NANYANG PRIMARY SCHOOL

PRIMARY 5 SCIENCE

SEMESTRAL ASSESSMENT 2
2014

BOOKLET A

Date : 29th October 2014
Duration : 1 h 45 min

Name : _____( )

Class: Primary 5 ( )

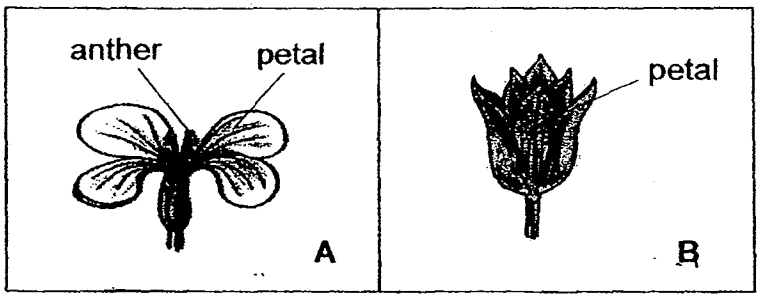
DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.

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

Section A (30 x 2 marks = 60 marks)

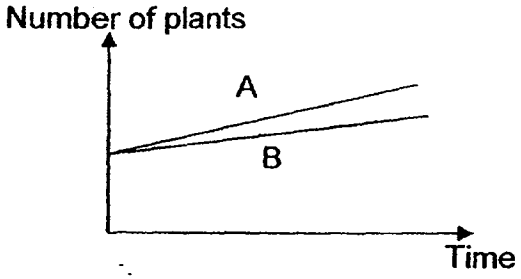
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet provided.**

1. The diagram below shows the flower of plant A and plant B. One is pollinated by wind while the other is pollinated by animals.



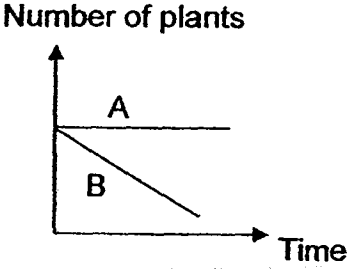
An experiment was conducted, as indicated in the table below, to find out if cutting away the petals of the flowers from both plants A and B will affect the number of both plants after a period of time. The graph below shows the results for set-up X.

	Set-up X		Set-up Y	
	Petals not removed		Petals removed	
	A	B	A	B
Number of plants at the start	5	5	5	5

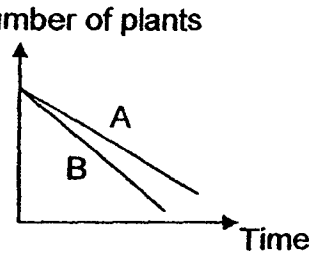


Which one of the following graphs correctly shows the possible result for set-up Y?

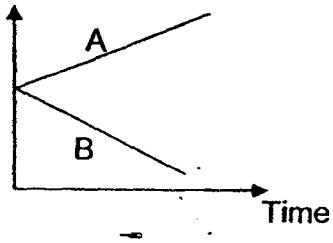
(1)



(2)



(3)



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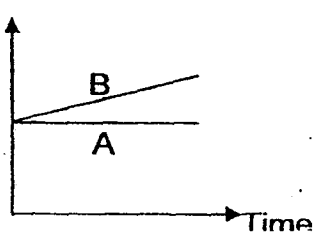
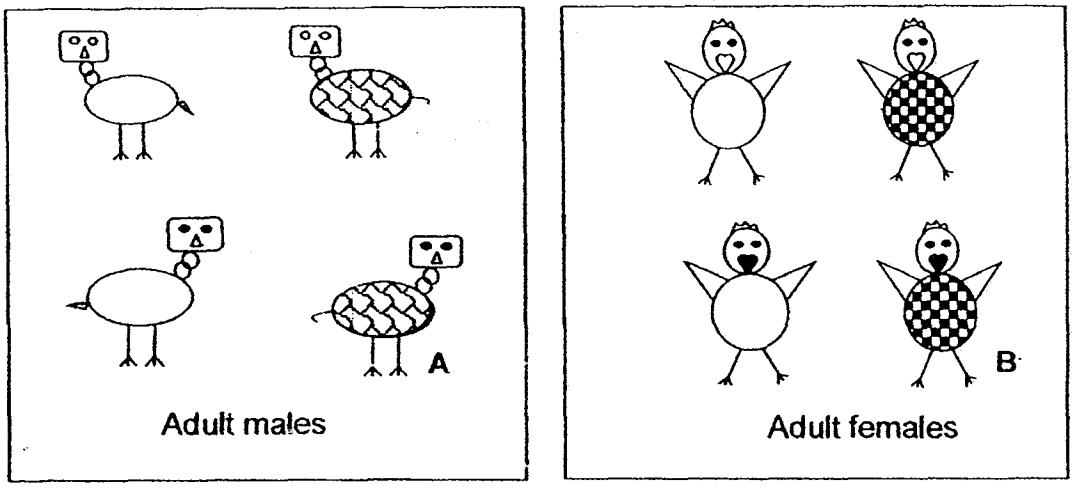
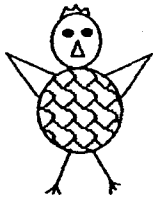


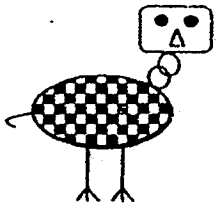
2. The diagram below shows the characteristics of a group of organisms.

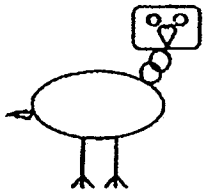


Male A mated with female B and produced a female young C. If the young definitely shows some characteristics of both parents, which one of the following could female young C be?

(1) 

(2) 

(3) 

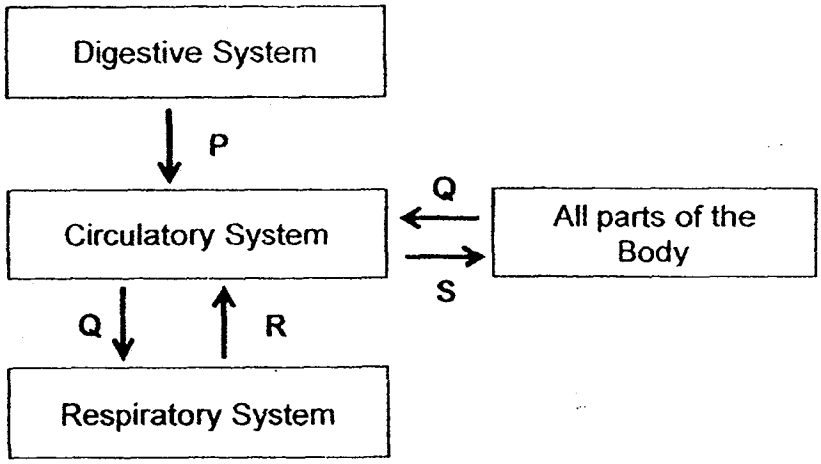
(4) 

3. Which of the following statements below about the gases in the air are **correct?**

A The concentration of oxygen is greater in exhaled air than in inhaled air.
B The concentration of carbon dioxide is greater in exhaled air than in inhaled air.
C The concentration of nitrogen in exhaled and inhaled air remains unchanged.

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

4. The diagram below shows how three body systems work together to transport substances to all parts of the body.



Which of the following substances could P, Q, R and S represent?

	P	Q	R	S
(1)	Undigested food	Oxygen	Carbon Dioxide	Carbon dioxide and oxygen
(2)	Digested food	Carbon Dioxide	Oxygen	Digested food, carbon dioxide and oxygen
(3)	Digested food	Carbon Dioxide	Oxygen	Digested food and oxygen
(4)	Digested food	Oxygen	Carbon Dioxide	Digested food and carbon dioxide

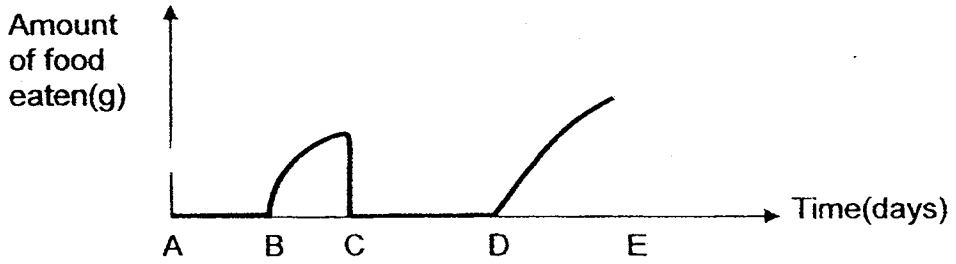
5. Based on the information in the table below, which of the following statements are **true**?

	Cell			
Cell Structure	**W**	**X**	**Y**	**Z**
Nucleus	Absent	Present	Present	Present
Cell Wall	Absent	Present	Present	Absent
Cytoplasm	Present	Present	Present	Present
Chloroplast	Absent	Absent	Present	Absent
Cell Membrane	Present	Present	Present	Present

A An example of cell Z would be a red blood cell.
B An example of cell X would be an onion skin cell.
C Only cell Y would be able to carry out photosynthesis.
D Cells X, Y and Z can undergo cell division but not cell W.

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

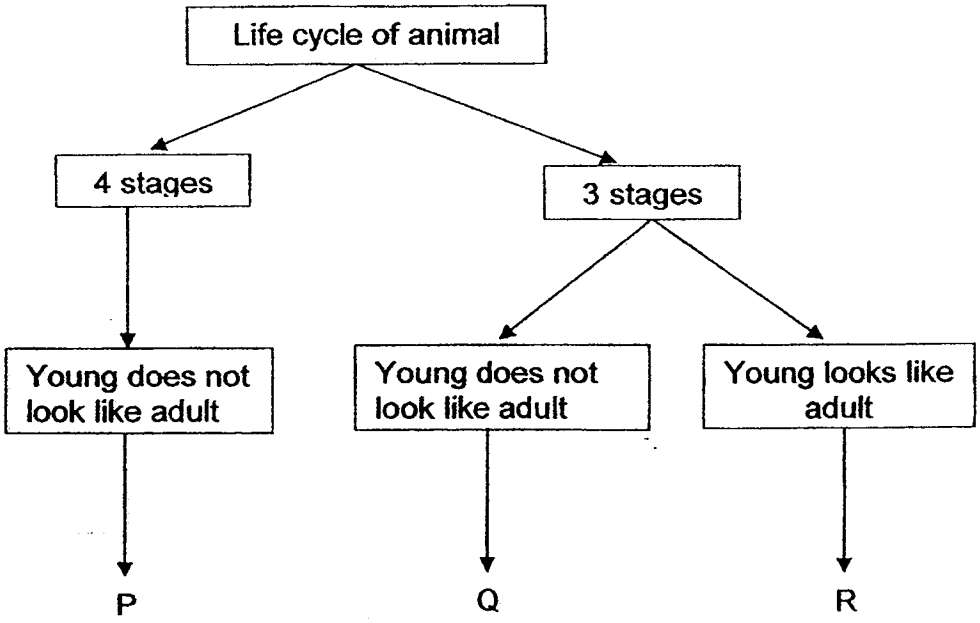
6. The graph below shows the amount of food that is eaten at different stages in the life cycle of butterfly X.



Which parts of the graph shows the egg and larva stages of butterfly X respectively?

	Egg	Larva
(1)	AB	BC
(2)	AB	CD
(3)	BC	DE
(4)	CD	DE

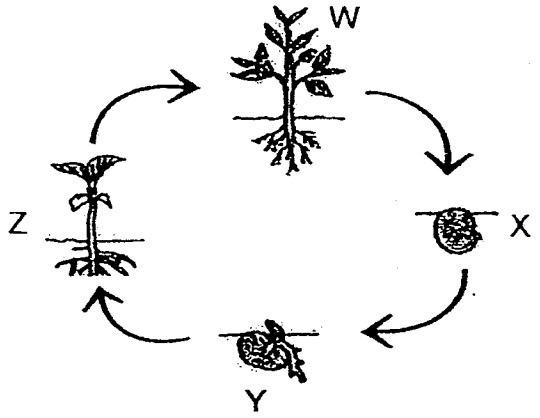
7. Study the diagram below.



Which one of the following could represent P, Q and R?

	P	Q	R
(1)	grasshopper	frog	butterfly
(2)	butterfly	frog	grasshopper
(3)	housefly	grasshopper	frog
(4)	frog	housefly	grasshopper

8. The diagram below shows the ~~three~~ four stages, W, X and Y, Z of the life cycle of a flowering plant.



Which one of the following conditions will result in the observations stated below?

	Condition	Observations
A	W is placed in a dark room and no water is supplied.	X developed after some time.
B	X is placed in the freezer.	X did not develop into Y.
C	Y is placed in a dark room but is watered daily.	Y developed into Z but not into W.

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

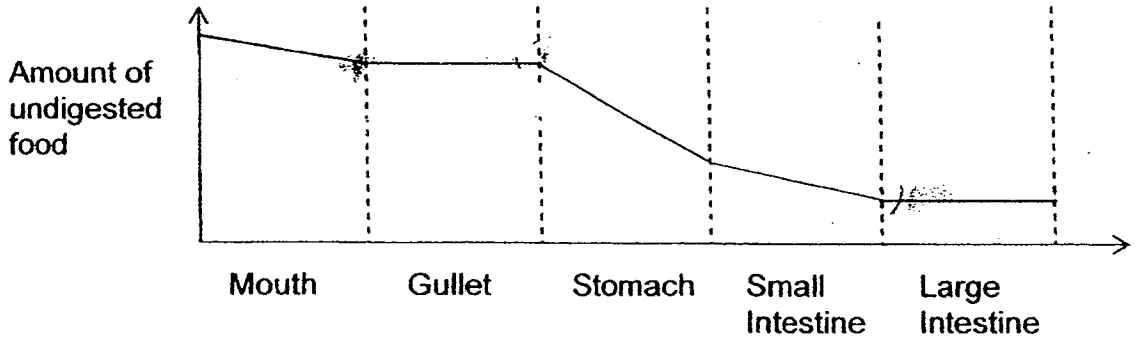
9. Which of the following actions **directly** involve the use of the muscular system?

A Writing
B Running
C Chewing
D Thinking

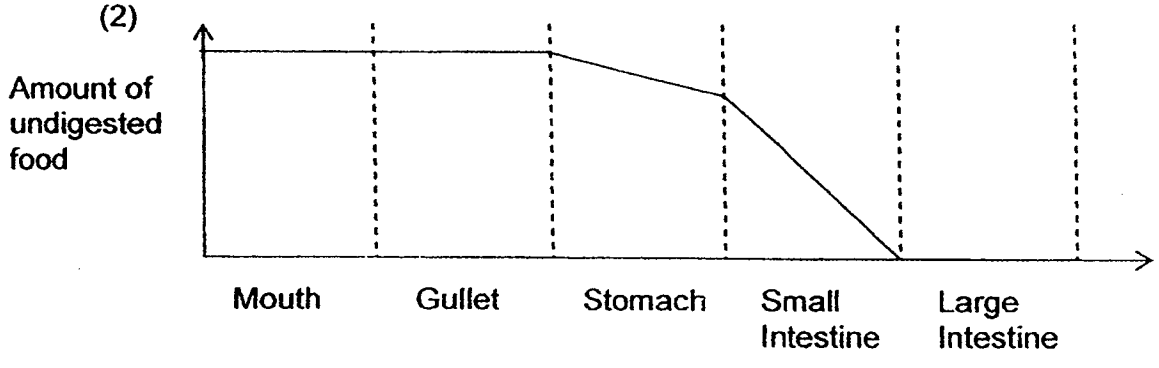
(1) A and B only
(2) C and D only
(3) A, B and C only
(4) A, B, C and D

10. John ate a burger for lunch. Which one of the graphs below correctly shows the amount of undigested food found in the different body parts as it passes through John's digestive system?

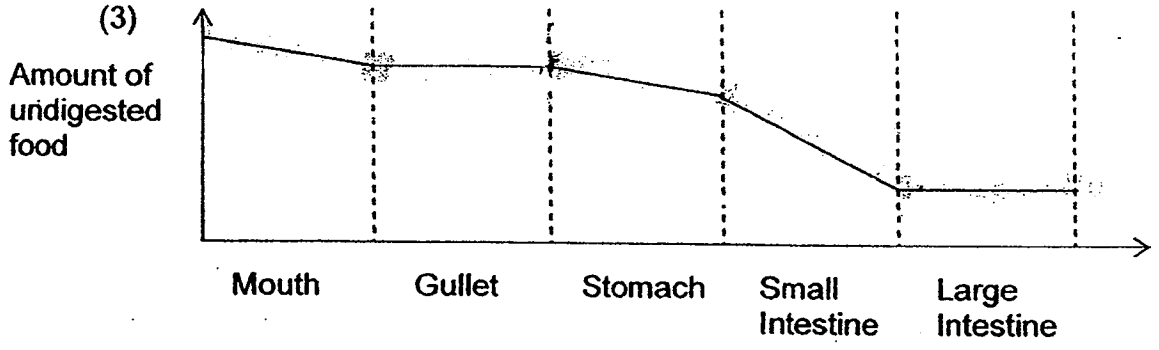
(1)



(2)



(3)



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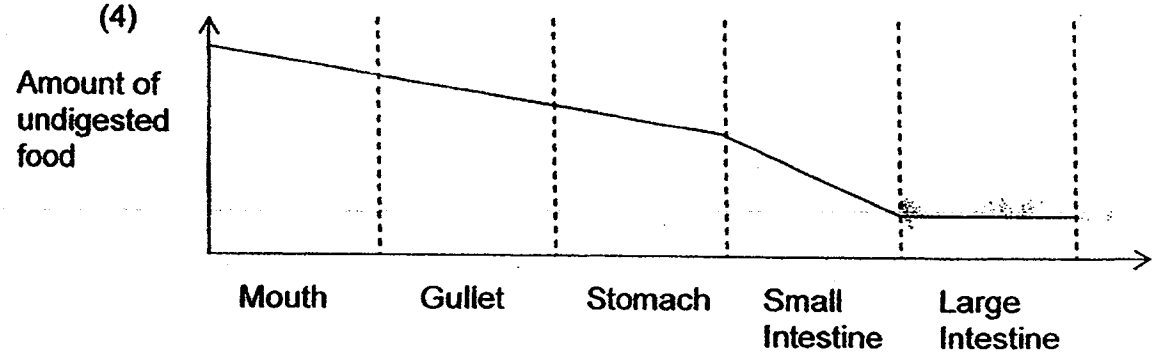
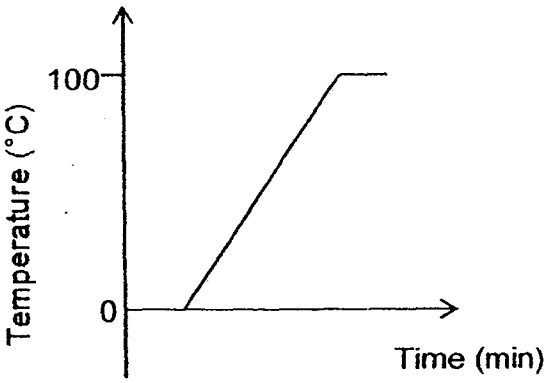
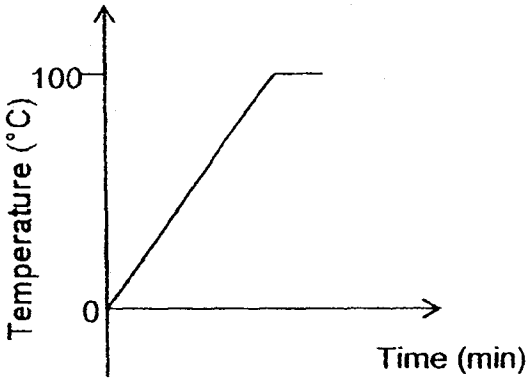


11. Kim heated a beaker of frozen pure water until it boiled. She measured the temperature of the pure water throughout the process and plotted the data on a graph. Which one of the following graphs correctly represents Kim's results?

(1)



(2)



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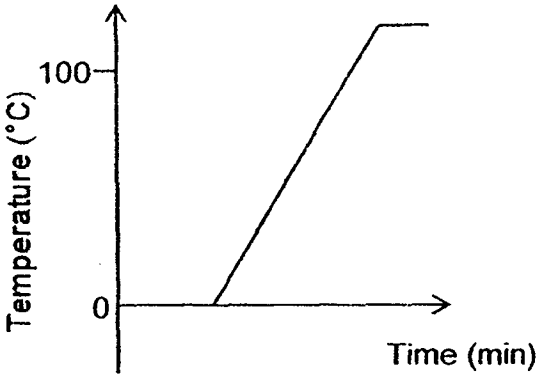

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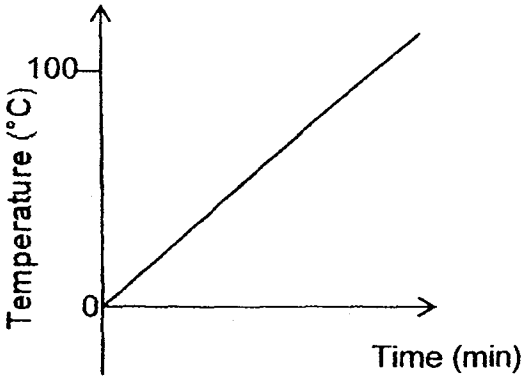
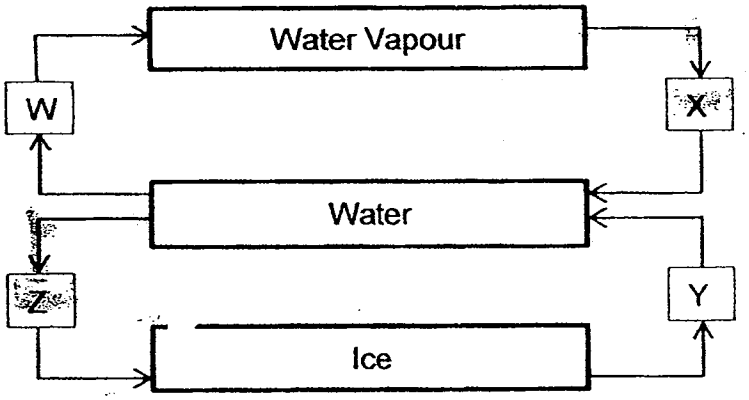


12. James had 2 beakers, A and B, each containing 300 ml of water. Beaker A was placed in an enclosed room. Which of the following actions would result in **more water remaining** in beaker B than beaker A after 6 hours?

A Placing beaker B under a fan.
B Placing beaker B under the sun.
C Covering beaker B with a black lid.
D Placing beaker B in the refrigerator.

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

13. The diagram below represents the changes of state of water. W, X, Y and Z represent processes in the water cycle.

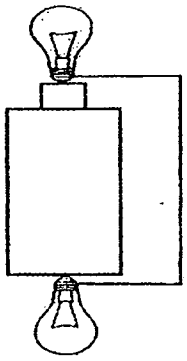


Which of the processes, involve heat loss to the surroundings?

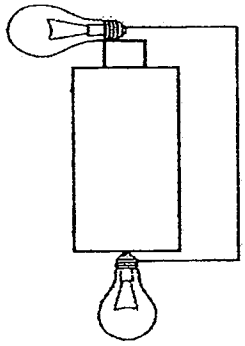
(1) W and Y only
(2) W and Z only
(3) X and Y only
(4) X and Z only

14. In each of the circuits below; 2 bulbs are connected to a battery using a wire.

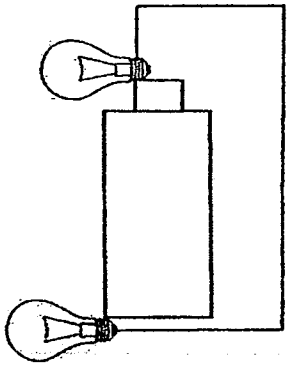
A



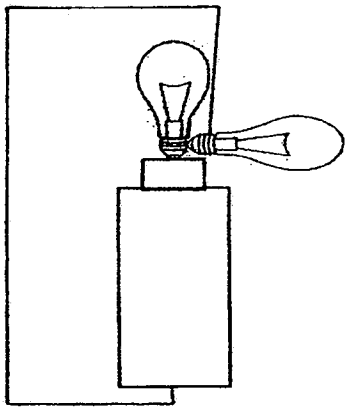
B



C



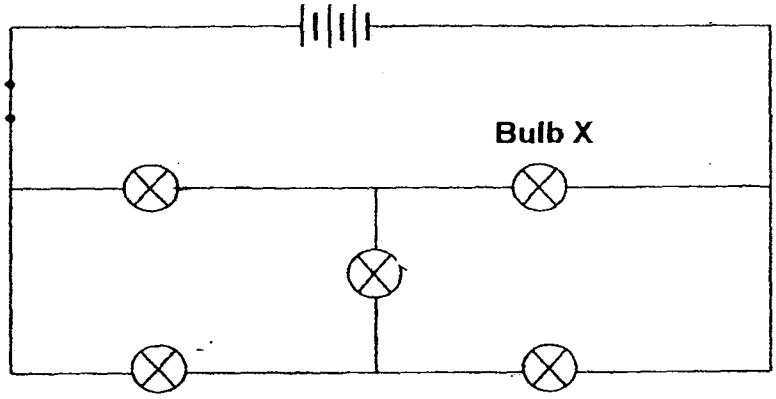
D



In which of the circuits above would both bulbs light up?

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

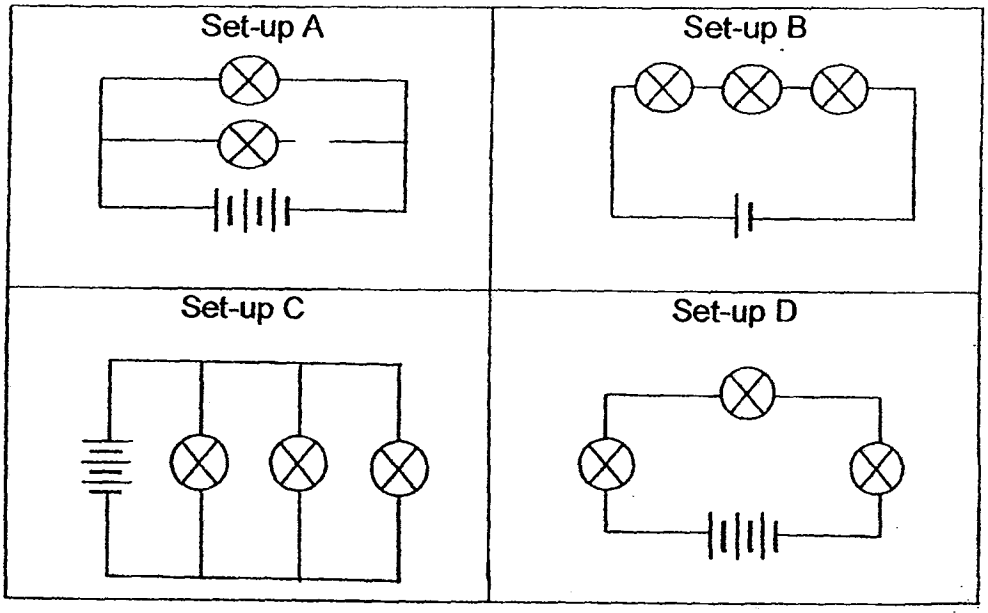
15. Gopal set up an electrical circuit as shown below using identical bulbs and batteries. The switch was closed.



If bulb X fuses, how many bulbs will remain lit?

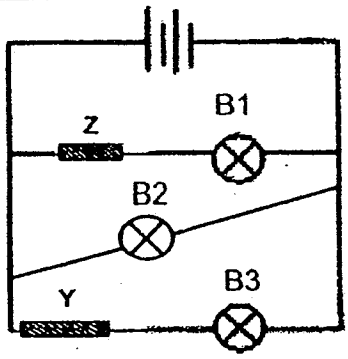
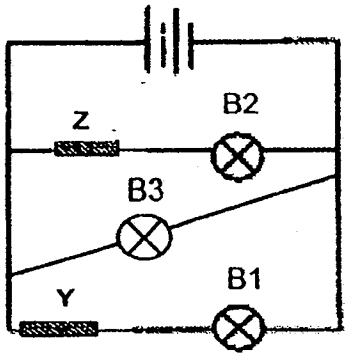
(1) Zero
(2) Two
(3) Three
(4) Four

16. Priya wants to find out how the arrangement of bulbs in a circuit will affect the brightness of the bulbs. Assuming that all the bulbs and batteries are identical, which 2 set-ups should she use to ensure a fair test?



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

17. Andy was given 2 sets of closed parallel circuits, P and Q, as shown in the diagrams below. Both circuits had identical light bulbs and objects Z and Y. He was asked to test out both circuits. He then recorded his observations in a table.

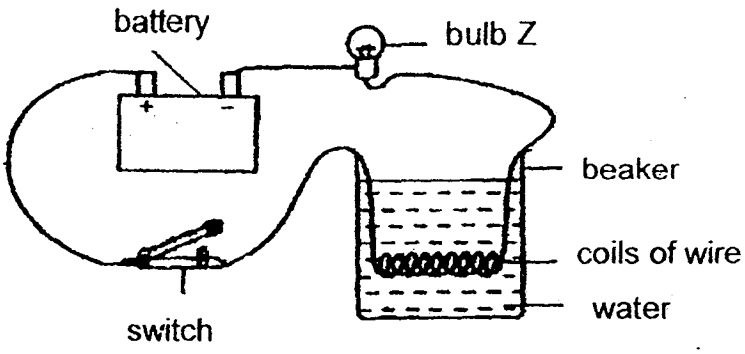
Set-up	Observations
 P	• B1 lit up. • B2 did not light up. • B3 did not light up.
 Q	• B1 did not light up. • B2 did not light up. • B3 lit up.

Based on Andy's observations, which of the following conclusions can he make?

A B2 had most likely fused.
B Y was not a conductor of electricity.
C Z allowed electricity to pass through B1 better than B2.
D Electricity passed through Z but not Y as it always takes the shorter path within the circuit.

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

18. Li Ying set up an experiment as shown below.



When she closed the switch, the bulb lit up and the coils of wire became heated. After 15 minutes, the water started to boil.

What could Li Ying do to allow the water to boil faster?

(1) Remove bulb Z from the circuit.
(2) Connect one more bulb to the circuit.
(3) Connect one more switch to the circuit.
(4) Connect one more battery in series to the circuit.

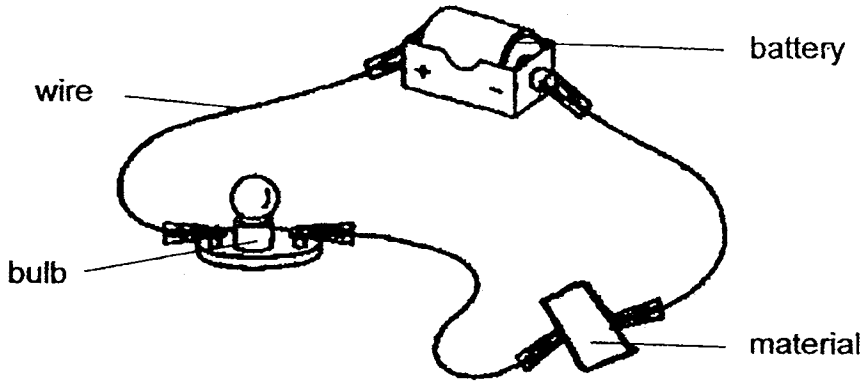
19. The table showed the electricity consumption of the Tan household recorded in one afternoon between 12 p.m. to 3 p.m.

Time (p.m.)	Electricity Consumption (Watt)
12 p.m.	235
1 p.m.	240
2 p.m.	1050
3 p.m.	310

Which one of the following could most likely explain the increase in the amount of electricity consumption in the household at 2 p.m.?

(1) A table lamp was switched on.
(2) An air conditioner was switched on instead of the fan.
(3) A computer's monitor screen was left on standby mode.
(4) A mobile phone that was fully charged was left attached to the power socket.

20. Jonas set up a circuit tester as shown in the diagram below. He wanted to find out if the materials, P, Q and R, could conduct electricity.



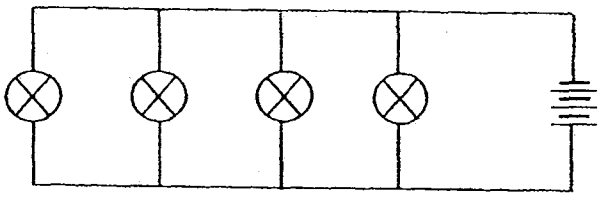
The results of the test were as follows:

Material	Did the bulb light up?
P	Yes
Q	No
R	Yes

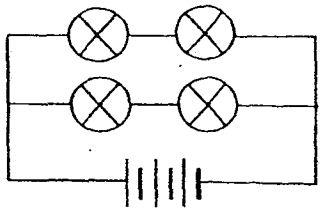
Which one of the following could represent materials P, Q and R?

	P	Q	R
(1)	cotton	plastic	gold
(2)	gold	wood	aluminium
(3)	glass	aluminium	copper
(4)	copper	rubber	cotton

21. Ali set up two circuits, X and Y, using identical light bulbs and batteries. All the bulbs in both circuits were lit at first.



Circuit X

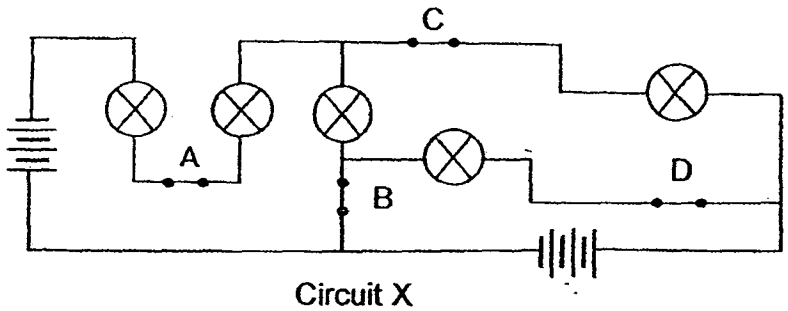


Circuit Y

When one of the bulbs in each circuit fused, how many bulbs would remain lit in each circuit?

	Number of bulbs remaining lit	
	Circuit X	Circuit Y
(1)	0	0
(2)	0	2
(3)	3	2
(4)	3	3

22. Priya set up circuit X using identical light bulbs and batteries, as shown in the diagram below. She placed 4 switches, A, B, C and D, at various parts of the circuit. When all 4 switches were closed, all five light bulbs lit up.

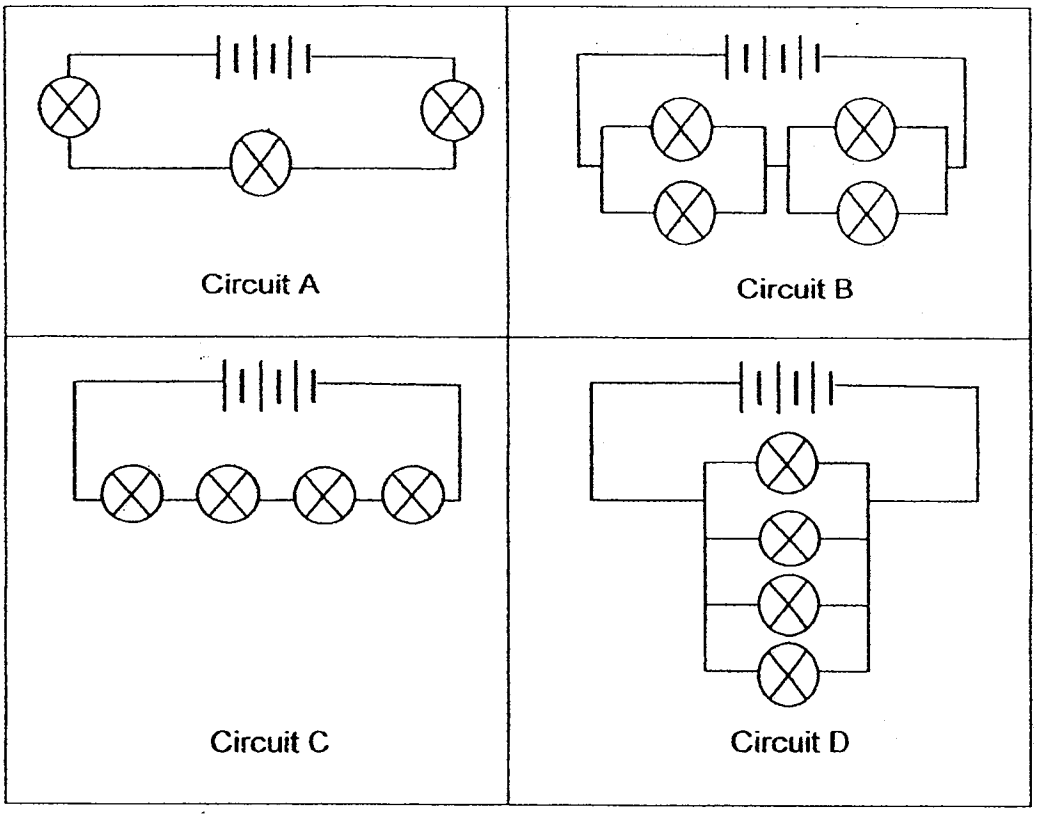


Circuit X

Which one of the following correctly shows the number of light bulbs that lit up when the various switches were open and closed?

	Switches				Number of light bulbs lit
	A	B	C	D	
(1)	Open	Open	Closed	Closed	One
(2)	Closed	Closed	Closed	Open	Two
(3)	Open	Closed	Open	Closed	Three
(4)	Closed	Open	Open	Closed	Four

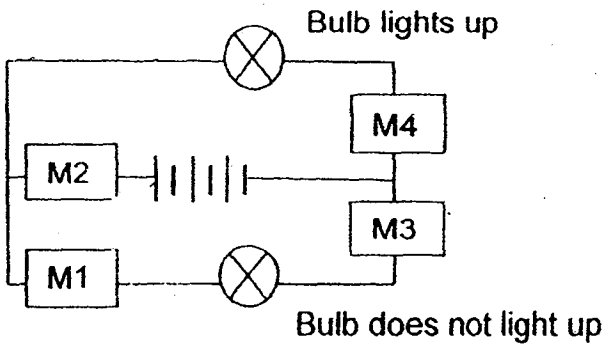
24. 4 electric circuits, A, B, C and D, were set up using identical bulbs and batteries as shown below.



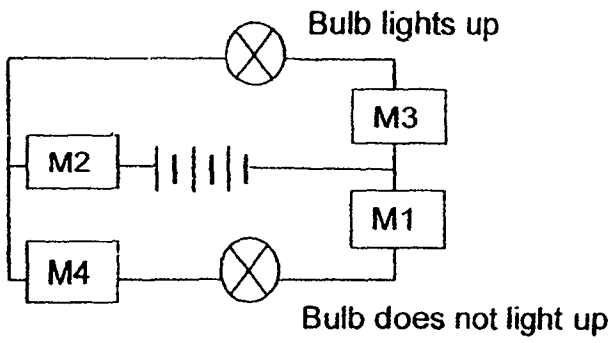
Which one of the following correctly arranges the circuits from the dimmest bulb to the brightest bulb?

	dimmest → brightest			
(1)	A	C	B	D
(2)	A	B	D	C
(3)	C	A	B	D
(4)	C	B	D	A

23. Colin had 4 materials, M1, M2, M3 and M4. He wanted to find out which material is a conductor of electricity. He then connected all the materials in a circuit and recorded his observations as shown in the diagram below.



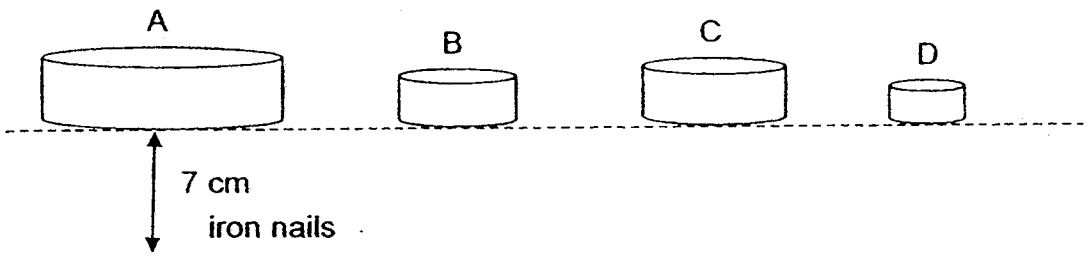
Next, Colin rearranged the materials in the same circuit and recorded his observations as shown in the diagram below.



Based on Colin's observations, which of the following materials are conductors of electricity?

(1) M1 and M4 only
(2) M2 and M3 only
(3) M1, M3 and M4 only
(4) M2, M3 and M4 only

25. The diagram below shows four magnets, A, B, C and D, of different sizes. Each of the magnets was then placed at an equal distance above a box of 20 iron nails. The number of iron nails attracted to each magnet was recorded in a table as shown below.



Magnet	A	B	C	D
Number of nails attracted	9	5	12	8

Which one of the following conclusions can be drawn based on the results obtained?

A Magnet B is stronger than magnet D.
B The poles of the magnets are the strongest.
C Magnet B is the weakest among the magnets.
D The strength of the magnet is not affected by its size.

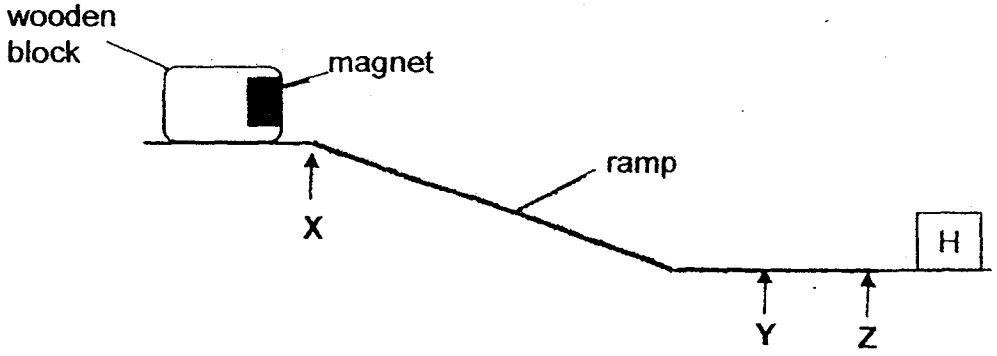
(1) A and B only
(2) A and C only
(3) C and D only
(4) B, C and D only

26. Which of the following statements demonstrate that friction is **useful** in our daily lives?

A Sharpening a knife.
B Wear and tear of machine parts.
C Watching a television programme.
D Gripping a pen and writing on paper.
E Holding a bottle of drink with our hand.

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

27. Rani set up an experiment as shown below. She released the wooden block at point X. It moved down the ramp until point Z, moved back a little before stopping at point Y. The block did not touch object H.

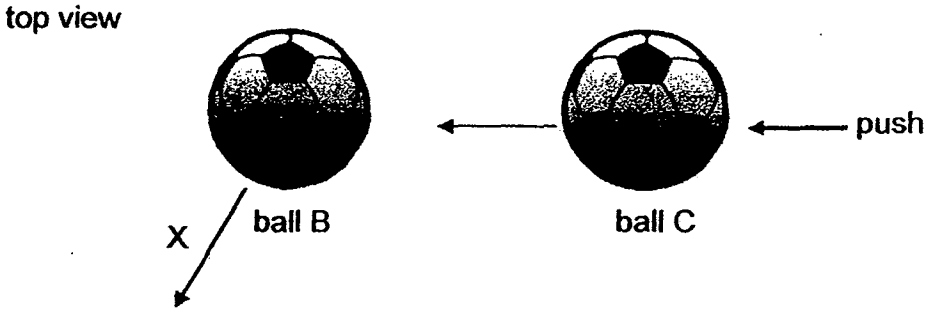


Which of the following statements on the experiment are **true**?

A There was gravitational force acting on the block at point X.
B There was no friction acting on the block when it stopped at point Y.
C The block did not touch object H due to magnetic force of repulsion.
D There was only magnetic force of repulsion acting on the block at point Z.

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

28. The diagram below shows ball B which was moving in the direction as indicated by arrow X. Ball C was given a push and moved towards ball B. It hit ball B after some time.

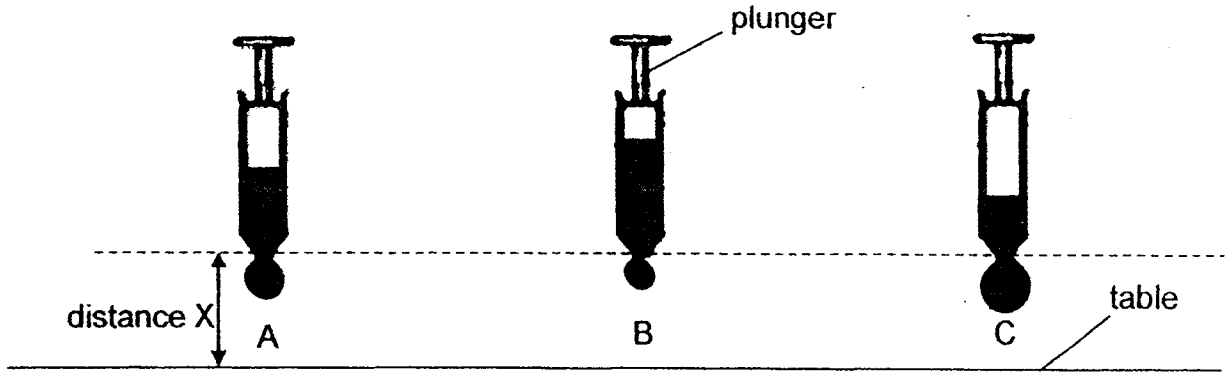


Which of the following could happen when ball C hits ball B?

A Ball B will change its position.
B Ball B will increase its speed.
C Ball C will change its direction.
D Ball C will come to a stop immediately.

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

29. The diagram below shows three syringes, A, B and C, which were at the same height above the table. The three syringes were filled with the same amount of honey. Peter then pushed the plunger for each syringe once only. Different amount of honey was left in each syringe.

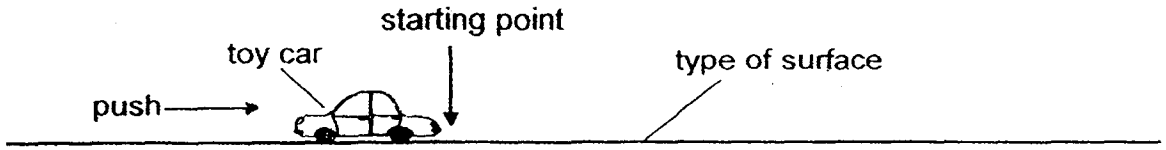


Based on the observation above, which of the following statements are **true**?

A Most honey flowed out from syringe C.
B Least amount of force was applied to syringe B.
C More force was applied to syringe C than syringe A.
D More gravitational force acted on the drop of honey in syringe B than the drop of honey in syringe A.

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

30. Four identical toy cars are pushed across four different types of surfaces, A, B, C and D, at the same starting point and by using the same amount of force. The distance travelled by each toy car is recorded as shown in the table below.



Surface	Distance travelled by toy car (cm)
A	87
B	122
C	73
D	99

Arrange the four surfaces from the most frictional force exerted on the four toy cars to the least.

	Most frictional force ⟶			Least frictional force
(1)	A	D	C	B
(2)	C	A	D	B
(3)	D	B	A	C
(4)	B	D	A	C

NANYANG PRIMARY SCHOOL

PRIMARY 5 SCIENCE

SEMESTRAL ASSESSMENT 2
2014

BOOKLET B

Date : 29th October 2014

Duration : 1 h 45 min

Name : _____( )

Class: Primary 5 ( )

Marks Scored:

Booklet A:		**60**
Booklet B :		**40**
Total :		**100**

Any query on marks awarded should be raised by 7/11/14. We seek your understanding in this matter as any delay in the confirmation of marks will lead to delays in the generation of results.

Parent's signature: .... /.....

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

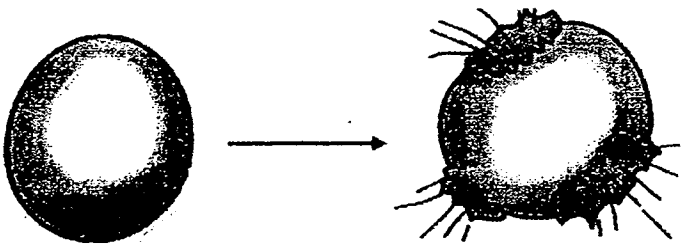
Booklet B consists of 17 printed pages including this cover page.

This is a blank page.

Section B (40 marks)
Write your answers to questions 31 to 44 in the spaces provided.

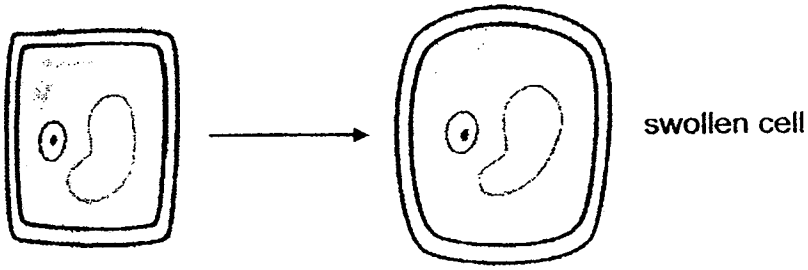
31. Raymond carried out an experiment with a leaf cell and a red blood cell. He placed both cells in pure water and examined them after some time.

Red Blood Cell



Before After

Leaf Cell



Before After

(a) State two differences between the cells. (1 mark)

_____

_____

(b) Explain the results after adding them in pure water. (2 marks)

Red Blood Cell:

_____

_____

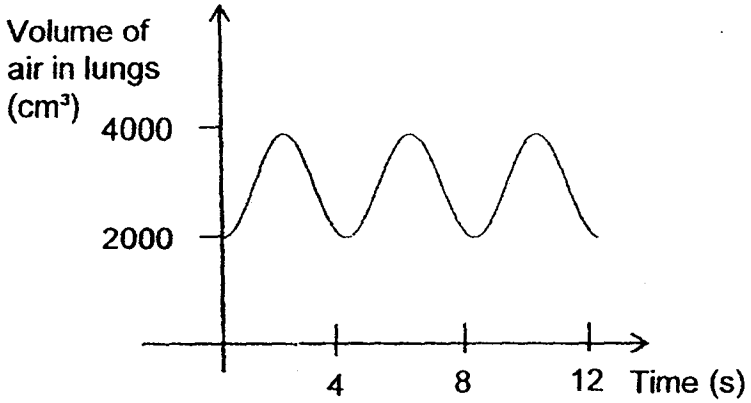
Leaf Cell:

_____

_____

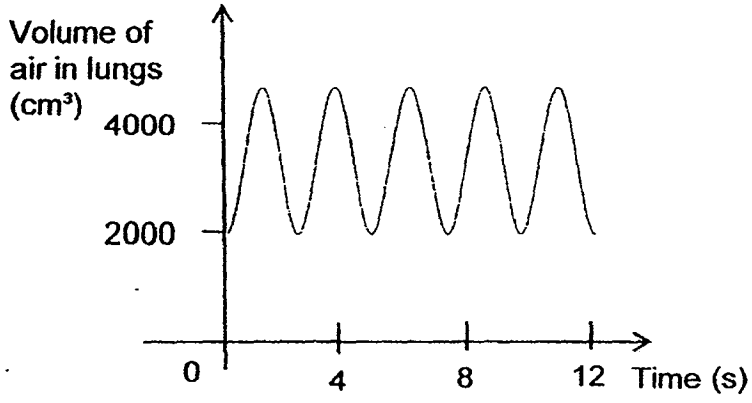
32. Joyce carried out 3 activities, A, B and C, for a period of time. The graphs below represent the volume of air in Joyce's lungs during each activity.

Activity A



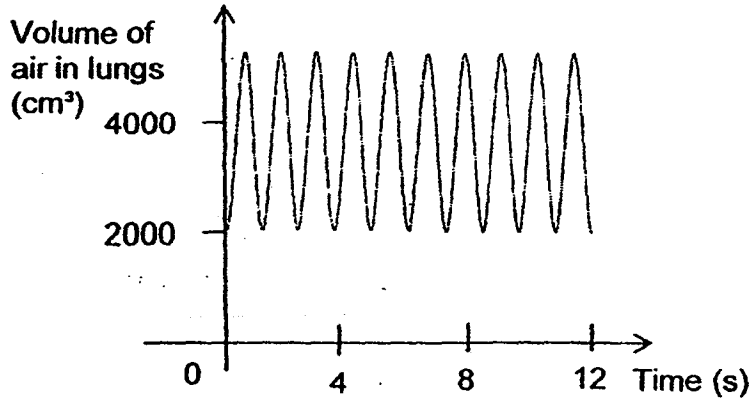
Graph A

Activity B



Graph B

Activity C



Graph C

(a) Based on the information above, what is the aim of Joyce's experiment? (1 mark)

_____

_____

_____

(b) Which activity is the most vigorous? Give a reason to support your answer.

_____

_____

_____

(c) Explain why breathing rate needs to change during vigorous activity.

(1 marks)

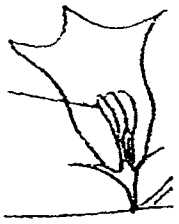
_____

_____

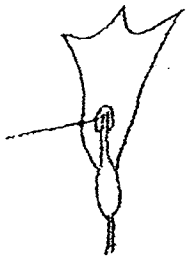
_____

_____

33. The diagram below shows the plant X which grows near a river. It has two different types of flowers, male and female flowers, growing on it.



Flower A



Flower B

(a) On the diagram above, label the "stigma" and the "anther" (male and female) found on each type of flower. (1 mark)

(b) The stigma on plant X was accidentally removed but it still bore fruit after some time. Explain the observation. (1 mark)

_____

_____

(c) The villagers living near the river found that when the number of frogs near the river increased, the chances of pollination for the flowers of plant x decreased.

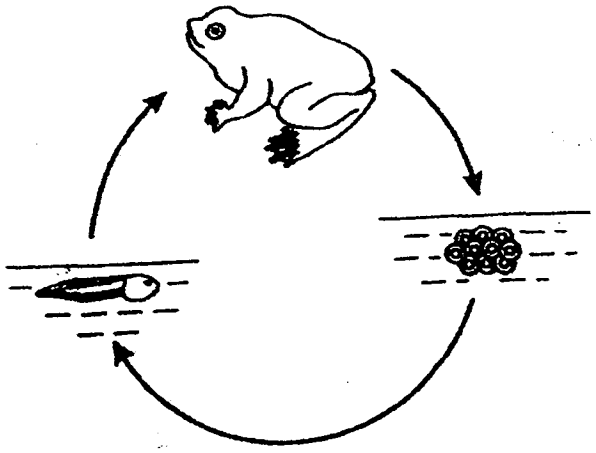
State a likely method of pollination and suggest why pollination had decreased for plant X. (2 marks)

_____

_____

_____

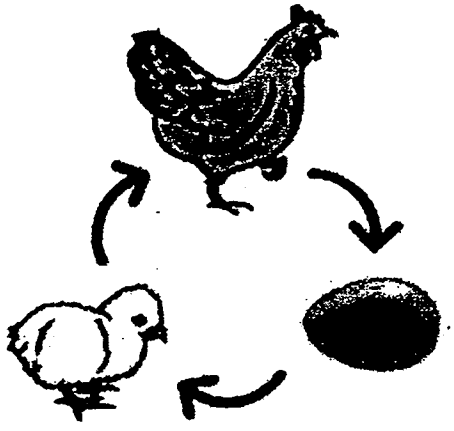
34. The diagram below shows the life cycle of a frog.



(a) Explain how laying many eggs each time helps the frog in its survival. (1 mark)

_____

_____



(b) The life cycle of a chicken has the same number of stages as the frog. State a difference between the life cycles of the two organisms. (Do not mention physical appearance) (1 mark)

_____

_____

35. Lina put some green bean seeds in a container with moist cotton wool and placed it in her cupboard. After a few days, she observed that the green bean seeds had germinated even though there was no light in her cupboard.

(a) Give a reason why light was not required for the germination of seeds. (1 mark)

_____

_____

Lina conducted another experiment to find out if kidney bean seeds or green bean seeds germinate faster in a week. She placed five identical seeds of each type on two separate identical plastic petri dishes

(b) State two other variables which she should keep the same for this experiment. (2 marks)

(i)_____

(ii)_____

36. One of the human body systems gives the body its shape.

(a) Identify this body system. (1 mark)

_____

(b) What are two other functions of this body system? (1 mark)

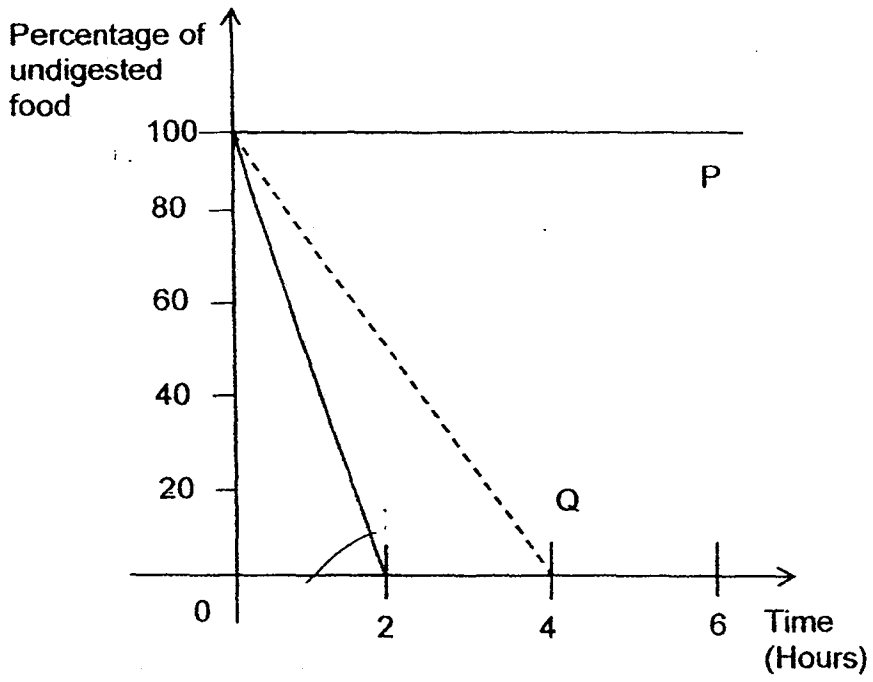
(i) _____

_____

(ii) _____

_____

37. Jane wanted to study the digestive system of an animal. The animal was fed with the same amount of Food P and Q and the amount of undigested food was measured over six hours. The readings were plotted in the graph shown below.



another x

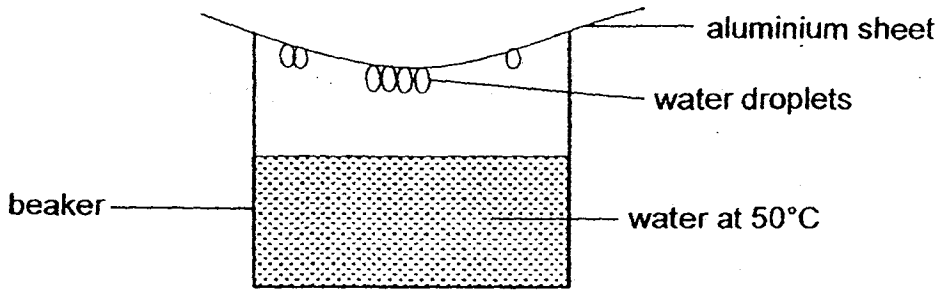
(a) **Draw line** on the graph above to represent food Q if it was blended into many tiny pieces before being fed to the animal. (1 mark)

(b) Based on the graph above, explain the results for food P. (1 mark)

_____

_____

38. James created a set-up as shown below.



(a) After 15 minutes James noticed that there are fewer water droplets forming at the base of the aluminium sheet. Explain his observation. (1 mark)

_____

_____

_____

(b) Based on the set-up shown above, what difference(s) will he observe if he used water at 3°C instead of 50°C? Explain your answer. (2 mark)

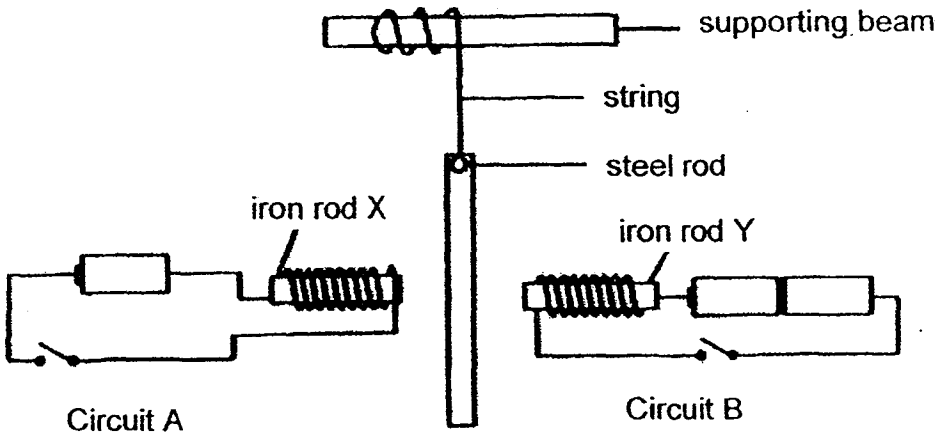
_____

_____

_____

_____

39. Leila placed a steel rod between two iron rods, X and Y, as shown in the diagram below. Identical batteries were used in both circuits. Both iron rods became electromagnets when the circuits were closed.



(a) State what Leila would observed about the steel rod when both circuits were closed. Explain Leila's observation. (2 marks)

_____

_____

_____

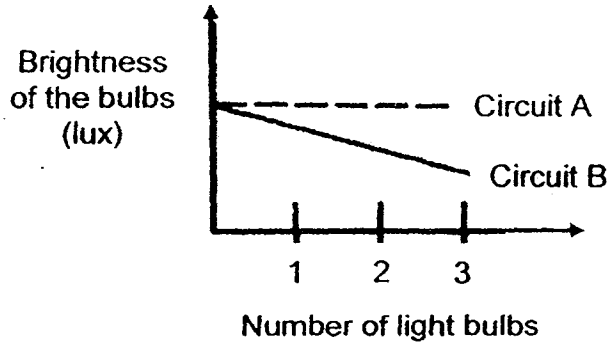
(b) Without adding more batteries to the circuits, state one change that Leila could make to make both electromagnets stronger. (1 mark)

_____

_____

40. Ah Meng set up 2 different electrical circuits, A and B, using identical light bulbs and batteries. Each circuit had two batteries at first. Next, he measured the brightness of the light bulbs as he added more light bulbs to each circuit.

Based on the readings recorded, Ah Meng plotted the graphs as shown below to compare the brightness of the bulbs in the two circuits.



(a) Based on the graph above, draw **circuit diagrams** to represent circuits A and B. **Use 3 bulbs and 2 batteries in each circuit.**

(2 marks)

Circuit A	**Circuit B**

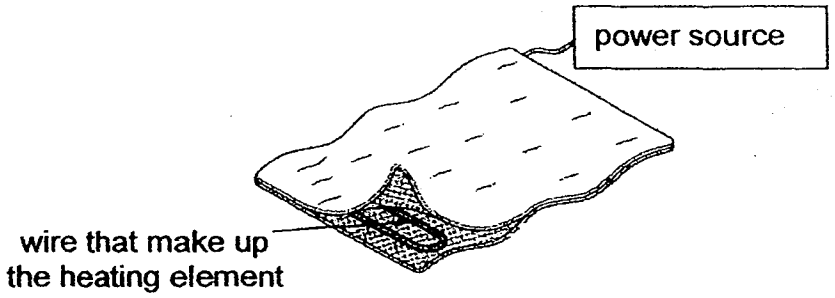
Ah Meng decided to add more batteries to circuit A. He observed that all the light bulbs in circuit A became brighter when 2 more batteries were added.

(b) However, when the 3rd battery was added, none of the light bulbs were lit. Explain why. (1 mark)

_____

_____

41. The electric blanket shown below contains a heating element that is inserted between two layers of fabric.



(a) Explain how an electric blanket can keep a person warm. (1mark)

_____

_____

_____

Joe owns an electric blanket. After many years of using it, the fabric became worn out and the heating element is exposed. Joe's mother tells him that it is dangerous to use the blanket and advised him to change the electric blanket.

(b) Explain why it is dangerous for the electric blanket's heating element to be exposed. (1 mark)

_____

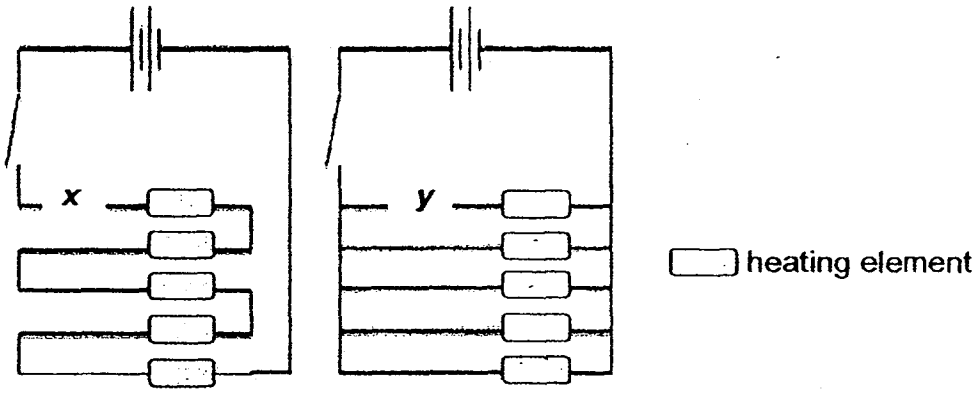
_____

(c) State a property of the fabric that makes it suitable as an electric blanket. (1 mark)

_____

_____

The diagrams below show 2 ways that the circuit of a heating element can be connected.



Circuit A Circuit B

Part of the wire broke at point ***x*** of circuit A and at point ***y*** of circuit B.

(d) When the switch is closed, how does the broken wire in each circuit affect the heating element in the electric blanket?

(1 mark)

Circuit A:

_____

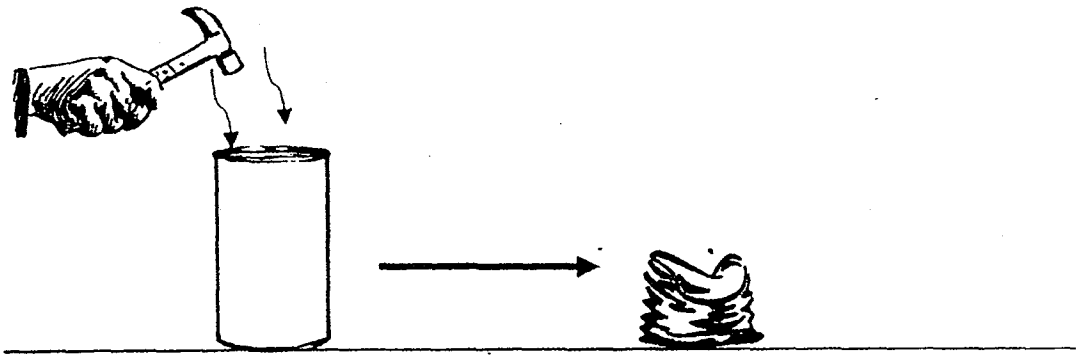
_____

Circuit B:

_____

_____

42. Peter hammered a metal tin as shown in the diagram below.



(a) State an effect of the force which was applied to the metal tin. (1 mark)

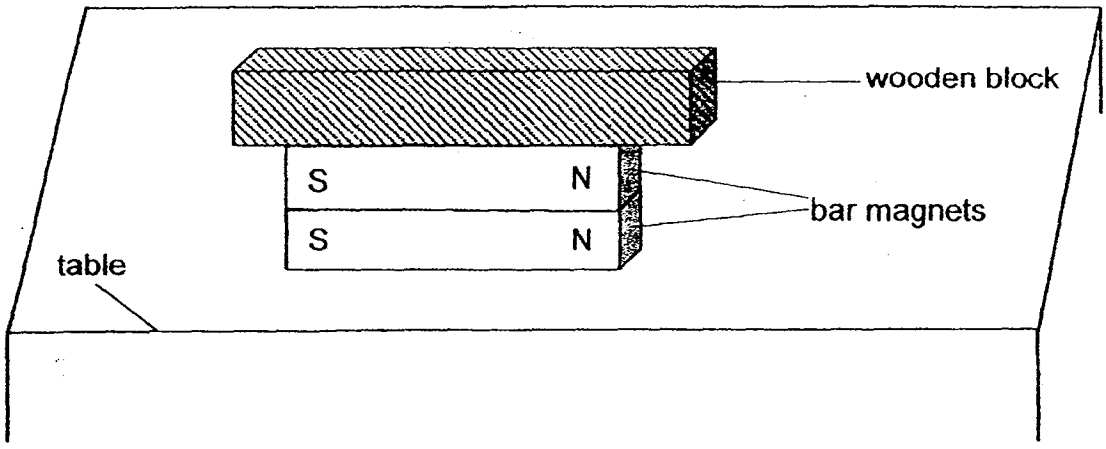
_____

(b) Did the mass of the metal tin change after a force was applied to it? Explain your answer. (1 mark)

_____

_____

43. Two pieces of bar magnets are placed on top of each other with their like poles facing each other. A wooden block is placed on top the two bar magnets as shown in the diagram below.



(a) Name the two forces at work based on the diagram above. (1 mark)

_____

(b) Explain, in terms of forces, why the two bar magnets are able to stay in contact even though their like poles are facing each other. (1 mark)

_____

_____

44. Figure 1 below shows a spring of 9cm. An iron box was hung on the spring and the spring was stretched to 14cm.

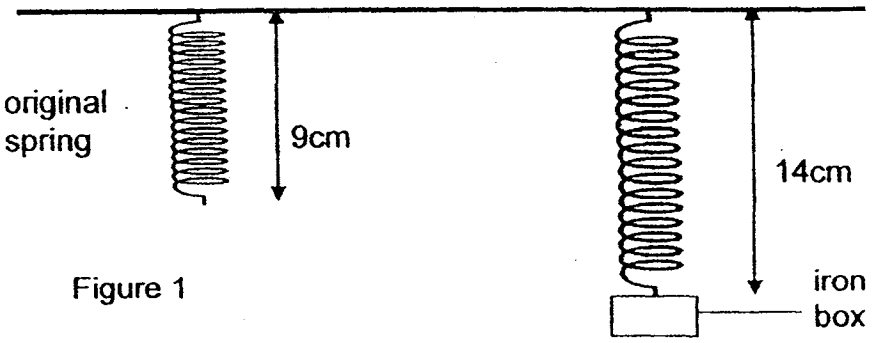


Figure 1

(a) Explain, in terms of forces, how the spring was stretched. (1 mark)

Object X was then placed directly below the iron box and the spring stretched to 17cm as shown in figure 2 below.

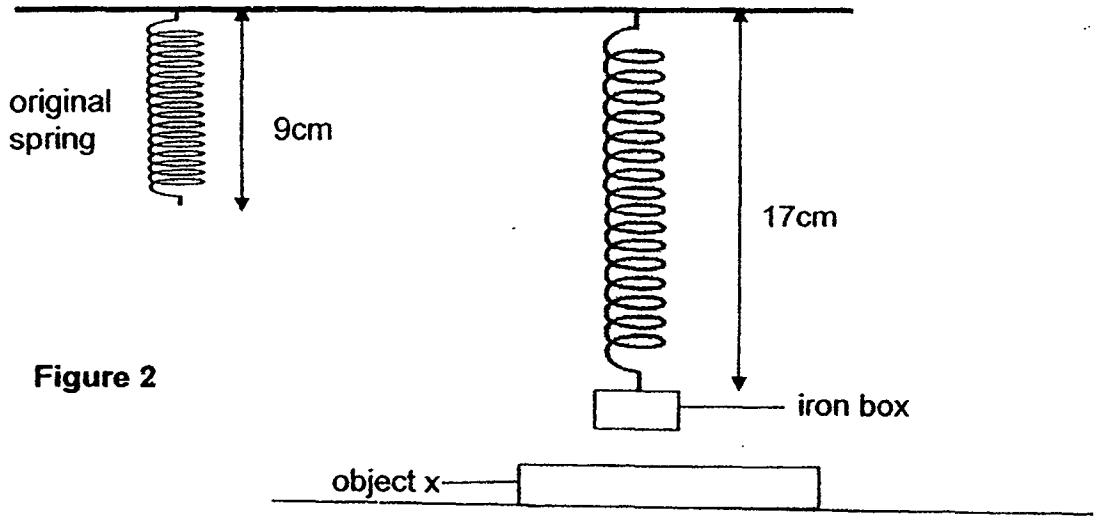


Figure 2

(b) What could object X be? (1 mark)

(c) The extension of the spring in Figure 1 is less than the extension of the spring in Figure 2. Explain why. (2 marks)

P5 2014 Science SA 2 – Booklet A (Answer key)

1	**3**	11	**1**	21	**3**
2	**2**	12	**2**	22	**4**
3	**3**	13	**4**	23	**4**
4	**3**	14	**4**	24	**3**
5	**4**	15	**4**	25	**3**
6	**1**	16	**4**	26	**3**
7	**2**	17	**1**	27	**1**
8	**3**	18	**4**	28	**4**
9	**3**	19	**2**	29	**3**
10	**3**	20	**2**	30	**2**

P5 2014 Science SA 2 – Booklet B analysis for selected questions

31(a). The leaf cell has a nucleus and cell wall/regular shape.
The red blood cell does not have a nucleus and a cell wall.
The leaf cell has chloroplasts but the red blood cell does not have.
The leaf cell has large vacuoles but the red blood cell does not have.
Focus : must state two differences in terms on **what is located/found** in both the leaf cell and red blood cell
Unacceptable answers :
The leaf cell is a plant cell and the red blood cell is an animal cell
The leaf cell contains chlorophyll but the nucleus does not contain chlorophyll. Chlorophyll is the green pigment, found in the chloroplast. Chlorophyll is not a cell part.
31(b). RBC: It does not have a cell wall to prevent it from bursting.
LC: The cell wall is strong and rigid to prevent the cell from bursting
:The cell wall gives it a fixed shape/regular shape
:The cell wall protects the cell.
:The cell wall keeps the cell firm (partial): the cell sap should be responsible to keep the cell firm. **Focus** : presence of a cell wall and characteristic/function of a cell wall which will prevent the leaf cell from bursting after it was placed in water.
Unacceptable answers:

32(a). **To find out how** the volume of air in her lungs (her breathing rate) changes with activities A, B and C. /To find out which activity requires the most volume of air in and out of her lungs/ breathe in and out the most number of times/ number of breaths per minute. / To find out **how** the three activities affect the volume of air in lungs.
Focus: There are three activities (A,B and C) so must state 'HOW' instead of 'IF'
32(b). Activity C . Joyce has the **fastest** breathing rate
-**most** volume of air in the lungs
-**most** breaths per minute
Focus: Comparison question, must state the 'superlative' such as fastest, most
Activity C . Joyce has **more** volume of air in her lungs **than activities A and B**
Focus:Comparison question,can state the 'comparative' but must compare with activities A and B
32(c). To provide her muscles/body with **more** oxygen/oxygen faster to allow for higher rate of respiration to produce more energy and remove more carbon dioxide.
Focus: Body requires oxygen during normal activities but requires **more oxygen** during vigorous activities.

33(c). Animal/Insect-**pollinated** and some of the insects/animal/pollinator pollinating flower P could have been eaten by the frogs and will cause chances of pollination to become lesser.
Concept: method of pollination/ cause& effect
Animal/Insect (partial): must use the correct scientific term 'insect-pollinated/ 'animal-pollinated'

34(a) Explain **how** laying **many** eggs each time helps the frog in its survival.
Focus: 'HOW' instead of 'WHY'
To ensure some of the eggs will not be eaten by predators and will hatch into tadpoles which will grow into adult frogs.
If some eggs are eaten by predators (other animals), the rest of the eggs could still hatch into tadpoles and grow into adult frogs.
Unacceptable answer : To ensure the continuity of its own kind/prevent extinction of its kind does not answer the question on the reason behind many eggs being produced but rather the reason for why there is Reproduction.

35(a). Give a reason **why light was not required** for the germination of seeds.
Focus: must explain why light is not needed
A seed relies on its seed leaves for food and it also does not have leaves make food so sunlight/light is not needed.
Unacceptable answer:
Seeds need water, oxygen and warmth: explains what the seeds need to germinate but did not answer the question.

35(b). The amount of water used
Same amount of warmth/same surrounding temperature
The same amount of oxygen
Unacceptable answer:
Location/place/position- not specific and clear as could encompass factors such as 'same amount of warmth/same surrounding temperature/ same amount of oxygen' There are too many factors present in the location and pupils must have the ability to point out which is the factor that will affect the experiment.
Light- germination of seeds do not require it

37(a). Line starts at 100% and ends before 4 hours
Focus: Line Q on the graph already explained that food was digested fully after 4 hours. Hence, blending food Q into smaller pieces will aid in faster digestion/digestion taking place in a shorter period of time.

37(b). The percentage of P remains the same/constant as it was not digested by the animal/ animal's digestive system.
Focus: data (line P from the graph) and explanation- two parts for the answer
Line P remains constant shows that no digestion has taken place at all. (the percentage of undigested food remains at 100%). As the percentage of undigested food decreases, the percentage of digested food increases.
Unacceptable answer:
Too big/Hard/Difficult to be digested – still demonstrates that there is digestion taking place.

38(a). After 15 minutes, James noticed that there are **fewer** water droplets forming at the base of the aluminum sheet. Explain his observation.
Focus: explain why **fewer** water droplets are formed and not only why water droplets are formed.
The aluminum sheet gains heat/not as cold and rate of condensation will be slower

Water becomes cooler/decreases in temperature and lesser evaporation of water will take place and hence less condensation on the aluminium sheet.
Unacceptable answer:
Fewer droplets on aluminium sheet as some dropped into the beaker
Water is hot and water vapour rises to touch the base of the aluminium sheets to form water droplets.- only shows formation of water droplets.

38(b). Water droplets will be found on the outer surface/outside/side of the beaker instead of the underside of the aluminum sheet.
Water vapour in the warmer surrounding air, will lose heat and condense on the cooler surface of the beaker to form water droplets.
Focus: must the expected observation if water at 3 °C is used.

39(a). The steel rod moved towards/ was attracted to iron rod Y/ electromagnet Y. More current passed through circuit B/more batteries, making Y a stronger electromagnet than X.
Focus: state the expected observation and explain it.
More batteries will provide more current/electricity to iron rod Y, hence making it a stronger electromagnet.
39(b). Increase the number of coils of wire **around the rods**.- must state the location

40(a). Circuit A – brightness remains the same/constant with more bulbs : parallel arrangement of bulbs
Circuit B – brightness decreases with more bulbs : series arrangement of bulbs
Focus: Analyse the graph for both circuits
40(b). Voltage too high/Too much current (electricity) passing through the circuit – **[cause]** caused the bulbs to fuse/ filament melted/blew –**[effect]**.
Focus: cause and effect
Unacceptable answer:
Too much power

41(a). Explain **how** an **electric blanket** can keep a person warm.
When the switch is closed, a closed circuit is formed/current can flow through the circuit . The heating element is heated/gains heat/hot.
Focus: To allow the heating element to gain heat, there must be current flowing through a circuit which is provided by a power source.

41(b) Electric current can pass through the body and cause **electrocution**. OR The exposed heating element could cause the person to get **burned**.

41(c). A non-conductor/insulator of electricity. Or
A poor conductor of heat.
Unacceptable answer:
Poor/Bad conductor of electricity

41(d). In circuit A, the entire **heating element will not work** anymore. In circuit B, only the topmost line/strand will not work but the other strands will **continue to work**. /Only 4 heating elements will work/ Only 1 will not work
Focus: state the **effect** on the **heating element**.
Unacceptable answer:
The bulb will not work / only one bulb will work – the circuit is a heating element, not light bulbs.

42(a). Change in **shape**/ Change in the shape of an object.
Focus: state the effect of the force – what could the applied force change?

42(b). No. the **amount of matter remains unchanged** by the applied force./ Force does not change the mass of an object.

43(b). The **gravitational force acting on/weight of the wooden block** is **greater/stronger** than the **magnetic force** (of repulsion) of the **magnets**.
Focus: Which force (acting on the wooden block) could overcome the magnetic force of repulsion (of the two bar magnets) ? Without the wooden block resting on top of the bar magnets, they will repel each other and will not be able to get in contact.

44(a). **Gravitational force** acted on the **iron box** and caused it to stretch the spring/ pull the spring down
Focus: must explain using 'forces' on what caused the spring to stretch
Unacceptable answers:
Gravitational force/gravity caused the spring to stretch- It is the gravitational force acting on the iron box, and not the gravitational force acting on the spring, that caused the spring to stretch.

44(b).magnet

44(c). The extension of the spring in Figure 1 is **less than** the extension of the spring in Figure 2. Explain why.
Focus: comparison question- must explain why extension in spring is lesser in Figure 2.
The concept of more force is used to cause the spring to stretch/extend longer/further is required.

There was only gravitational force acting on the iron box and caused the spring to stretch/extend in figure 1 but there were both gravitational and magnetic force acting on the iron box that caused the spring to stretch/extend further in figure 2 .