NANYANG PRIMARY SCHOOL

PRIMARY 5 SCIENCE

SEMESTRAL ASSESSMENT 2
2017

BOOKLET A

Date : 30 October 2017

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.

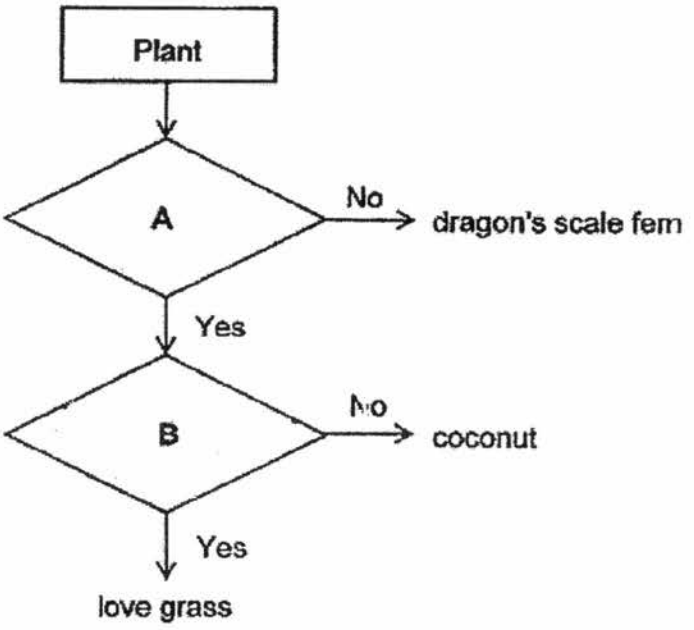
Booklet A consists of 19 printed pages including this cover page.

www.testpapersfree.com

Downloaded from SingaKids.com

Section A (28 x 2 marks = 56 marks)
For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet provided.**

1. Study the flowchart below carefully.



Which one of the following could represent questions A and B?

	A	B
(1)	Reproduce by seeds?	Fruits dispersed by wind?
(2)	Reproduce by seeds?	Fruits dispersed by animals?
(3)	Fruits dispersed by wind?	Reproduce by seeds?
(4)	Fruits dispersed by animals?	Reproduce by spores?

2. Which of the following statement(s) is/are **false** about human fertilisation?

A The baby develops inside the mother's stomach
B Fertilisation is when the sperm fuses with the ovary
C The fertilised egg attaches itself to the wall of the female's womb.

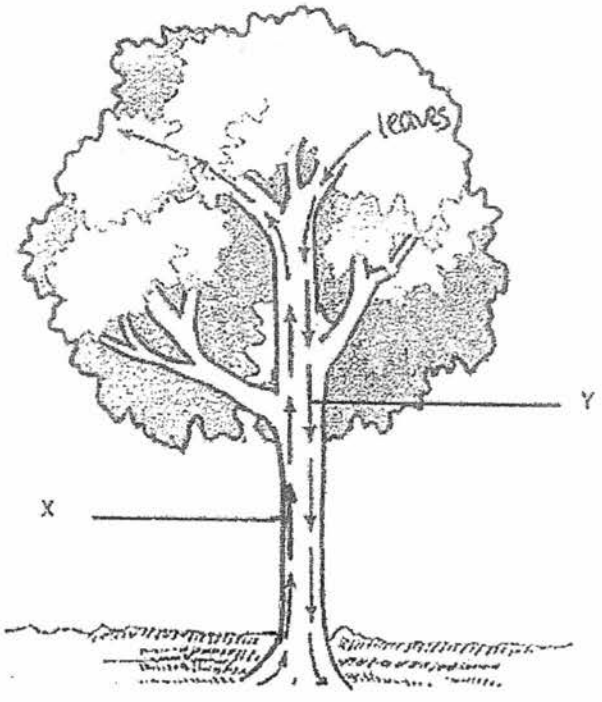
(1) A only
(2) C only
(3) A and B only
(4) B and C only

www.testpapersfree.com
Downloaded from SingaKids.com

3. Seo Jun was *trapped in a lift* and no *fresh air could enter the lift from* outside. Which one of the following would most likely happen to the composition of gases in the lift after 30 minutes?

	Oxygen	Nitrogen	Carbon dioxide	Water vapour
(1)	increases	increases	increases	increases
(2)	decreases	increases	increases	remains the same
(3)	decreases	remains the same	increases	increases
(4)	increases	remains the same	decreases	decreases

4. Study the diagram below.

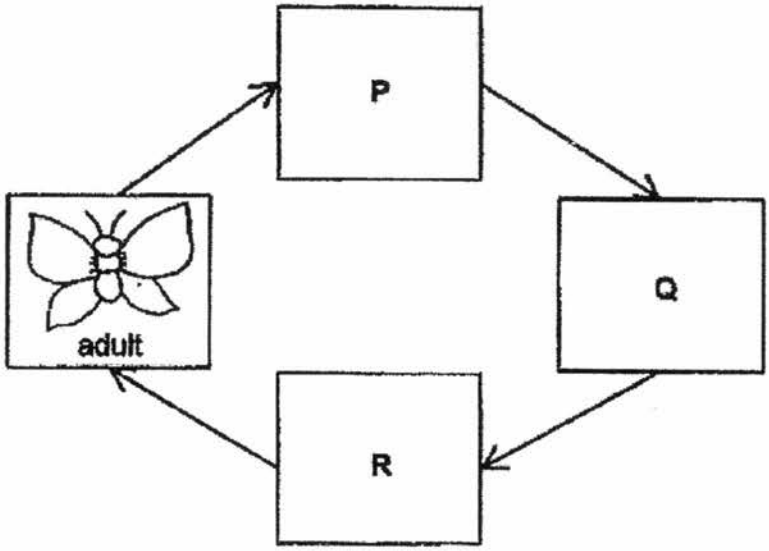


Some substances are transported from 2 plant parts through tubes X and Y. Which of the following correctly represents X and Y?

	X	Y
(1)	Water-carrying tubes	Water-carrying tubes
(2)	Water-carrying tubes	Food-carrying tubes
(3)	Food-carrying tubes	Water-carrying tubes
(4)	Food-carrying tubes	Food-carrying tubes

www.testpapersfree.com
Downloaded from SingaKids.com

5. The diagram below represents the life cycle of a butterfly.



Which one of the following correctly represents stages P and R?

	P	R
(1)	 egg	 larva
(2)	 egg	 pupa
(3)	 larva	 pupa
(4)	 pupa	 larva

www.testpapersfree.com
Downloaded from SingaKids.com

6. ***In terms of the number of stages, which one of the following animals has a life cycle that is different from a chicken's life cycle?***

(1) Frog
(2) Mosquito
(3) Cockroach
(4) Grasshopper

7. Jayce observed two pots of plants as shown below. She placed both plants in a sunny location and watered them daily.



Plant X



Plant Y

After three weeks, she observed that Plant X grew healthily but Plant Y died.

Which one of the following statements correctly explains her observation?

(1) Plant X makes its own food through its woody stem but not Plant Y.

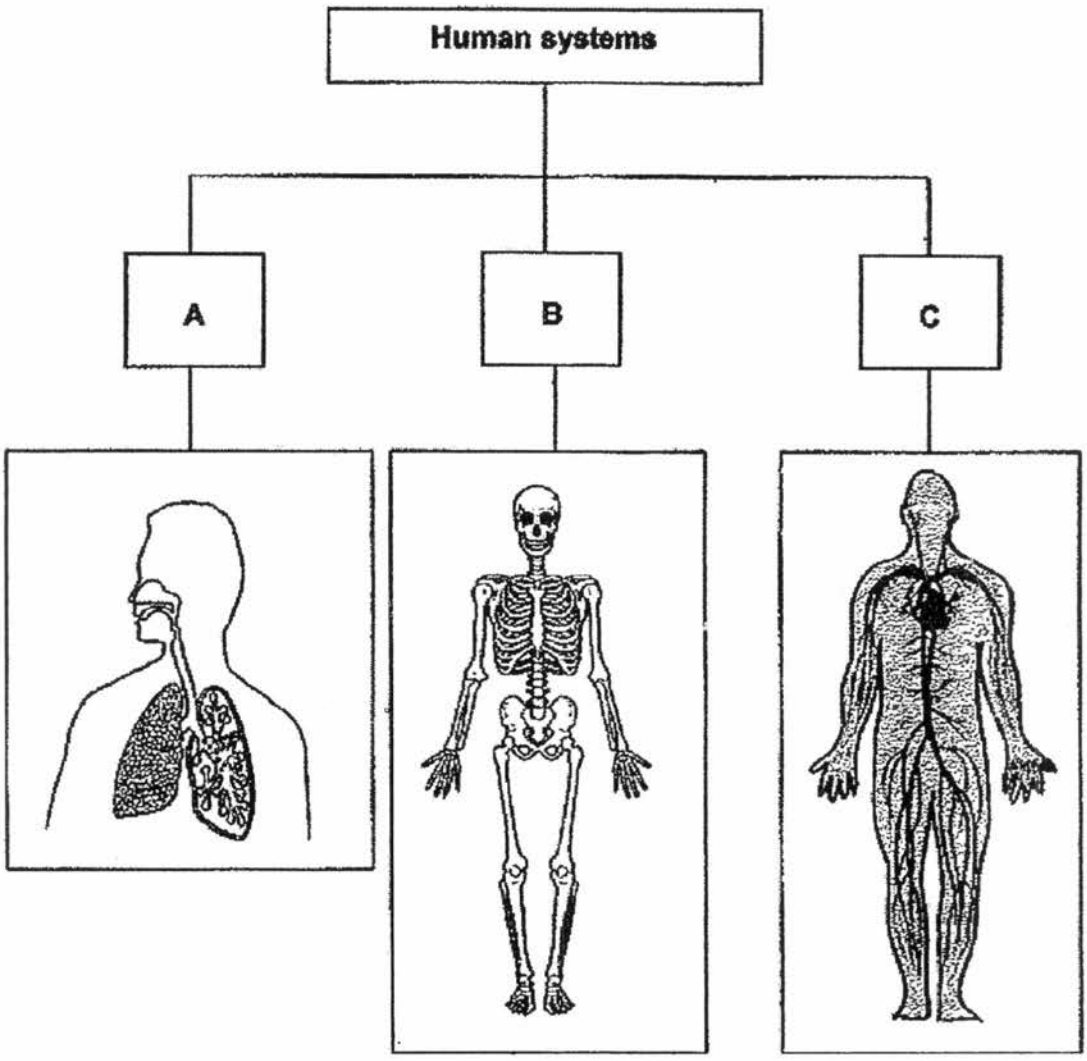
(2) Plant X could make its own food through their leaves but not Plant Y.

(3) Plant X takes in food from the soil through the roots but not Plant Y.

(4) Plant X gets its food from the fertiliser that Jayce uses but not Plant Y.

www.testpapersfree.com Downloaded from SingaKids.com

8. The diagram below represents the different human systems.

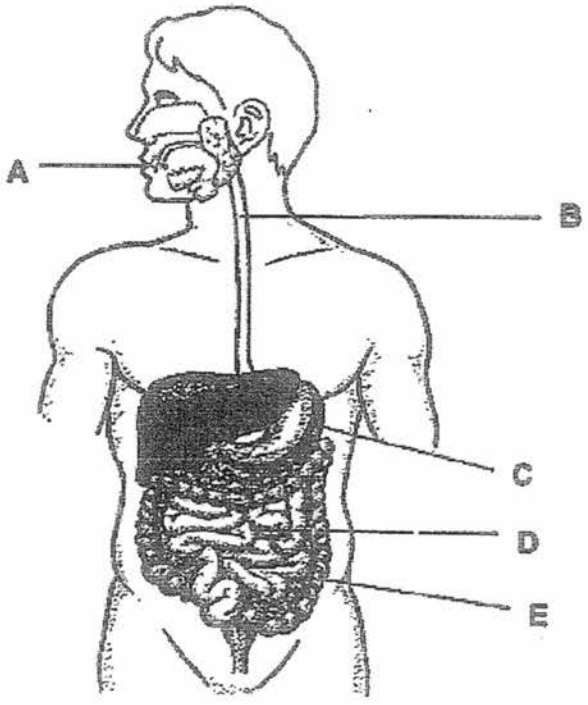


Which of the following best represents headings A, B and C?

	A	B	C
(1)	Circulatory system	Skeletal system	Respiratory system
(2)	Digestive system	Circulatory system	Muscular system
(3)	Respiratory system	Skeletal system	Circulatory system
(4)	Respiratory system	Muscular system	Circulatory system

www.testpapersfree.com
Downloaded from SingaKids.com

9. The diagram below shows the human digestive system.

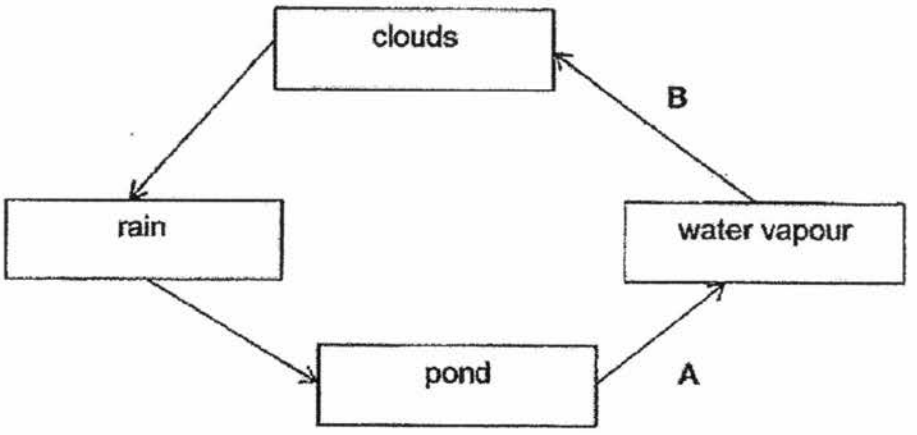


Which of the following parts, A, B, C, D and E, do not produce digestive juice?

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

www.testpapersfree.com
Downloaded from SingaKids.com

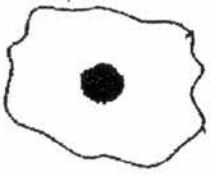
10. The diagram below represents the water cycle.

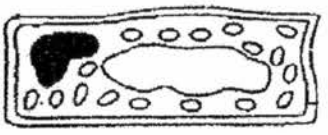


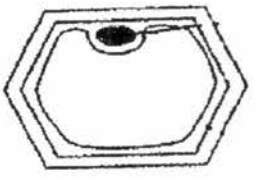
Which one of the following states of matter are the results of the processes A and B in the water cycle?

	States of matter	
	Process A	Process B
(1)	Liquid	Liquid
(2)	Gas	Gas
(3)	Liquid	Gas
(4)	Gas	Liquid

11. Study the three different cells shown below.





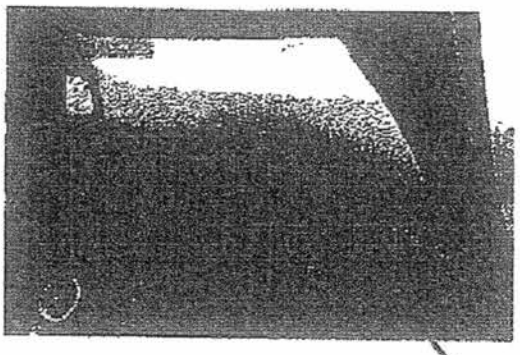


Which one of the following statements is true about **all** the ***three cells***?

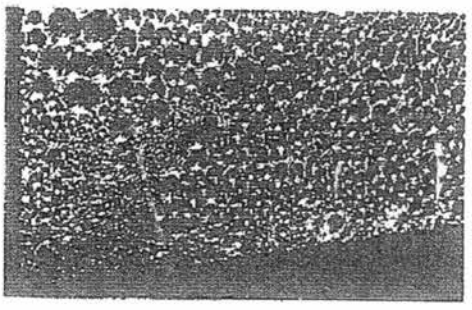
(1) They are plant cells.
(2) They can photosynthesise.
(3) Each cell has a cytoplasm and a cell wall.
(4) Each cell has a nucleus and a cell membrane.

www.testpapersfree.com
Downloaded from SingaKids.com

12. Ji Sung drove for 15 minutes one morning and noticed that the inner *surface* of his car windscreen was *covered with water droplets.*



Interior of the car



Closed-up view of the windscreen

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

A The temperature inside the car was higher than the temperature outside the car.

B The temperature outside the car was higher than the temperature inside the car.

C Increasing the temperature in the car will speed up the formation of water droplets on the inner surface of the windscreen.

D Lowering the temperature in the car will speed up the formation of water droplets on the inner surface of the windscreen.

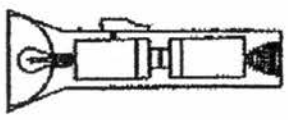
(1) A and C only
(2) A and D only
(3) B and C only
(4) B and D only

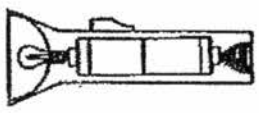
www.testpapersfree.com
Downloaded from SingaKids.com

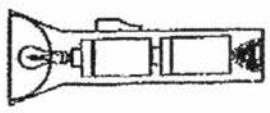
13. Which one of the following activities helps to conserve water?

(1) Using a hose to wash the car.
(2) Washing the plates under running water.
(3) Running a washing machine with a half-load.
(4) Reusing water for washing clothes to wash the toilet.

14. The diagrams below show how the batteries had been arranged in a torch. In which of the arrangements would the bulb light up?

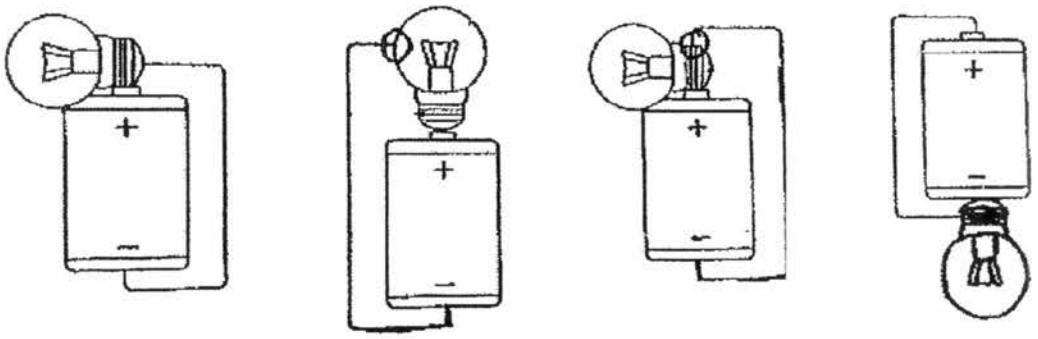
(A) 

(B) 

(C) 

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

15. Study the circuits shown below.



In which circuit will the bulb(s) *not light up*?

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

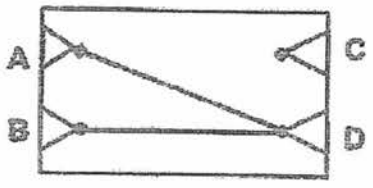
www.testpapersfree.com
Downloaded from SingaKids.com

16. A circuit card with 4 clips is tested with a circuit tester. The results are recorded in the table below.

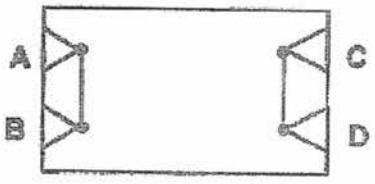
Clips tested	Bulb of circuit tester
A and B	Lighted up
A and C	Did not light up
A and D	Lighted up
B and D	Lighted up
C and D	Did not light up

Which one of the following shows the correct circuit card tested?

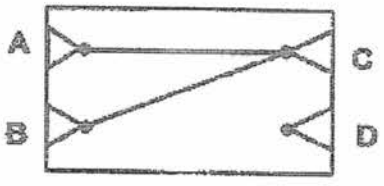
(1)



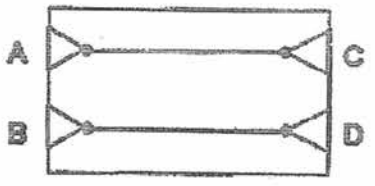
(2)



(3)

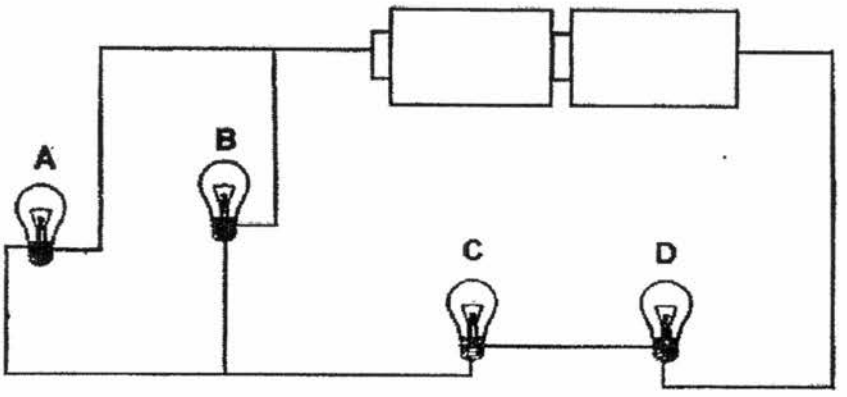


(4)



www.testpapersfree.com
Downloaded from SingaKids.com

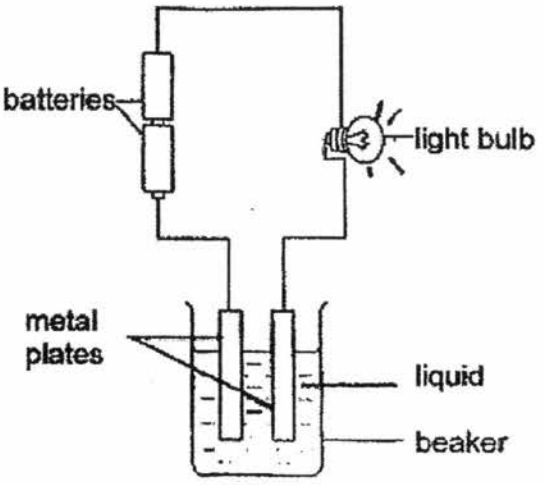
17. Study the circuit below.



Which bulb, if fused, will result in only two other bulbs lighting up in the circuit?

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

18. An experiment is set up as shown below.

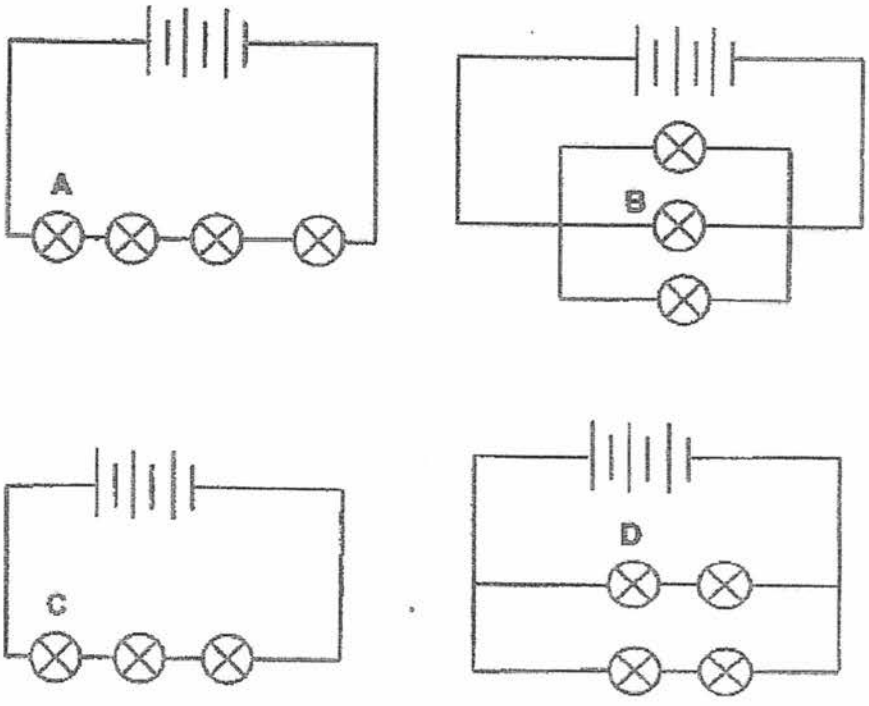


The bulb lights up when the metal plates are put in the liquid. What does this experiment show about the liquid?

(1) The liquid is a poor conductor of heat.
(2) The liquid is a good conductor of heat.
(3) The liquid is a conductor of electricity.
(4) The liquid is a non-conductor of electricity.

www.testpapersfree.com
Downloaded from SingaKids.com

10. The diagram below shows four circuits. Identical batteries and light bulbs had been used in each circuit.

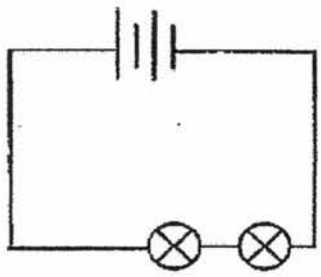


Which one of the following correctly arranges the bulbs from the dimmest to the brightest?

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

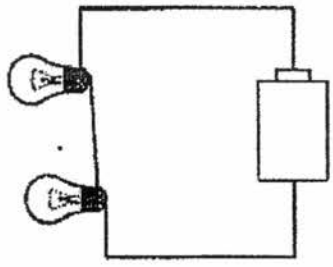
www.testpapersfree.com
Downloaded from SingaKids.com

20. Mae set up a circuit based on the diagram below.

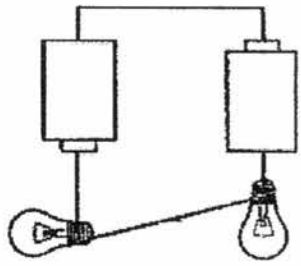


Which one of the following circuits is correctly represented by the circuit diagram above?

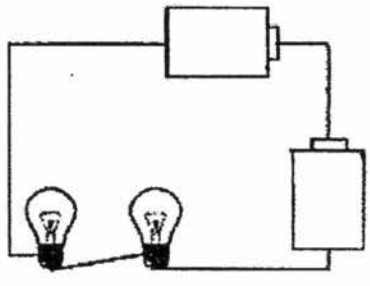
(1)



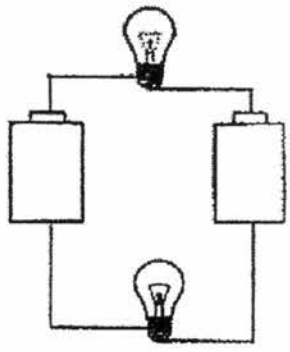
(2)



(3)



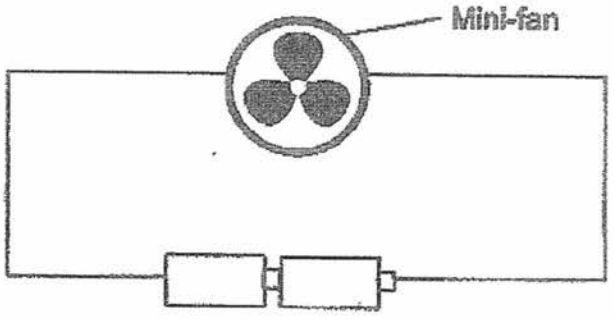
(4)



www.testpapersfree.com

Downloaded from SingaKids.com

21. A mini-fan is connected to a circuit as shown in the diagram below.



What can be done to increase the speed at which the blades of the fan spin?

A Add a switch to the circuit
B Add one more battery in the circuit.
C Use batteries that produce more electricity.
D Change the position of the fan in the circuit.

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

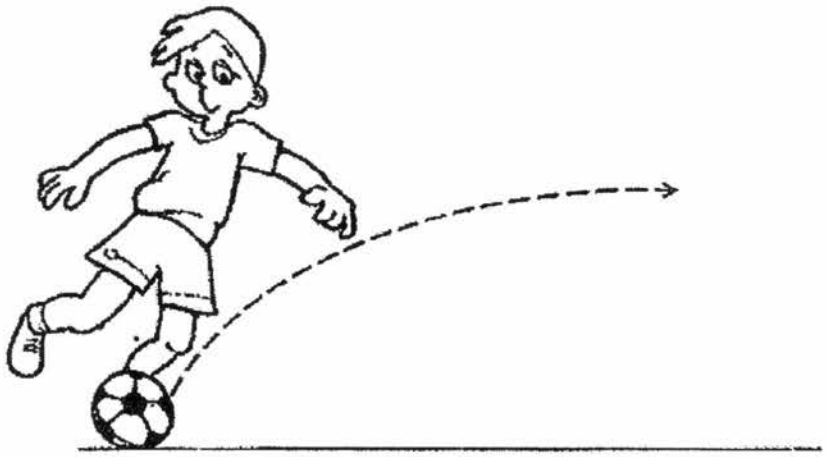
22. Which of the following statements contains correct safety precautions when handling electrical appliances?

A Repair or replace any exposed wires.
B Touch exposed wires with wet hands.
C Do not put too many plugs into one socket.
D Always keep the area near wires or socket dry.

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

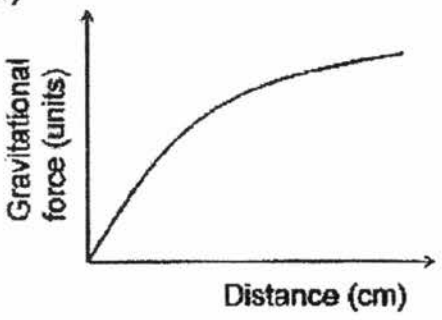
www.testpapersfree.com Downloaded from SingaKids.com

23. Matt kicked a soccer ball as shown in the diagram below. The arrow shows the path of the soccer ball.

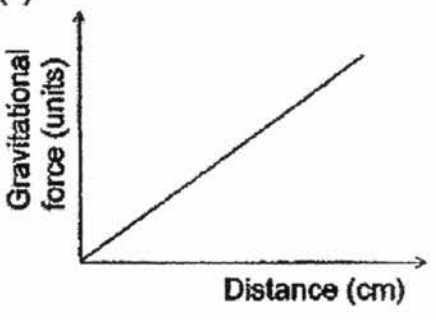


Which one of the following graphs shows the most likely relationship between the gravitational force acting on the soccer ball and the distance of the soccer ball from the ground?

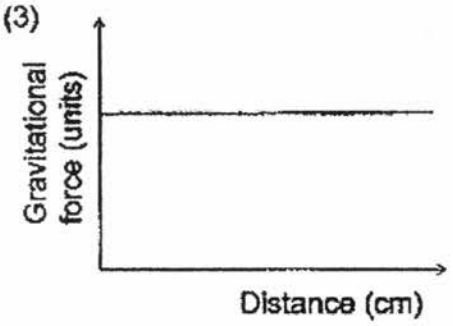
(1)



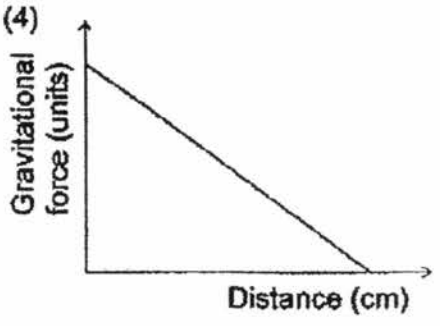
(2)



(3)

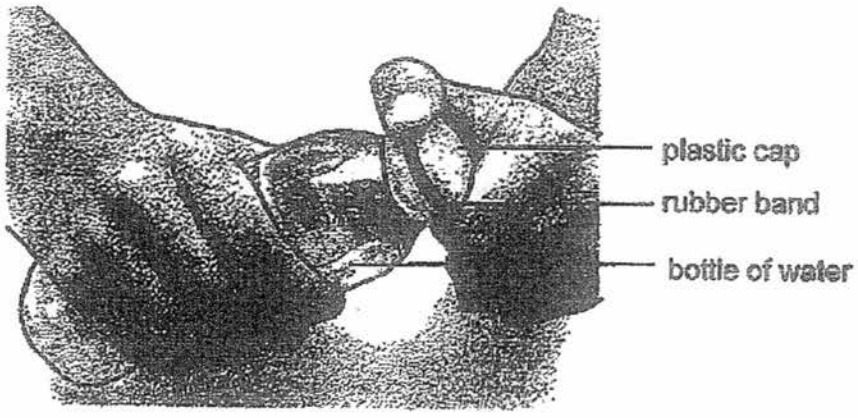


(4)



www.testpapersfree.com
Downloaded from SingaKids.com

24. Kaelyn was unable to remove the cap of a bottle of water as the cap had been screwed on too tightly. She then tied a rubber band over the cap and was able to remove the cap easily.



How does the rubber band help in removing the cap?

(1) The rubber band heated up and expanded the cap.
(2) The rubber band caused the cap to wear out due to frictional force.
(3) The frictional force between the rubber band and Kaelyn's hand helped to provide a better grip.
(4) The rubber band acted as a lubricant and reduced the frictional force between the cap and the bottle.

25. Rui Xiang threw a ball of plasticine towards his sister. His sister caught the ball and accidentally caused a dent in it.

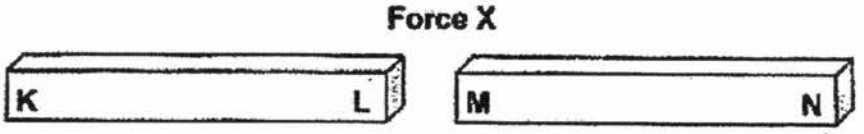
Which one of the following effects of forces did Rui Xiang observe?

A A force can stop a moving object.
B A force can change the shape of an object.
C A force can cause an object at rest to start moving.
D A force can cause a moving object to change its direction in motion.

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

www.testpapersfree.com
Downloaded from SingaKids.com

26. Abigail placed two magnets side by side as shown in the diagram below.



There is a magnetic force exerted between both magnets. However, the poles were unmarked.

Which one of the following could correctly represent Force X and Poles K, L, M and N?

	Force X	Pole K	Pole L	Pole M	Pole N
(1)	Pull	South	North	South	South
(2)	Pull	North	South	South	North
(3)	Push	South	North	South	North
(4)	Push	North	South	South	North

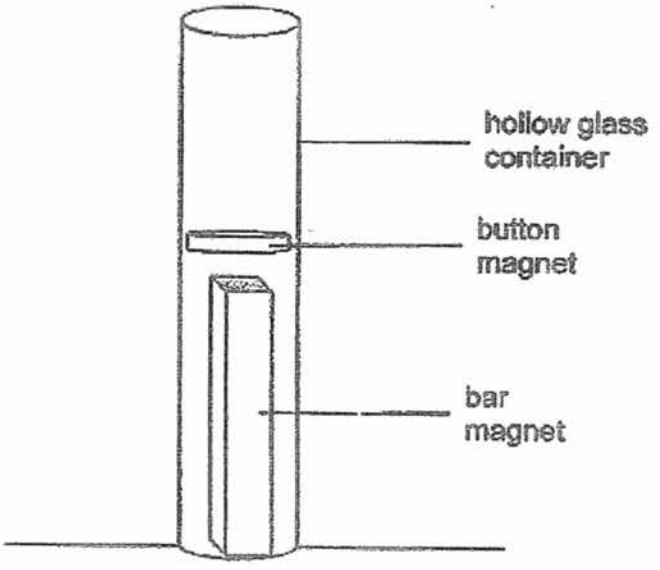
27. An identical object was placed on Planet P and Planet Q. It was observed that the object weighed 20kg on Planet P but 2kg on Planet Q.

Which one of the following statements correctly explains the observation?

(1) The object has less weight on Planet P than Planet Q.
(2) The object has more weight on Planet P than Planet Q.
(3) Planet P exerts less gravitational force on the object than Planet Q.
(4) Planet P exerts more gravitational force on the object than Planet Q.

www.testpapersfree.com
Downloaded from SingaKids.com

28. Miffy placed a button magnet on top of a bar magnet in a hollow glass container. The button magnet floated above the bar magnet as shown below.



Excluding air resistance, which of the following force(s) is/are acting on the button magnet?

A Magnetic force
B Frictional force
C Gravitational force

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

www.testpapersfree.com
Downloaded from SingaKids.com

NANYANG PRIMARY SCHOOL

PRIMARY 5 SCIENCE

SEMESTRAL ASSESSMENT 2
2017

BOOKLET B

Date : 30 October 2017

Duration : 1 h 45 min

Name : _____ ( )

Class: Primary 5 ( )

Marks Scored:

Booklet A:		56
Booklet B :		44
Total :		100

Any query on marks awarded should be raised by 8 Nov 2017. 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: .....

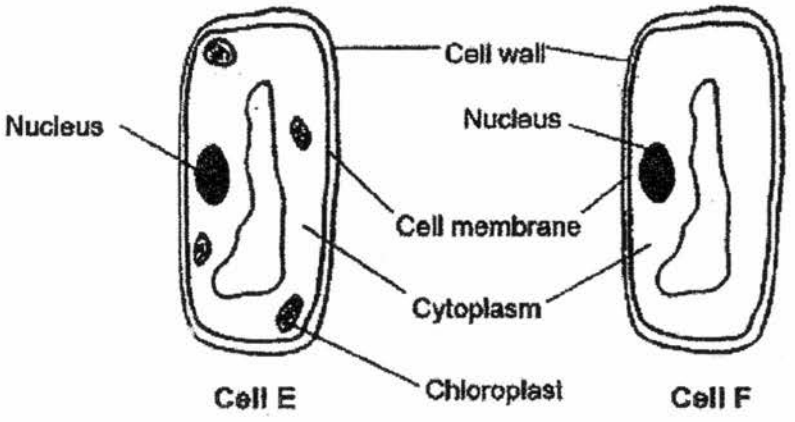
DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.

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

www.testpapersfree.com Downloaded from SingaKids.com

Section B (44 marks)
Write your answers to questions 29 to 41 in the spaces provided.

29. During her Science lesson, Diana observed two types of plant cells, E and F, under the microscope as shown in the diagrams below.



(a) Identify the part of the plant where cells, E and F, were taken from [1]

(i) Cell E: _____

(ii) Cell F: _____

(b) Explain your answer for cell E. [1]

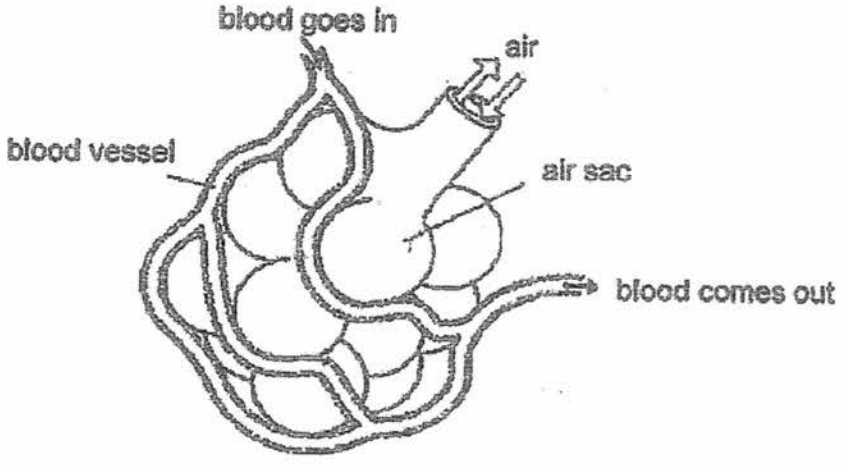
_____

_____

(c) After the lesson, Diana concluded that plants will grow taller when their cells grow longer. Give a reason why she is wrong. [1]

www.testpapersfree.com Downloaded from SingaKids.com

30. There are many air sacs in our lungs. The diagram below shows how each air sac is surrounded by many tiny blood vessels.



It is observed that cigarette smoke damages the walls of the air sacs and causes the number of air sacs to decrease. The table below shows the number of breaths taken by 2 smokers and 2 non-smokers at rest and the number of air sacs found in a sample part of their lungs.

	Number of breaths per min	Number of air sacs found
Smoker 1	25	6
Smoker 2	30	7
Non-smoker 1	10	17
Non-smoker 2	15	20

(a) Based on the table above, state the relationship between the number of air sacs found in the lungs and the rate of breathing at rest. [1]

(b) Explain why the breathing rate of a smoker at rest is higher than a non-smoker at rest? [1]

www.testpapersfree.com Downloaded from SingaKids.com

(c) When both the smoker and non-smoker exercise, their breathing rates will increase. Explain why. [2]

_____

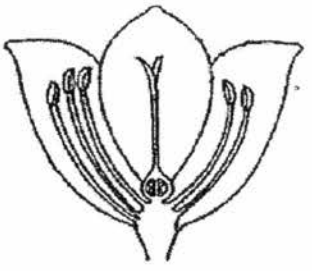
_____

_____

_____

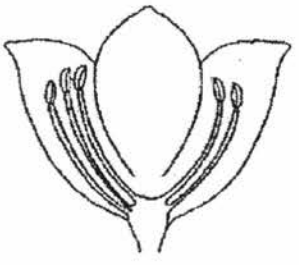
31. Phoebe was in a garden and she plucked flowers Q, R and S, which were of the same type but from different plants as shown below. She placed the flowers in an open box.

(a) Draw one arrow in **each diagram** to show how the flowers in Diagrams 1 and 2 could be pollinated. [2]

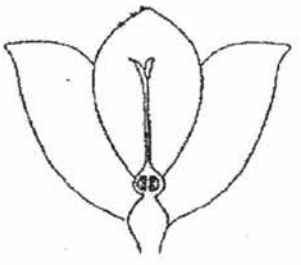


Flower S

Diagram 1



Flower Q



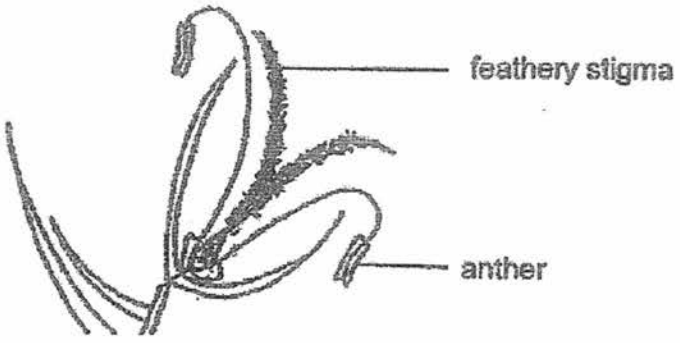
Flower R

Diagram 2

www.testpapersfree.com

Downloaded from SingaKids.com

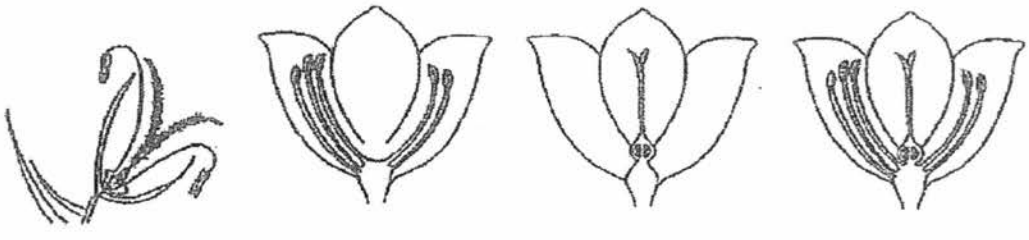
Phoebe then went on to pick Flower P, which was of a different type, as shown below.



Flower P

(b) State the most likely way Flower P is pollinated. Based only on the diagram above, explain your answer. [2]

Study the four flowers below.



Flower P Flower Q Flower R Flower S

(c) Which flower, P, Q, R or S, cannot develop into fruits? Give a reason for your answer. [1]

www.testpapersfree.com Downloaded from SingaKids.com

32. **Andrea, Bala and Charlie compared the life cycle of a toad with the life cycle of a mosquito and made the following statements.**

Andrea:	The young of both animals resemble the adult.
Bala:	Both the animals have a three-stage life cycle.
Charlie:	The young of both animals develop from eggs.

(a) Which two students had made the wrong statements? Give a reason to support your answer. [2]

(i) Name of student: _____

Reason:

_____

_____

(ii) Name of student: _____

Reason:

_____

_____

Their friend told them that the mosquito larva would eat a lot and then shed its skin in order to grow bigger.

(b) Name the process that the mosquito larvae went through. [1]

_____

www.testpapersfree.com Downloaded from SingaKids.com

33. Gerald was given three pots as a present from his mother. In each pot, there were soil and seeds of the same type of plant. He put the pots near a window and watered the seeds daily.

(a) State the two structures that would appear as each seed germinates.[1]

Appears first: _____

Appears next: _____

After a few weeks, he observed that the plants in the three pots were at different stages of growth as shown below.



Plant A Plant B Plant C

(b) Which one of the plants, A, B or C, would most likely be the first to bear fruit? Give a reason for your answer. [1]

_____

_____

Gerald's sister repeated the experiment by putting the three pots in a warm dark room. She watered the seeds daily.

(c) Would the seeds be able to germinate? Explain your answer. [1]

_____

_____

www.testpapersfree.com Downloaded from SingaKids.com

34. State the functions of the following human systems. [2]

(i) Skeletal system :

_____

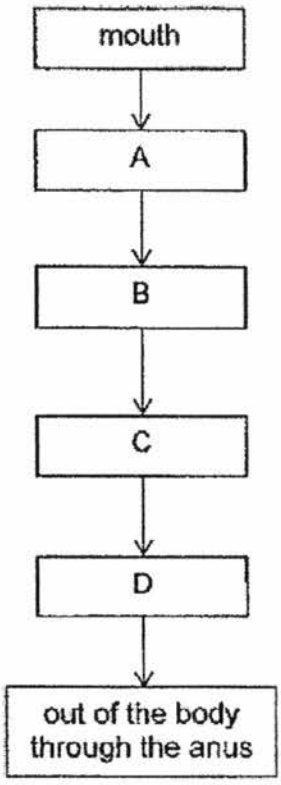
_____

(ii) Circulatory system :

_____

_____

35. The flow chart below shows the pathway taken by food after it enters the mouth. A, B, C and D are parts of the digestive system.



(a) Which part, A, B, C or D, contains the most amount of digested food? Name that part. [1]

(i) Part _____

(ii) Name of that part _____

www.testpapersfree.com Downloaded from SingaKids.com

(b) What would happen to the food at parts C and D? [2]

(i) Part C :

_____

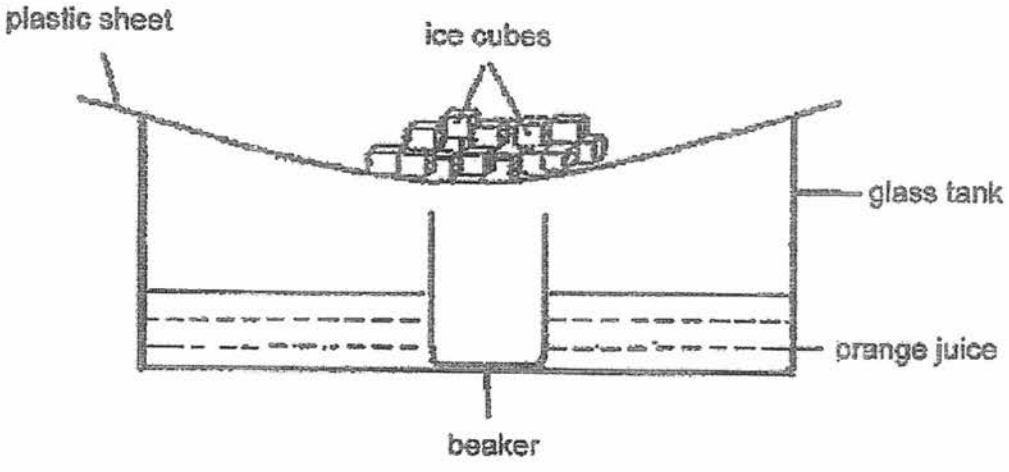
_____

(ii) Part D :

_____

_____

36. Bong Soon prepared the following set-up. She boiled some orange juice before pouring it into the glass tank.



Bong Soon left the set-up under the sun for 2 hours.

(a) What would be collected in the beaker after 2 hours? [1]

_____

(b) Give a reason for your answer in (a) [2]

_____

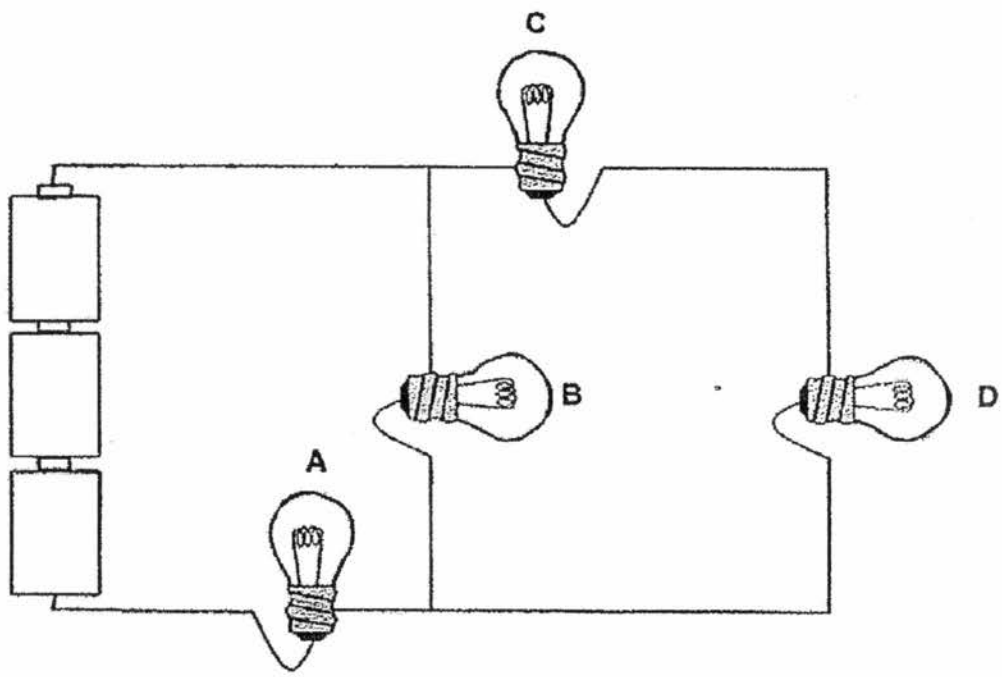
_____

_____

www.testpapersfree.com Downloaded from SingaKids.com

(c) Bong Soon changed the plastic sheet into a metal sheet. Give a reason why there was **less *water*** collected in the beaker after 2 hours. [1]

The electric circuit below is made up of four bulbs, A, B, C and D, three batteries and some wires.



It was observed that after setting up the circuit, all the bulbs light up.

(a) Explain what will happen to the other three bulbs if bulb B is removed. [1]

(b) Lynn decided to install a switch to control all the bulbs. **Mark a cross (X)** on the circuit above to show where the switch should be placed. [1]

www.testpapersfree.com Downloaded from SingaKids.com

38. Some students wanted to find out how the number of bulbs in a series circuit affects the brightness of the bulbs. The table below shows their results.

Set-up	Number of bulbs	Brightness of the bulb(s)
A	1	Very bright light
B	4	Bright light
C	8	Dim light
D	16	Very dim light

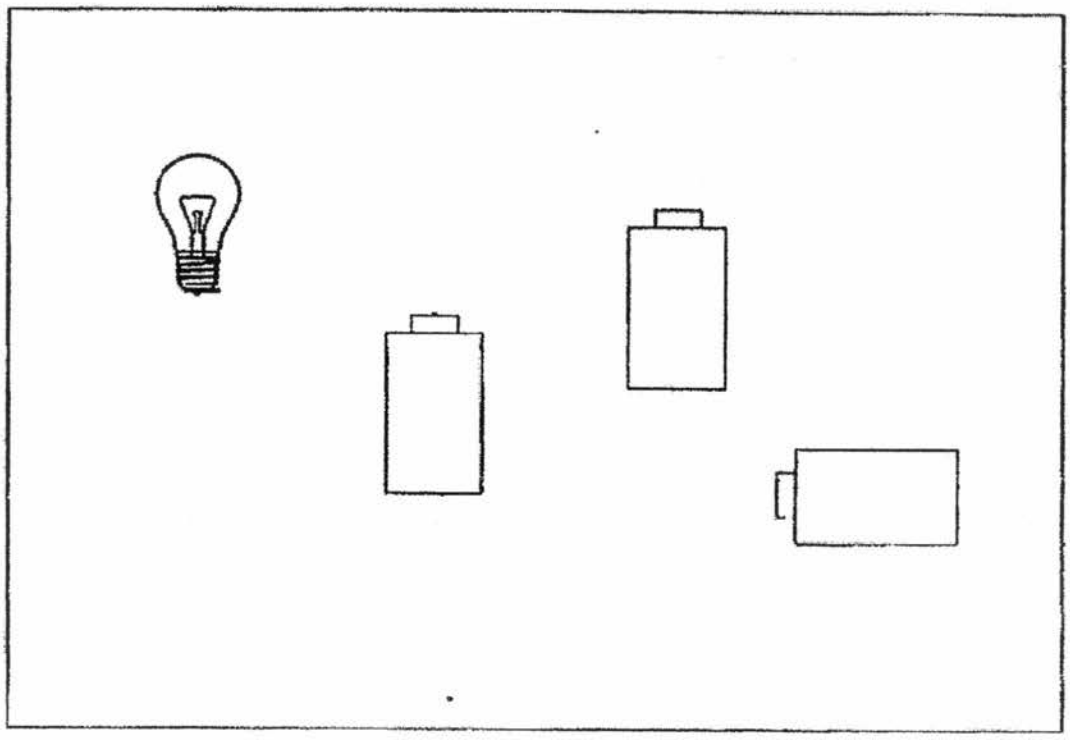
(a) What is the relationship between the number of bulbs and the brightness of the bulbs? [1]

(b) In the table below, indicate with a (√), the variables that must be kept constant. [2]

Variables	To be kept constant
Number of bulbs	
Material of wire	
Thickness of wire	
Type of batteries	
Type of bulbs	
Brightness of the bulbs	

www.testpapersfree.com Downloaded from SingaKids.com

39. **The following diagram shows a bulb and three batteries.**

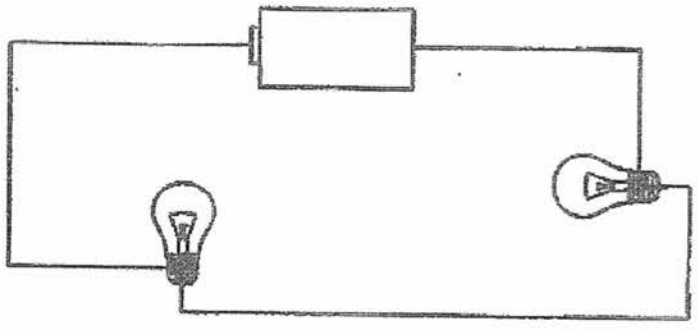


(a) Draw **4 wires** to show how to connect the circuit so that bulb will light up the brightest. [2]

(b) What is the one possible observation that could be made if two batteries are added in series to the circuit above? Explain your answer. [2]

www.testpapersfree.com Downloaded from SingaKids.com

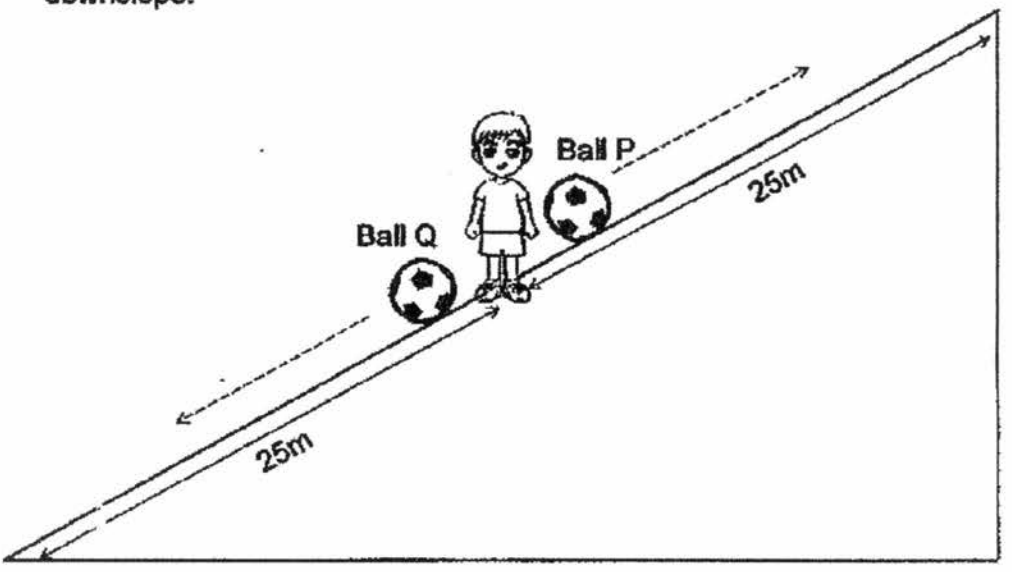
(c) An electric circuit is set up using a battery, two bulbs and some wires as shown below.



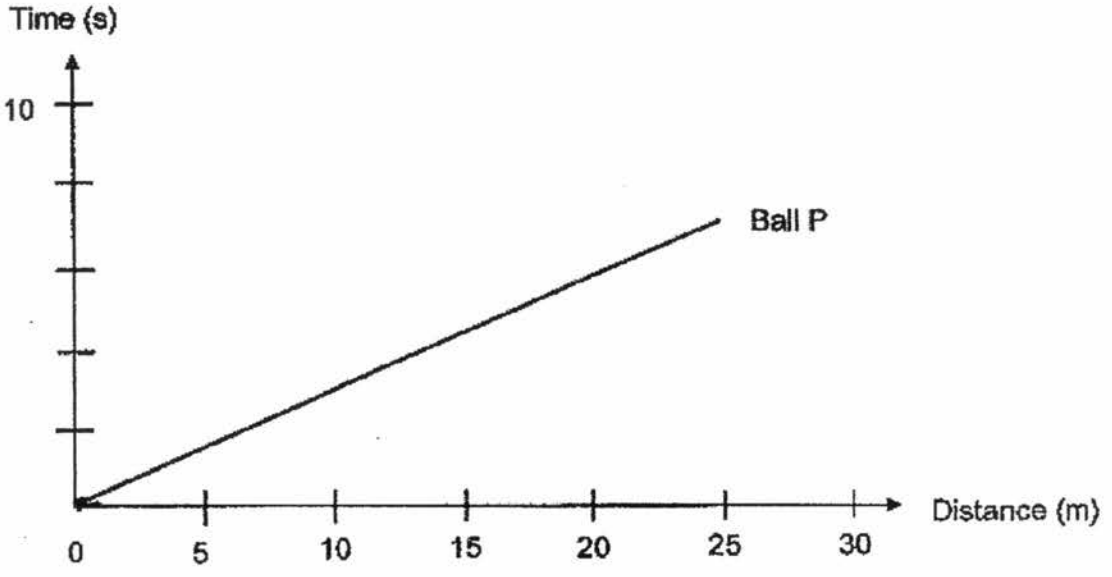
Without adding a new bulb and battery, suggest a way to make the bulbs brighter. [1]

www.testpapersfree.com Downloaded from SingaKids.com

40. Xiaoyi kicked two identical balls, P and Q, from the same starting point with the same amount of force. Ball P was kicked upslope while Ball Q was kicked downslope.



The graph below shows the distance travelled by Ball P and the amount of time taken to travel this distance.

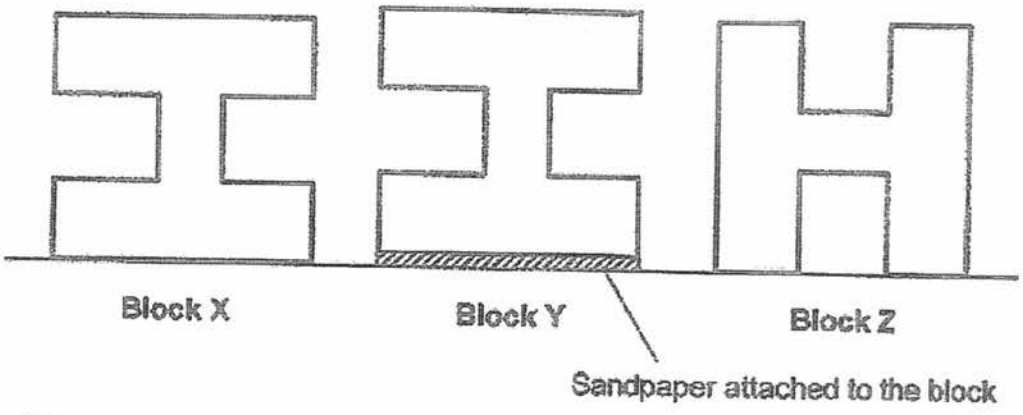


(a) In the same graph shown above, draw the results Xiaoyi would expect to see from Ball Q. [1]

(b) State two forces that were acting on the ball as he kicked it up the slope. [2]

www.testpapersfree.com
Downloaded from SingaKids.com

41. Laurel has three identical blocks, X, Y and Z, and placed them in different positions on the floor.



There was no obstruction on the floor. She gave block X a push to slide it across the floor and observed that block X eventually came to a stop.

(a) Using the concept of forces, give a reason why X came to a stop. [1]

Laurel repeated the experiment with blocks Y and Z. She applied the same amount of force on each block and recorded her results in the table below.

Block	Distance travelled by the blocks (cm)
X	10
Y	6
Z	10

(b) Using the concept of forces, explain why block Y travelled a different distance compared to block X. [2]

(c) Give a reason why even though block X had a greater surface area in contact with the floor than block Z, both blocks still travelled the same distance. [1]

End of paper

www.testpapersfree.com Downloaded from SingaKids.com

www.testpapersfree.com

SCHOOL : NANYANG PRIMARY SCHOOL
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : 2017 SA2

SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
2	3	3	2	2	2	2	3	2	4

Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
4	1	4	1	2	1	2	3	3	2

Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28
3	4	3	3	3	4	4	2

SECTION B

Q29)	A. Ii) Leaf ii) flower B. Cell E has chloroplast in it, making it able to make trap sunlight to make food. So Cell E was taken from a leaf. C. The cell will divide when it reaches a certain size.
Q30)	(a) - (b) As the air sacs are lesser, the smoker has to breathe more to get more oxygen while the non-smoker has more air sack to absorb more oxygen. (C) Their breathing rates will increase to take in more oxygen and at the same time to remove more carbon dioxide.
Q31)	(a) (B) Flower P is pollinated by wind. Its anthers are sticking out of the flower to allow the wind to transfer the pollen grains and the male reproductive cell to the feathery stigma that will catch them.

www.testpapersfree.com
Downloaded from SingaKids.com

	(C) Q. It has no ovary, stigma and style for the male reproductive cell to pollinate and fertilise.
Q32)	(a) i. Andrea. The young of both animals do not resemble the adult. (a) ii. Bala. The mosquito has a four-stage life cycle. (b) Moulting
Q33)	(a) Roots —>shoots (b) B. The flowers have bloomed so it can be pollinated. (c) Yes. A seed needs warmth, water and oxygen but not sunlight to germinate and the seeds have all the conditions required
Q34)	i It gives the body shape and protects the heart and lungs. ii. It transport digested food, water and oxygen to all parts of the body and transports away carbon dioxide and other waste materials from the body.
Q35)	(a) (i) C (ii) small intestine (b) (i) Digested food and nutrients are absorbed into the blood stream. (ii) Undigested food becomes dry.
Q36)	(a) water (b) Water in the orange juice gains heat and evaporates into water vapour. The water vapour then touches the cooler surface of the plastic sheet, loses heat and condenses into tiny water droplets. It then dripped into the beaker. (c) The metal sheet gains heat from the sun and gets hot. Hence the rate of condensation is slower, causing less condensation.
Q37)	(a) The other bulbs will still light up as electricity can still flow through.

www.testpapersfree.com Downloaded from SingaKids.com

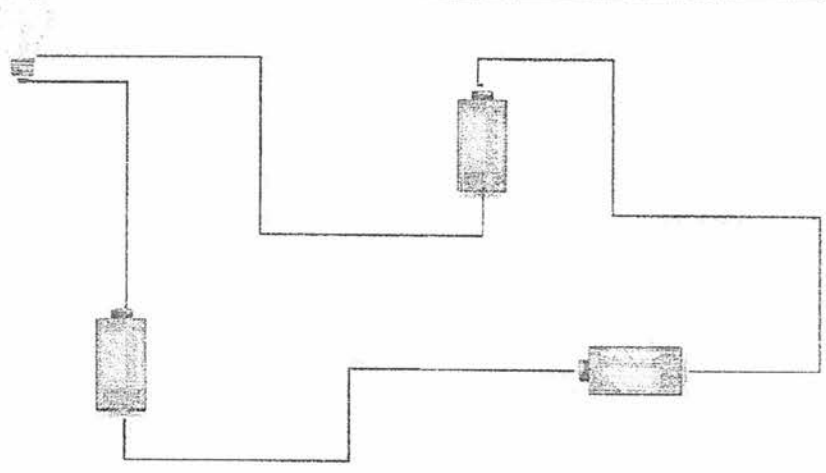
Q38)

(a) The more the number of bulbs, the dimmer the brightness of the bulbs.

(b)

Variables	To be kept constant
Number of bulbs	
Material of wire	√
Thickness of wire	√
Type of batteries	√
Type of bulbs	√
Brightness of the bulbs	

Q39)

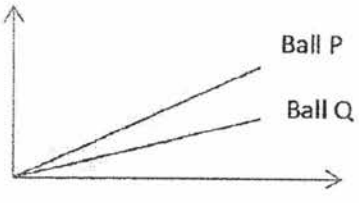


(b) The bulb could fuse. There is too much electric current passing through.

(c) Arrange the bulbs in parallel.

Q40)

(a)



(b) Frictional force and gravitational force.

Q41)

(a) The frictional force between block X and the floor caused X to come to a stop.

(b) The base of block Y has a rougher surface than Block X. There is a greater amount of frictional force between the sandpaper and the floor. Hence, block Y travelled a shorter distance.

(c) The surface area in contact does not affect the amount of frictional force.

www.testpapersfree.com

Downloaded from SingaKids.com