranged in a line as shown below. The arrows show the direction in which the heat energy travels between the objects.



Which of the following statements about the temperature of the objects is correct?

(1) R is the hottest object.

(2) P is colder than Q and R.

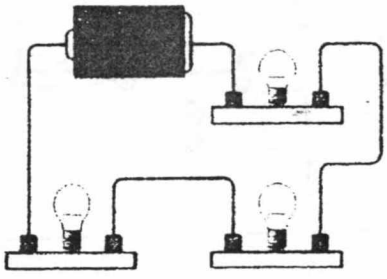
(3) S and R have the same temperature.

(4) Q is hotter than R but colder than P.

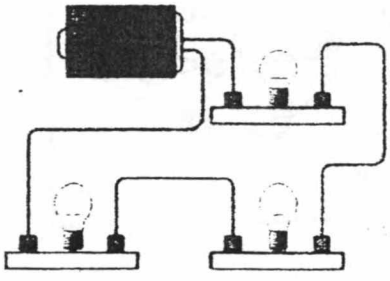
19. Some students set up four electrical circuits. Each circuit was made of a battery, three light bulbs and connecting wires. The students made sure that the light bulb and the batteries were in working conditions.

In which circuit will all the light bulbs light up?

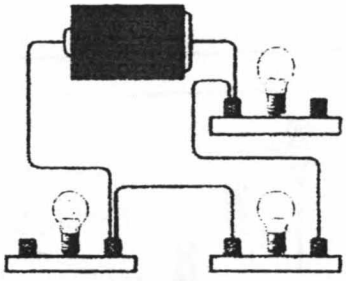
(1)



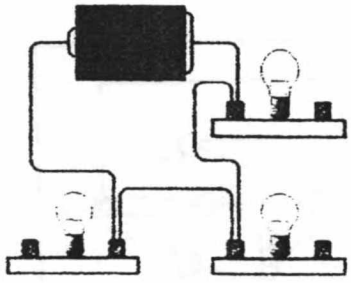
(2)



(3)



(4)



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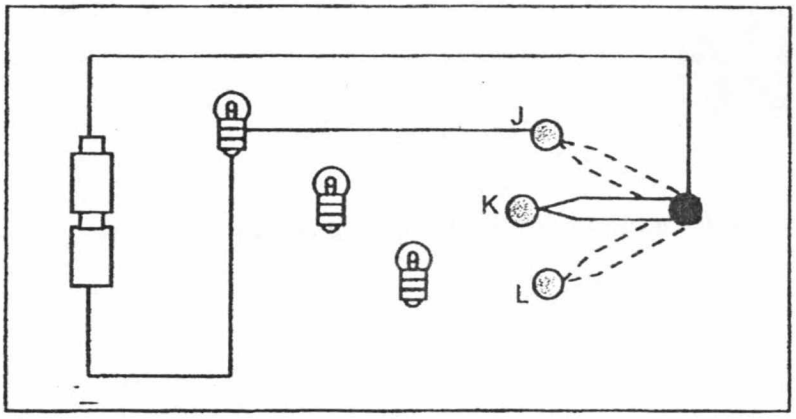
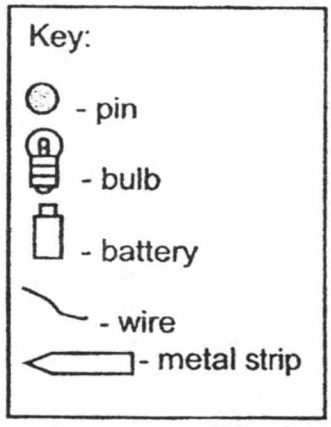
20. Ashley has an incomplete circuit set-up as shown below. The three-way switch was made using four pins and a metal strip.

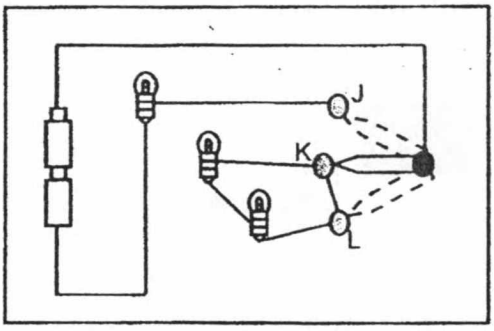




She had to add four wires to the circuit so that when the metal strip is moved to touch each of the pins J, K and L, only one bulb will light up at a time.

Which diagram correctly shows how Ashley should connect the four wires?

(1)



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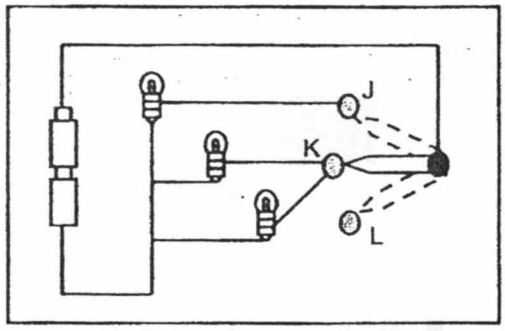

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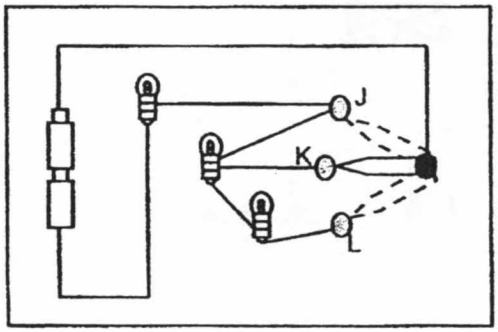

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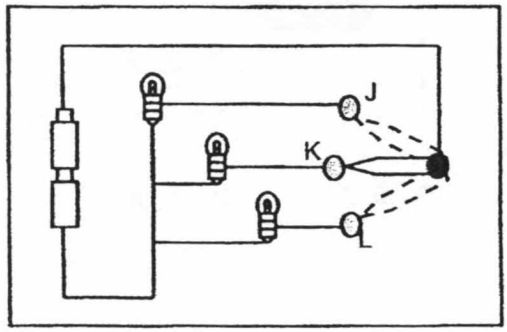

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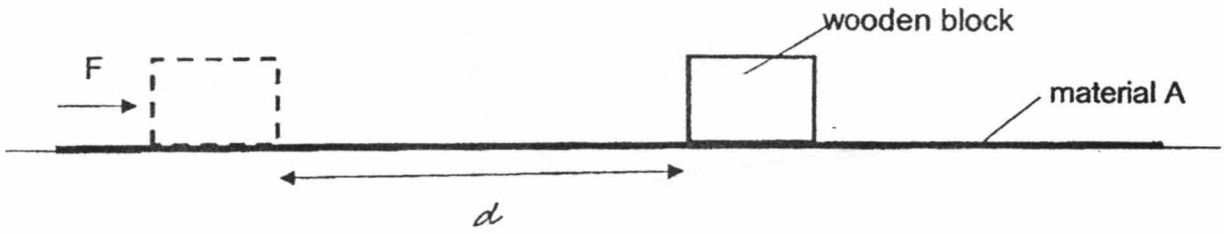
21. Marcus conducted an experiment. He placed a wooden block on a flat sheet made of material A. He then applied a force F to give the wooden block a push. The block moved forward and stopped at a distance d as shown.



Marcus repeated the experiment with two other flat sheets of materials B and C. He used the same wooden block and the same force F. He recorded his results in the table below.

Materials	**A**	**B**	**C**
Distance d(cm)	10	7	18

Based on his results, which material should he choose (from the best to the worst) to cover the floor of a bathroom?

	best choice ⟶		**worst choice**
(1)	B	A	C
(2)	C	B	A
(3)	B	C	A
(4)	C	A	B

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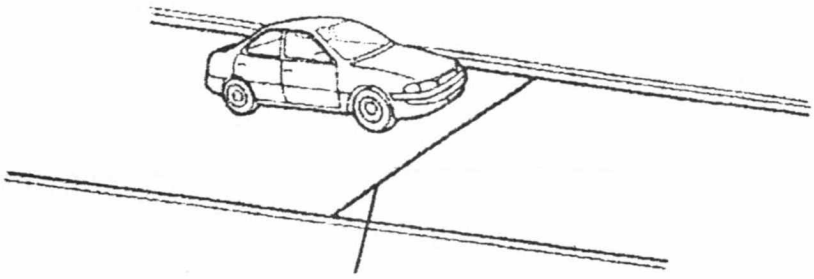
22. A gap is left between the two metal halves of a bridge. The gap contains air.



gap in bridge

What happens to the gap as the temperature rises and why?

(1) The gap becomes larger because the metal contracts.

(2) The gap becomes smaller because the metal expands.

(3) The gap becomes larger because the air expands.

(4) The gap becomes smaller because the air contracts.

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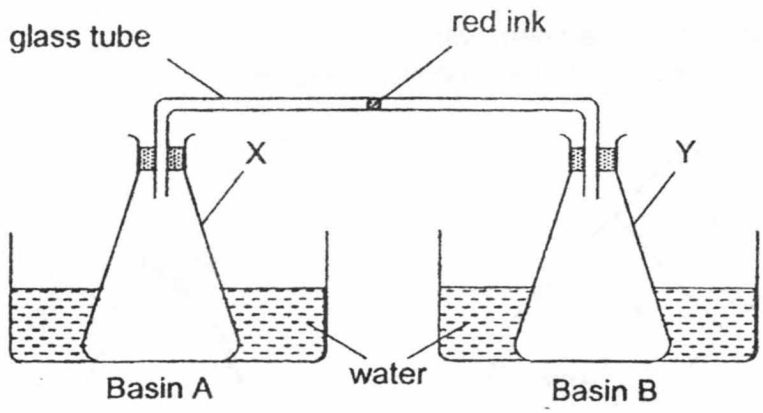
23. An experiment is set up as shown below.



A drop of red ink is placed in the glass tube which connects the two flasks, X and Y.
The flasks are then placed in basins of water at different temperatures.
Which one of the following will cause the drop of ink to move nearest to Flask X?

	Basin A	Basin B
(1)	Water at 10 °C	Water at 90 °C
(2)	Water at 10 °C	Water at 30 °C
(3)	Water at 90 °C	Water at 90 °C
(4)	Water at 90 °C	Water at 10 °C

24. Substance T freezes at 65°C and boils at 695°C.
Which one of the following shows the correct state of substance T at 75°C and at 450° C?

	State of substance T at	
	75°C	450°C
(1)	solid	gas
(2)	solid	liquid
(3)	liquid	liquid
(4)	liquid	gas

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25. Terry had two boxes, P and Q, of the same size. P was heavier than Q. He glued P and Q together to form one block.
With Q on top of P, the block tilted until it fell as shown in Diagram 1 below.

He then repeated the experiment with P on top of Q.
The block was tilted until it fell as shown in Diagram 2.

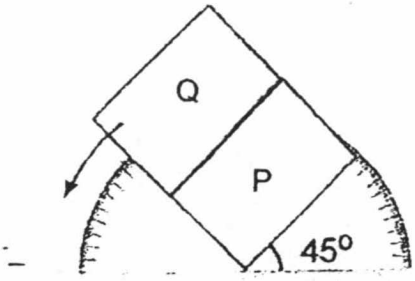


Diagram 1
block fell over at 45°

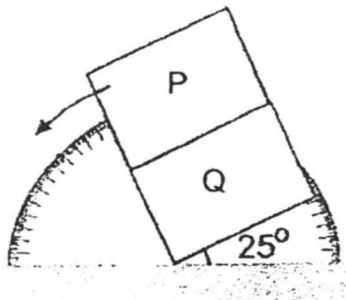
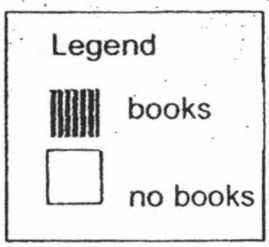
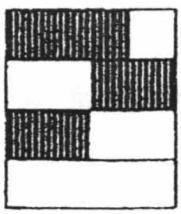


Diagram 2
block fell over at 25°

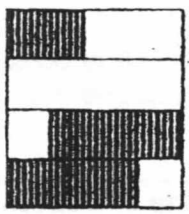
The diagram below shows four similar bookcases with the books arranged on the shelves.
Based on the information above, which bookcase shown below is most likely to topple when pushed?



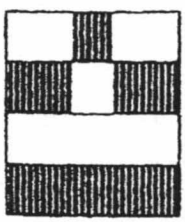
(1)



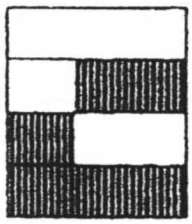
(2)



(3)



(4)



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26. Diagram 1 below shows a ring magnet lowered onto a tray of pins. Diagram 2 shows the bottom view of the magnet.

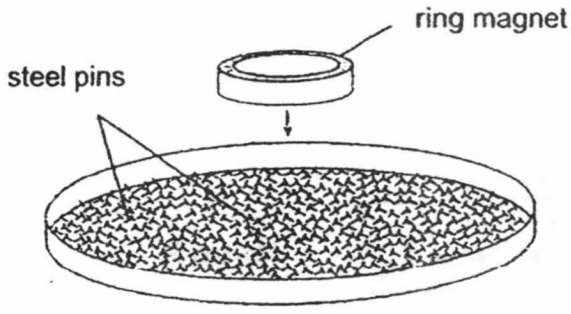


Diagram 1

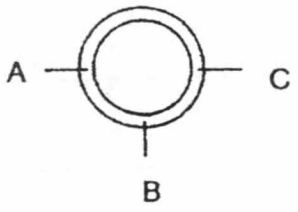


Diagram 2

Which one of the following most likely shows the number of pins attracted to the bottom of the ring magnets A, B and C?

	A	B	C
(1)	6	18	6
(2)	12	6	12
(3)	15	10	5
(4)	10	10	10

27. Benjamin placed two identical open bottles near a window where there was sunlight. He filled one bottle completely with liquid A and filled the other bottle completely with liquid B. The next day he observed that the bottles were no longer full.

What can Benjamin conclude from his observation?

A Presence of sunlight increases the rate of evaporation.

B Liquid A evaporates faster than liquid B.

C Both liquids evaporate.

(1) C only

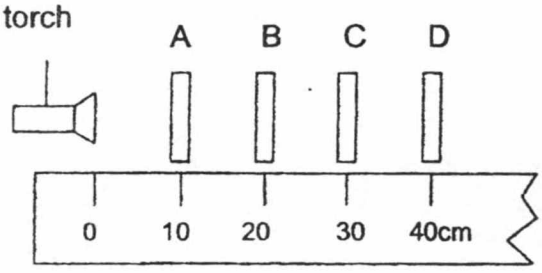
(2) A and B only

(3) B and C only

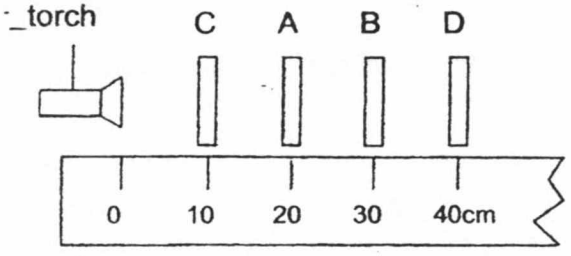
(4) A, B and C

(Go on to the next page)

28. An experiment was conducted to investigate whether light can pass through four sheets A, B, C and D made of different materials. The sheets were arranged in two set-ups P and Q as shown below.

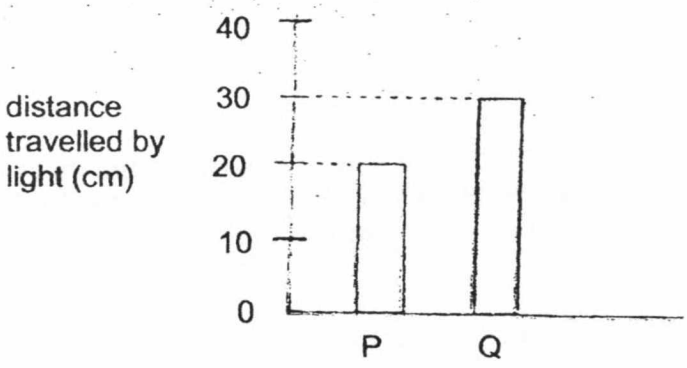


Set-up P



Set-up Q

The distance travelled by the light for each set-up was measured and the results are shown in the chart below.



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

	Does it allow light to pass through?			
	A	**B**	**C**	**D**
(1)	no	not possible to tell	yes	no
(2)	not possible to tell	yes	no	yes
(3)	yes	no	yes	not possible to tell
(4)	yes	no	not possible to tell	no

(Go on to Booklet B)

Temasek Primary School

Preliminary Examination

Primary Six Standard

2018

SCIENCE

(BOOKLET B)

Name: _____ ( ) Class: 6 ( )

Date : 27 August 2018

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

INSTRUCTIONS TO CANDIDATES

1. Do not turn over this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.
4. Write your answers in this booklet.
5. This booklet consists of 23 printed pages and 1 blank page.

Paper	Max Mark	Score
Booklet A	56	
Booklet B	44	
Total Mark	100	

Parent's Signature/Date: _____

For questions 29 to 41, write your answer in this booklet.

The number of marks available is shown in the brackets [ ] at the end of each question or part question. (44 marks)

---

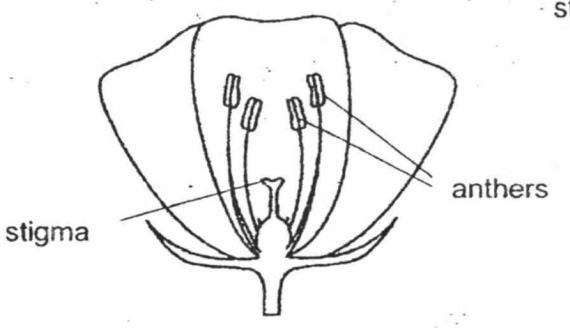
29. The table below shows the characteristics of three different plants A, B and C.

Plant	Does it have flowers?	Can the flower develop into a fruit?
A	Yes	Yes
B	Yes	No
C	Yes	Yes

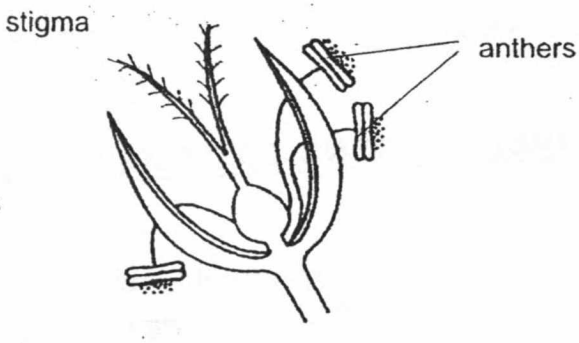
(a) The flower of plant B cannot develop into a fruit. Give a possible reason. [1]

_____

_____



Flower Of plant X



Flower of plant Y

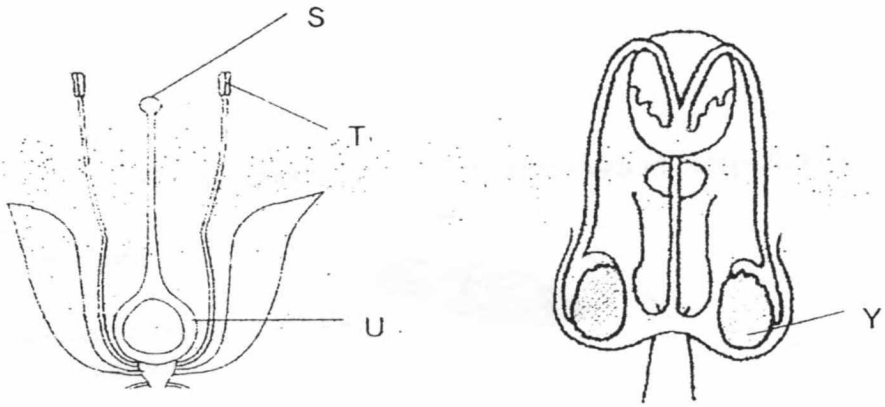
(b) State the most likely method of pollination for plant X and plant Y. [1]

(i) X _____

(ii) Y _____

(c) Describe how the characteristics of the parts of the flower in (b) (ii) helps it to be pollinated. [1]

(d) Give one advantage of seed dispersal for plants. [1]

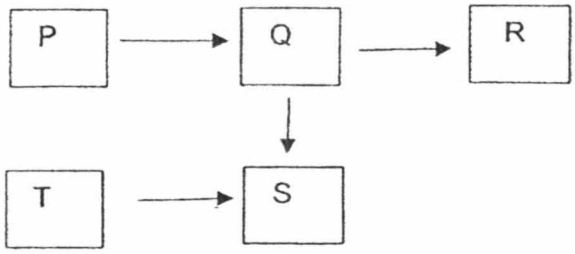


(e) One of the above parts S, T or U has the same function as part Y in the male human reproductive system. State the letter representing this part and its function. [1]

(Go on to the next page)

SCORE	5

30. The food web below shows the food relationships of organisms P, Q, R, S and T. Study the food web to answer questions (a) and (b).

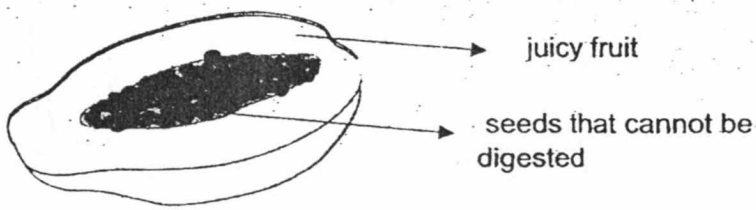


(a) How would the decrease in the number of organism R cause the number of organism S to increase? [1]

_____

_____

(b) The diagram below shows the seeds of organism P.



Explain how organism Q is able to help organism P in the dispersal of its seeds. [1]

_____

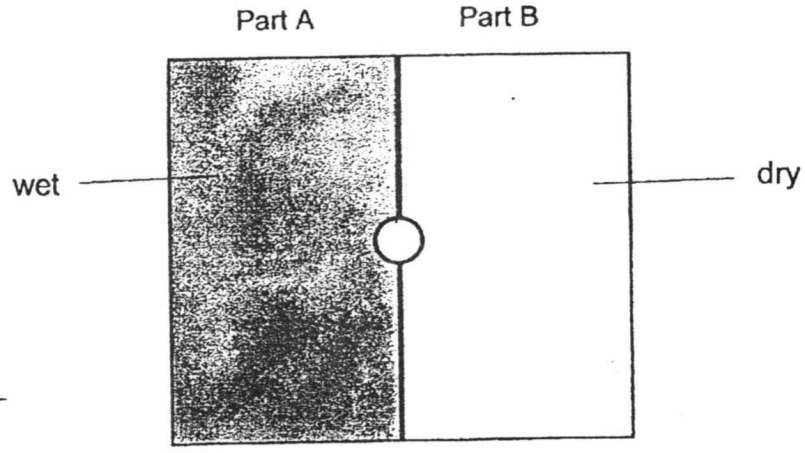
_____

_____

(Go on to the next page)

SCORE	2

31. Carmen wanted to find out the suitable living conditions for organism X. She used a tray consisting of two parts A and B. She filled part A with wet soil and part B with dry soil.



She placed a number of organism X in the middle of the tray in the area marked by the circle. After half an hour, most of the organisms were found in part A.

(a) From the results, state the living condition suitable for organism X. [1]

_____

_____

(b) Why did Carmen release organism X in the middle of the tray in the area marked by the circle? [1]

_____

_____

(Go on to the next page)

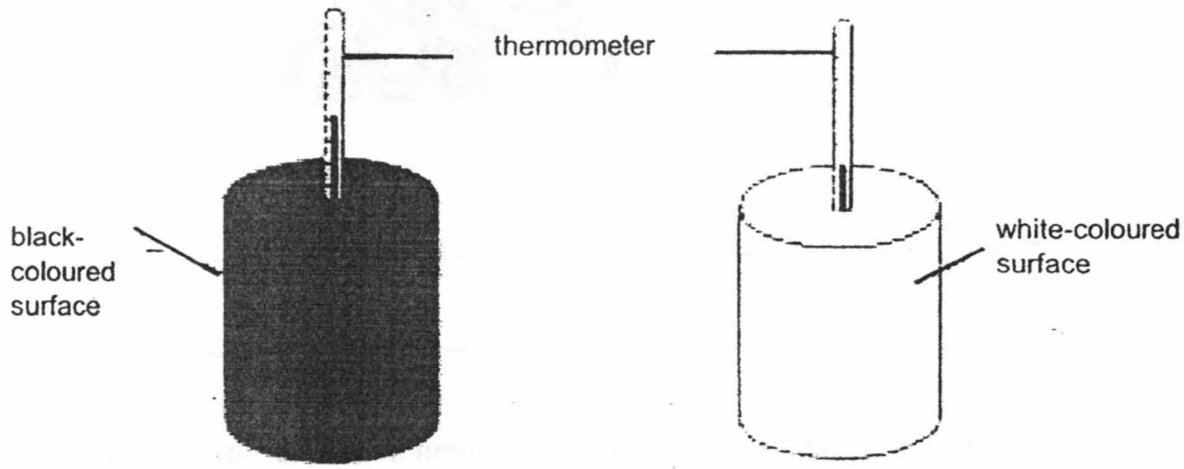
(c) An organism Y can survive well in dry soil. Carmen thought that the organisms might prefer dark conditions.

Given a piece of dark cloth and an identical tray with dry soil, describe an experiment for her to find out if organism Y prefers dark conditions. [1]

(Go on to the next page)

SCORE	/ 3

32. Carol conducted an experiment using two identical air-tight containers, A and B, as shown in the diagram below. Container A has a black surface while Container B has a white surface. She placed the containers under the sun. At first the thermometers showed the same reading.



After a few hours, she observed that the temperature of air in container A was higher than that in container B.

(a) What could Carol conclude from this observation? [1]

_____

_____

Bird P

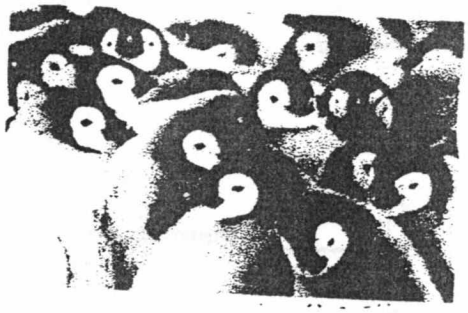
(b) Bird P lives in a very cold environment and usually stands with its back facing the sun. Suggest a reason for such behaviour. [1]

_____

_____

(Go on to the next page

(c) Bird P lives in large groups, staying very close to one another. Explain how staying very close to one another helps keep them warm. [1]



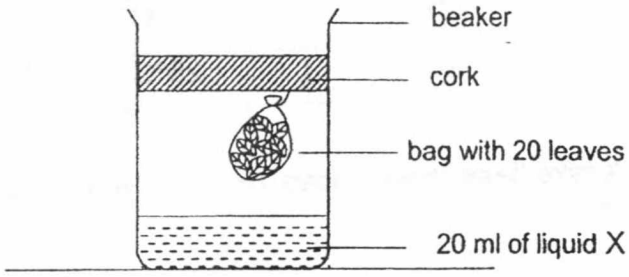
Bird Q also lives in a very cold environment. Bird Q sits close together, all facing outwards.

(d) Besides keeping warm, give a reason why sitting together like this helps Bird Q to survive. [1]

(Go on to the next page)

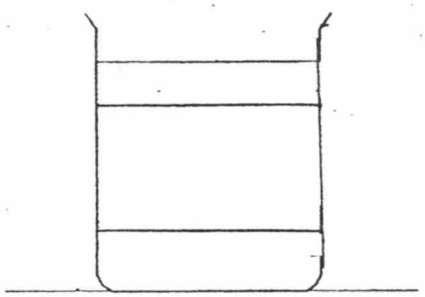
SCORE	
	4

33. Liquid X is red in colour and it turns yellow when the amount of carbon dioxide increases.
Anna wanted to investigate the effect of dead leaves on liquid X. She wrapped 20 fallen leaves in a bag with tiny holes and then hung it in a beaker as shown below.



Set-up T

(a) Anna's teacher commented that she needed a control set-up for her experiment.
Draw and **label** the control set-up for her experiment below. The beaker has been drawn for you. [1]



Control setup

Anna left both set-up T and the control set-up in a room with a temperature of 25°C for 5 days. She observed that liquid X in set-up T turned yellow on day 5 but not in the control set-up.

(b) Explain why there was a change in the colour of liquid X in set-up T. [1]

_____

_____

(Go on to the next page)

(c) Anna prepared another two set-ups, A and B, which were similar to set-up T.

Set-ups	**No of leaves**	**Temperature**	**No of days for liquid X to turn yellow**
T	20	25°C	5 days
A	20	35°C	?
B	10	25°C	?

Would liquid X take '**less than 5 days**' or '**more than 5 days**' to turn yellow for each set-up? [2]

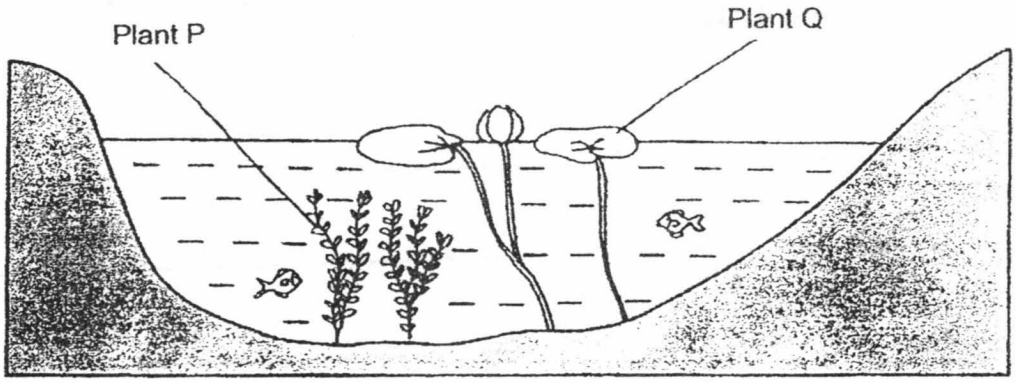
(i) Set-up A _____

(ii) Set-up B _____

(Go on to the next page)

SCORE	/ 4

34. Study the picture of a pond below carefully.



(a) Besides providing food for the animals in the pond, suggest another reason why plant P and plant Q are important to the animals in the pond. [2]

Plant P:

_____

_____

Plant Q:

_____

_____

(b) Sally found that when the population of plant Q increases, the population of plant P decreases. Suggest a reason for the decrease in the population of plant P. [1]

_____

_____

(c) When a lot of plant P die and start to rot, the level of oxygen in the pond decreases. Give a reason why the rotting plants cause a decrease in the level of oxygen. [1]

_____

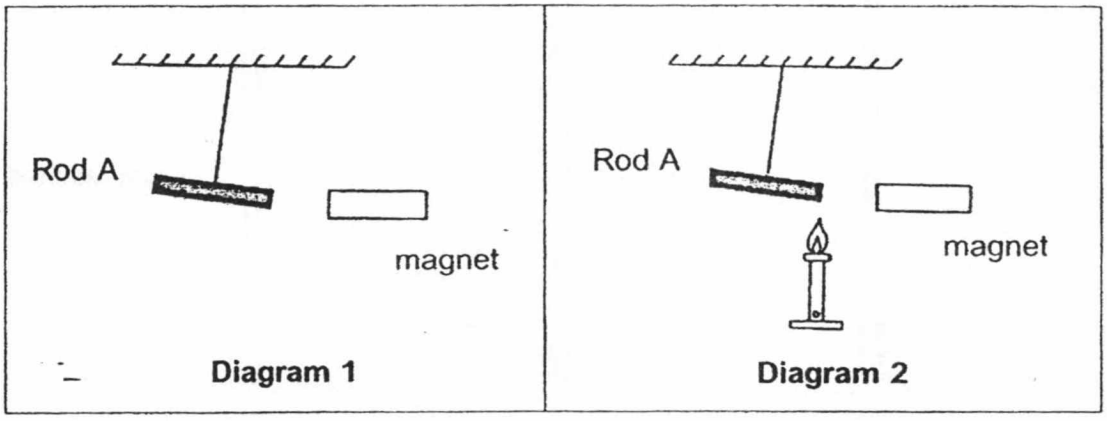
_____

_____

(Go on to the next page)

SCORE	/ 4

35. A magnet was brought near Rod A which was tied to a string as shown in Diagram 1. A flame was then placed at one end of Rod A as shown in Diagram 2. After a while, Rod A started to move towards the magnet.



(a) Explain why Rod A moved away when a magnet was brought near it as shown in Diagram 1. [1]

(b) Explain why Rod A started to move towards the magnet in Diagram 2. [1]

(Go on to the next page)

SCORE	2

36. Ali placed a spring over a wooden rod. He pressed the spring down 2cm as shown in Diagram 2. Diagram 3 shows the height of the spring when Ali let go of it.

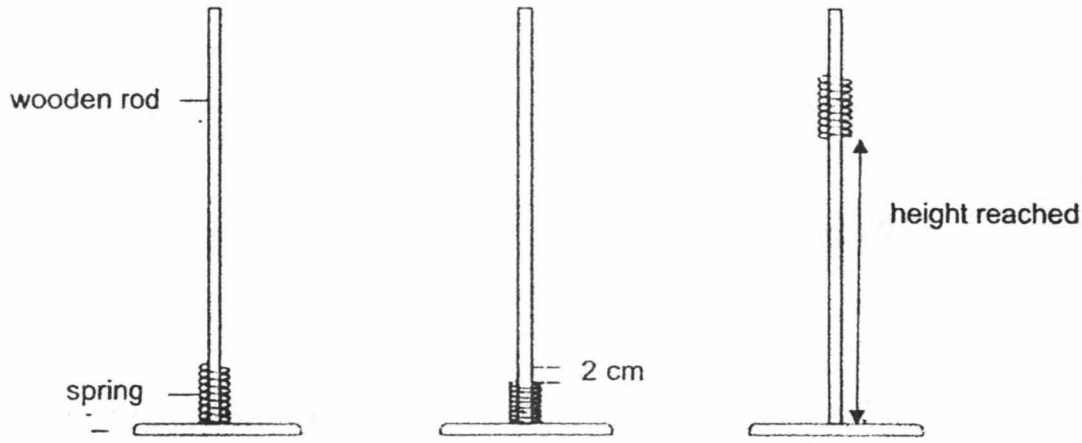
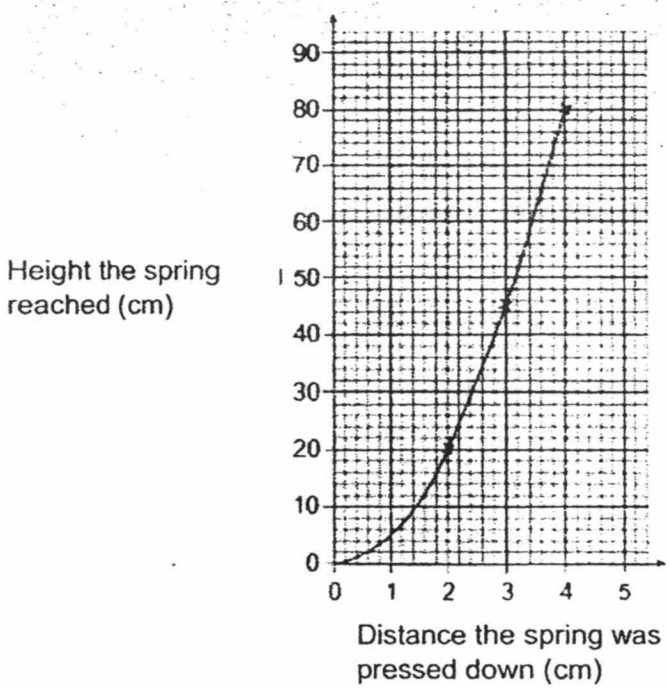


Diagram 1 **Diagram 2** **Diagram 3**

He repeated the experiment . He pressed the spring down more each time. His results are shown in the graph below.



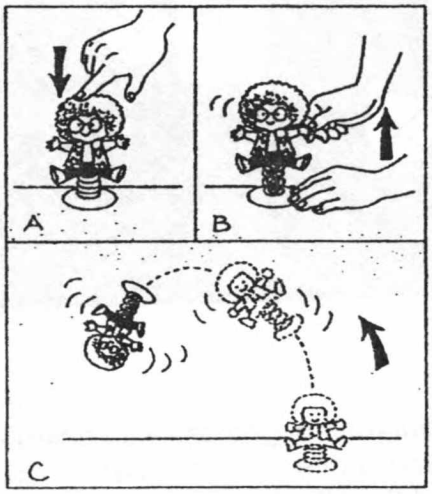
(a) Write down the energy conversion that takes place in Ali's experiment.

[1]

(b) Ali predicted that if he doubled the distance he pressed the spring down, the height the spring would reach would also be doubled.

How do the results in the graph show that his prediction was not accurate? [1]

The diagram below shows how a toy with spring works.



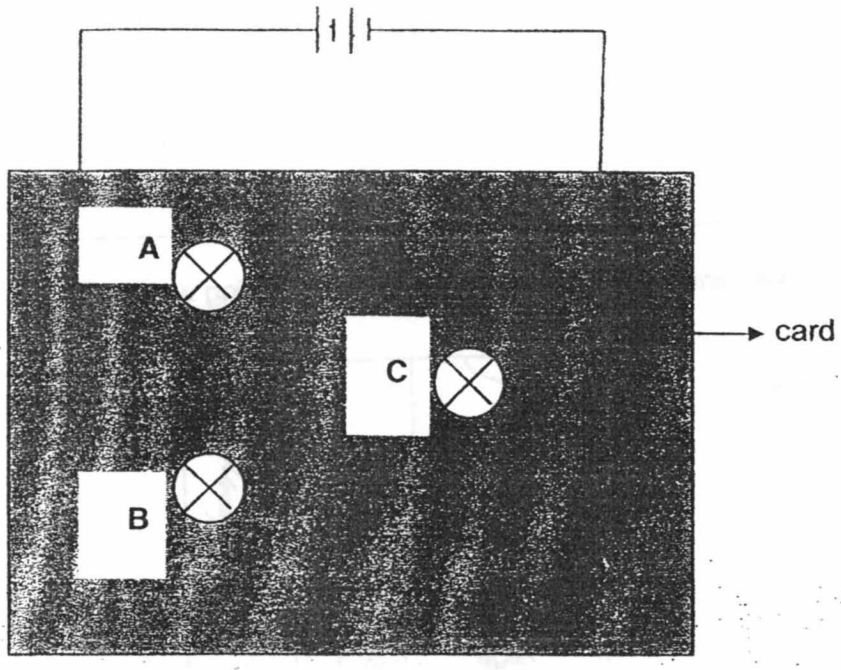
Ali wants to modify the toy so that the toy can reach a higher height when he releases the spring.

(c) Suggest what type of spring he should use. Explain why he chooses the spring. [1]

(Go on to the next page)

SCORE	/ 3

37. Alan set up a circuit with three identical bulbs and two batteries. He covered the connections to the bulbs with a piece of card as shown below. The bulbs could be seen through the holes in the cards.



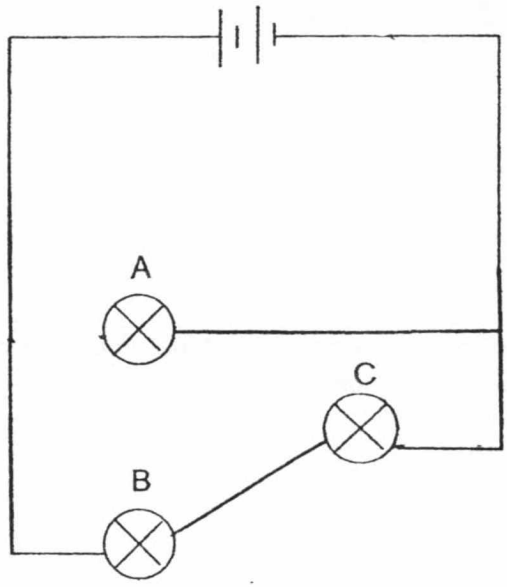
All the bulbs were lighted but their brightness was different.
Alan removed bulbs A, B and C one at a time. Before connecting each bulb back into the circuit, he observed the effect of the other two bulbs. He recorded his observation in the table below.

Bulb removed	Observation
A	Bulbs B and C lighted up.
B	Bulb C did not light up. Bulb A lighted up.
C	Bulb B did not light up. Bulb A lighted up.

(Go on to the next page)

(a) Complete the circuit diagram below to show how the three bulbs could be connected.

[1]



(b) Which bulb was the brightest? Give a reason for your choice. [1]

_____

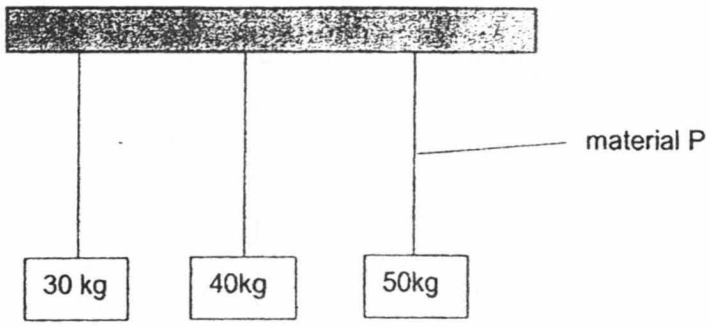
_____

(c) Alan added a switch to the circuit so that he could turn all the bulbs on and off at the same time.
Mark with an '**X**' against it on your circuit diagram in (a) where the switch could be placed. [1]

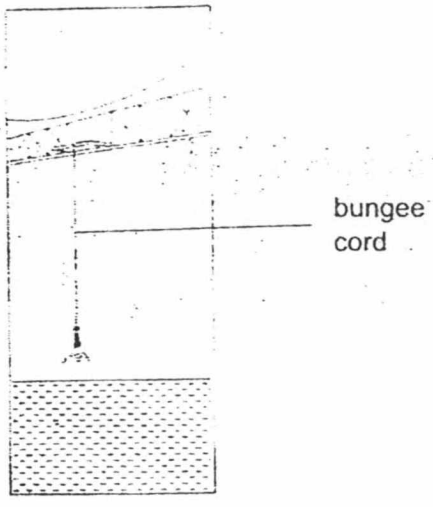
(Go on to the next page)

SCORE	
	3

38. Sam wanted to find out the strength of material P. He attached different loads up to 50 kg to material P as shown below.



He observed that the material did not break. He concluded that the material could be used to make the bungee cord for bungee jumping.



(a) His friend suggested that it cannot be concluded that material P is a good choice for a bungee cord based on his investigation. Explain why. [1]

_____

_____

(b) What could Sam have done further to test the strength of material P before deciding to use it as a bungee cord? [1]

_____

_____

(c) Suggest one property, other than strength, that material P should have in order for it to be used as a bungee cord. [1]

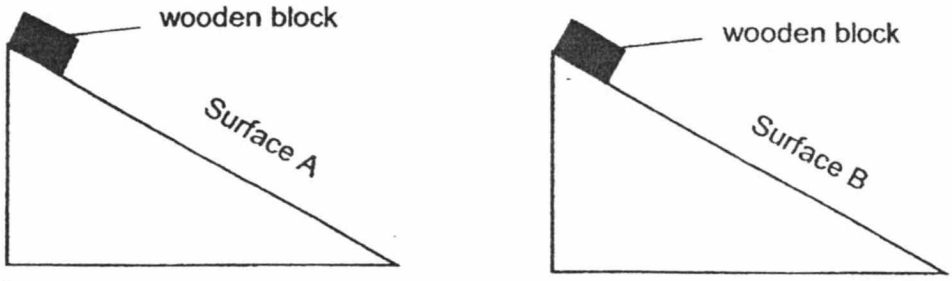
_____

_____

(Go on to the next page)

SCORE	/ 3

39. Boon Leng set up an experiment to find out if the surface of the ramp affects the time taken for a wooden block to slide down.
The diagrams below show the set-up of his experiment.



He recorded the time taken for the wooden block to slide from the top to the bottom of each ramp in the table below.

	Time taken to reach the bottom of the ramp(s)			
Type of surface	**1st reading**	**2nd reading**	**3rd reading**	**Average**
Surface A	5	5	5	5
Surface B	10	10	10	10

(a) Based on the results, what is the difference between Surface A and B? Explain your answer. [1]

_____

_____

(b) Name the two forces acting on the wooden block as it was sliding down the ramp. [1]

(i) _____

(ii) _____

(c) Suggest how Boon Leng should change the set-up to find out if the height of the ramp affects the time taken for the wooden block to reach the bottom of the ramp.

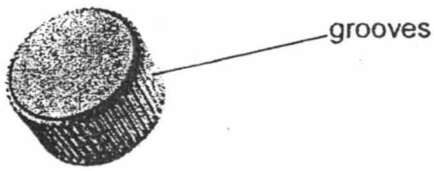
[1]

_____

_____

_____

Boon Leng noticed when his hands were wet, it was easier for him to twist open a bottle cap with grooves, as shown in the diagram below, than a bottle cap without grooves.



(d) Explain why it was easier for him to twist open a bottle cap with grooves

[1]

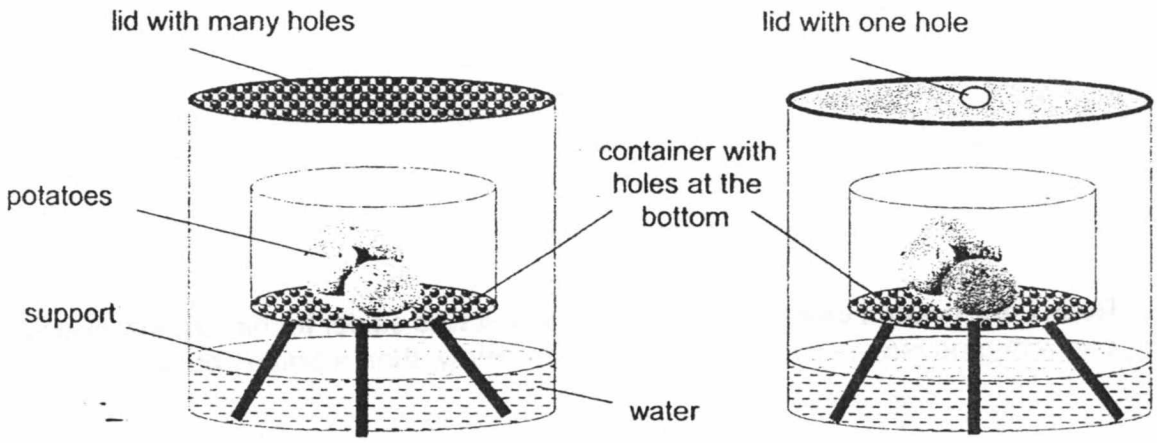
_____

_____

(Go on to the next page)

SCORE	4

40. Alexis wanted to cook some potatoes using steamers X and Y as shown below.



She placed both steamers over a heat source.

(a) Alexis observed that she needed to top up water in one of the steamers after some time.
Which steamer, X or Y, did she add more water to? Give a reason for your answer. [2]

_____

_____

_____

(b) Without making any changes to the steamer, suggest one way in which Alexis can help make the potatoes cook faster in both steamers. [1]

_____

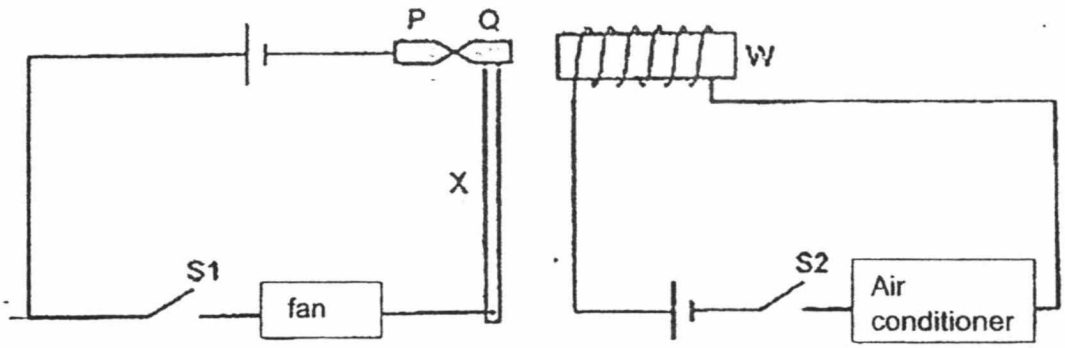
_____

(Go on to the next page)

SCORE	3

41. Peter designed an electrical system for a fan and an air conditioner in his room shown below. The system prevents both the fan and air conditioner from being turned on the same time.

W is an iron bar placed inside a coil of wire. P and Q are two iron pins in contact with each other. Pin Q is attached to a metal rod X and can move sideways.



On a hot afternoon, Peter closed switch S1 to turn the fan on.
His friend, Jack felt that the room was still too warm and closed switch S2 to turn the air conditioner on.

(a) What would happen to pin Q after switch S2 was closed? Give a reason for your answer. [2]

_____

_____

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

_____

_____

(c) Suggest a reason why Peter designed the system so that the fan and air conditioner would not be turned on at the same time. [1]

_____

_____

End of paper

SCORE	
	4

EXAM PAPER 2018

LEVEL : PRIMARY 6
SCHOOL : TEMASEK PRIMARY SCHOOL
SUBJECT : SCIENCE
TERM : PRELIM

SECTION A

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

Section B

Q28. (a) Plant B is probably a male plant that does not have an ovary and ovules to grow into a fruit. Hence i does not develop into a fruit.

(b) (i) X Animal pollination
(ii) Y Wind pollination

(c) The anther hangs outside the flower so that the pollen grain can be blown away by the wind.

(d) The young do not grow near the parent plant to prevent overcrowding.

(e) Part T. It produces male reproductive cells.

Q30. (a) Both organisms S and R feeds on organisms Q indicating that when organisms R decrease, there would be lesser competition between organisms R and S hence organisms S has more food to eat and increase

(b) When organisms Q eat organisms P, the seeds wiil go inside organisms Q's digestive system and would not digest. Once organisms, Q waste come out, the seeds would be carried away from its parent plant.

Q31. (a) Organism X prefers to live in wet soil than dry soil.

(b) The organisms have to move the same distance while searching for a suitable condition.

(c) She should cover half of the dry soil with dark cloth and wait for a certain period of time. Then she should count the number of organism Y on both sides and compare.

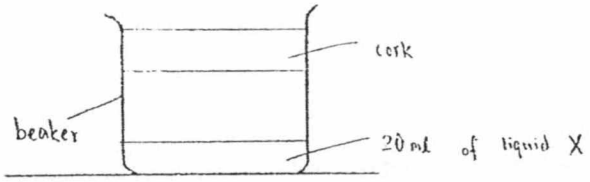
Q32. (a) Dark coloured surface absorb more heat than light coloured surface.

(b) Bird P lives in a very cold environment and needs warmth. When the dark coloured back face the sun, it absorbs heat for Bird P.

(c) Less exposed surface area to a surrounding will lead to less heat loss from body to surrounding.

(d) When keeping warm, Bird Q would also be able to spot predators easily and alert the other Bird Q to escape from the predator hence they would not be caught by the more predator easily.

Q33. (a)



(b) In set-up T, there was leaves for decomposition to occur, during decomposition, the leaves releases carbon dioxide hence liquid X would turn yellow.

(c) (i) Set-up A less than 5 days
(ii) Set-up B more than 5 days.

Q34. (a) Plant P: It releases oxygen during photosynthesis for the animals in the pond.

Plant Q: It provides shelter for the animals.

(b) When the population of Plant Q increases, there are more Plant Q to block sunlight from reaching, Plant P, preventing Plant P to photosynthesis of plant P decreases.

(c) The rotting plants are decomposing, competing for oxygen require for decomposition. Hence the level of oxygen decreases.

Q35. (a) Rod A was a magnet and repelled when their like poles face each other hence it moved away.

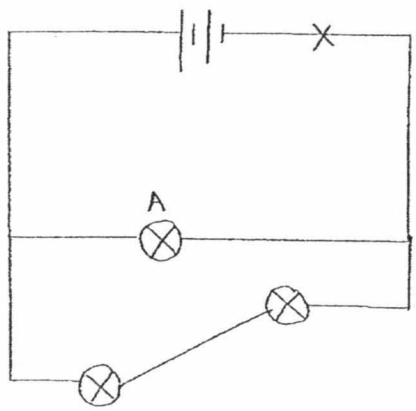
(b) The flame demagnetize Rod A causing Rod A to become a magnetic material hence it will be attracted.

Q36. (a) elastic potential energy → gravitational potential energy.

(b) When Ali doubled the distance, he pressed the spring down, more elastic potential energy was converted to more gravitational potential energy. Hence the spring would reach a higher height.

(c) He should use a longer spring. A longer spring would have more elastic potential energy and convert to more gravitational potential energy.

Q37. (a)



(b) Bulb A. It has the most current passing through.

Q38. (a) The person who is heavier than 50kg may break the bungee cord if material P breaks when it is heavier than 50kg.

(b) Apply mass to material X until it breaks.

(c) Elexibility

Q39. (a) Indicating that there is less friction between the surface of the wooden block and surface A.

(b) (i) Gravitational force
(ii) Friction force

(c) Boon Leng should use a ramp with a greater height but same material.

(d) The grooves increases friction between the bottle cap and the hand, making easier to twist open the bottle cap.

Q40. (a) Steamer X. Steamer X has more than Steamer Y holes, allowing evaporated water vapour to escape more quickly through the hole. Therefore Alexis has to top up water.

(b) She should add hot water into the steamer.

Q41. (a) After switch S2 is closed, the iron bar would be magnetized and become an electromagnet, attracting pin Q.

(b) When switch S2 is closed, pin Q is attracted to W, which is an electromagnet. This caused the circuit with the fan to become open, thus the electric current cannot flow and the fan is turned off.

(c) It is to conserve energy and prevent global warming.