Name: _____ ( ) Date: _____

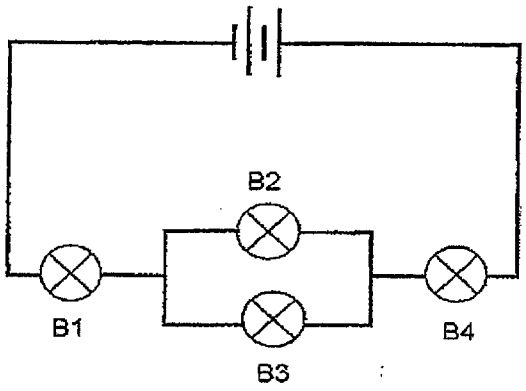
Class: _____ Parent's signature: _____

Tao Nan School

Primary 5 Science Topical Practice

Systems: Electricity

1. In the circuit below, all the bulbs, B1, B2, B3 and B4, are lit.



What is the highest number of bulbs that would remain lit when one of the bulbs is fused?

(1) 0

(2) 1

(3) 2

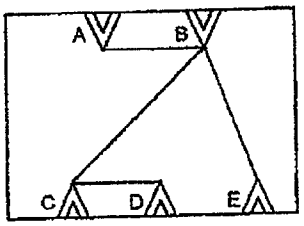
(4) 3 ( )

2. Clara used a circuit tester to test a circuit card. Her results are recorded in the table below.

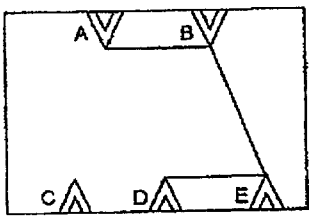
Clips connected to circuit tester at points	Does the bulb light up?
A and C	Yes
A and D	Yes
A and E	No
B and C	No
B and D	No
B and E	Yes
D and E	No

Which of the following represents the circuit card Clara tested?

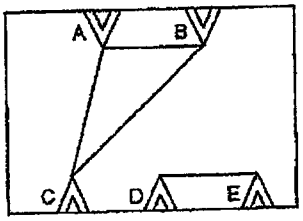
(1)



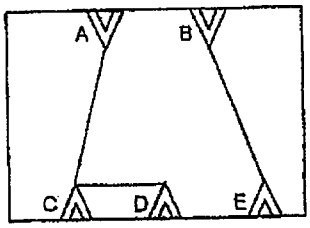
(2)



(3)

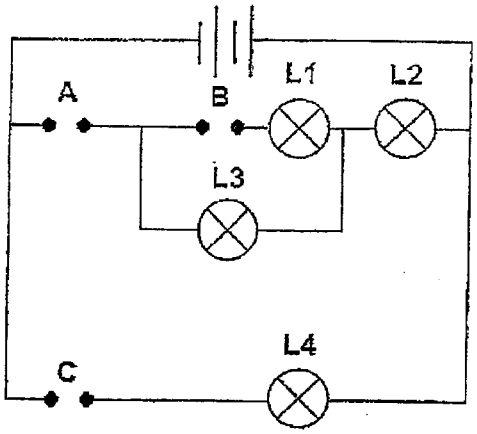


(4)



( )

3. Wei Qing had three rods, X, Y and Z, made of unknown materials. He placed them at various positions, A, B and C, in the circuit below.



The results are shown in the table below. When any of the lamps, L1, L2, L3 or L4, lit up, a tick (✓) was placed in the box.

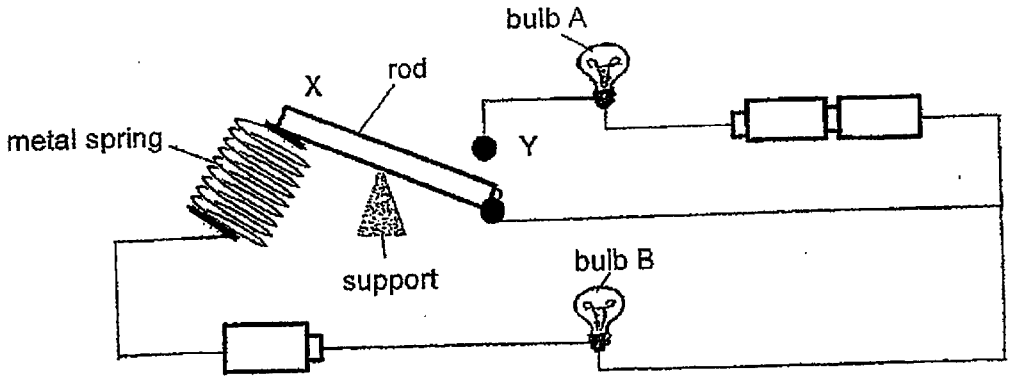
Positions where rods were placed			Lamps			
A	B	C	L1	L2	L3	L4
X	Y	Z		✓	✓	✓

Which of the following shows what the result will be when the rods, X, Y and Z, are placed at the different positions?

	Positions where rods were placed			Lamps			
	A	B	C	L1	L2	L3	L4
(1)	X	Z	Y		✓	✓	✓
(2)	Y	Z	X			✓	✓
(3)	Z	Y	X	✓	✓	✓	
(4)	Y	X	Z				✓

( )

4. The diagram below shows a circuit made up of identical bulbs and batteries. Initially, bulb A is unlit while bulb B is lit.



Which of the following will be observed when the metal rod is pressed at point X until it hits point Y?

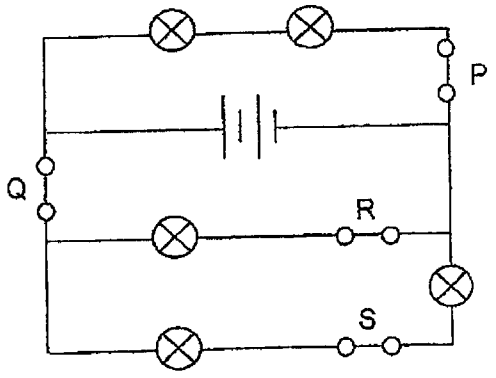
(1) Only bulb A will light up.

(2) Only bulb B will light up.

(3) None of the bulbs will light up.

(4) Both bulbs A and B will light up. ( )

5. Farah set up a circuit with the switches, P, Q, R and S, as shown below.



All five bulbs were lit when all four switches were closed. Farah wanted the fewest number of bulbs to be lit by opening only one switch. Which switch should she open?

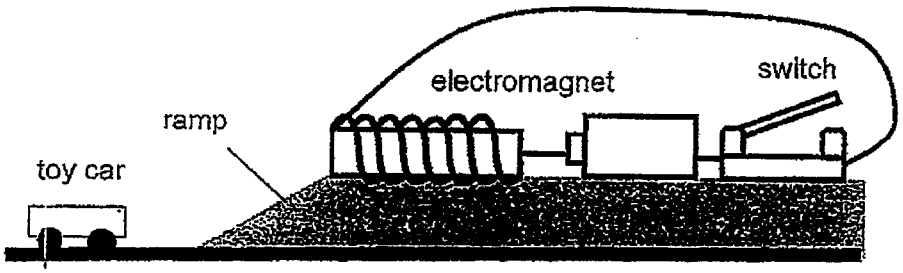
(1) P

(2) Q

(3) R

(4) S ( )

6. The diagram below shows an electromagnet and a toy car.



When the switch is closed, the toy car moves up the ramp towards the electromagnet.

Based on the above information, which of the following statement(s) is/ are true?

A: The toy car is made of magnetic material.

B: As the number of batteries increases, the toy car will move up the ramp faster.

C: As the number of coils around the electromagnet decreases, the toy car will move up the ramp faster.

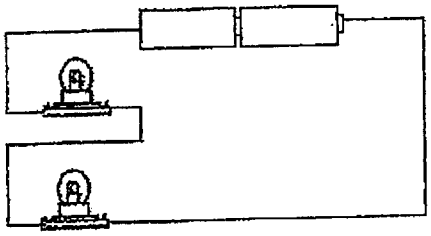
(1) A and B only

(2) B and C only

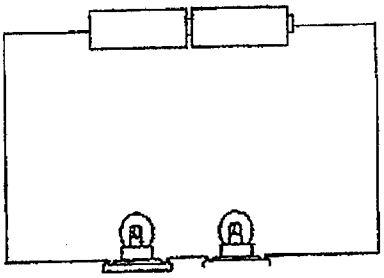
(3) A and C only

(4) A, B and C ( )

7. Angelina wanted to find out if the arrangement of the bulbs would affect the brightness of the bulbs. Using the same electrical components, she set up two circuits, circuit A and circuit B, as shown below.



circuit A

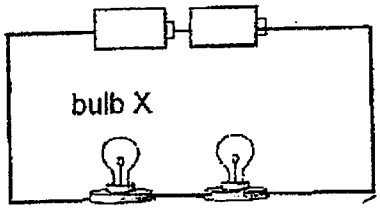


circuit B

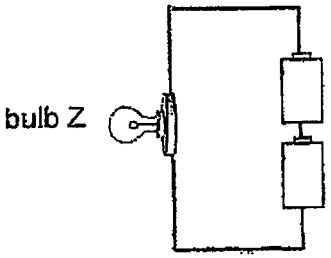
Angelina concluded that the arrangement of the bulbs does <u>not</u> affect the brightness of the bulbs

(a) Angelina's teacher told her that no conclusion can be made from the two circuit arrangements. Explain why. [1]

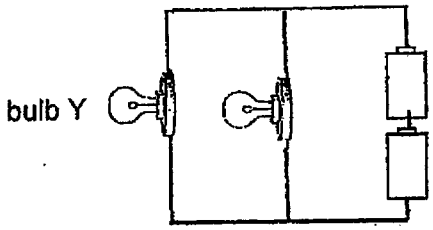
Study the following diagrams carefully. Identical electrical components were used.



circuit B



circuit D



circuit C

bi) What would you observe about the brightness of the following bulbs?
Tick (✓) the correct boxes.

Comparison between Circuits C and D

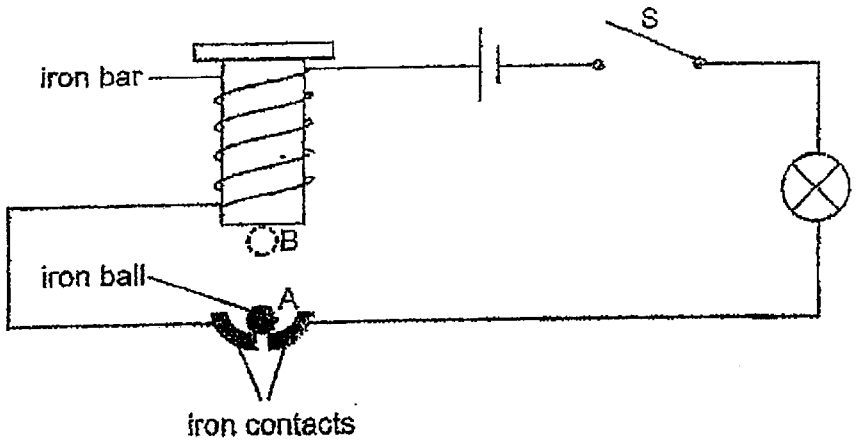
bulb	brighter	dimmer	same brightness
Y			
Z			

Comparison between Circuits B and D

bulb	brighter	dimmer	same brightness
X			
Z			

bii) Mr Tan is an electrical engineer. He bought a new house. Which circuit arrangement, circuit B or circuit C, should he use to install two lamps in the bedroom? Explain why.
[2]

8. Study the circuit shown below. When Ahmad closed the switch S, he noted that the iron ball moved up and down between points A and B, and the light bulb turned on and off repeatedly.



(a) In the diagram, the iron call was resting on two iron contacts.

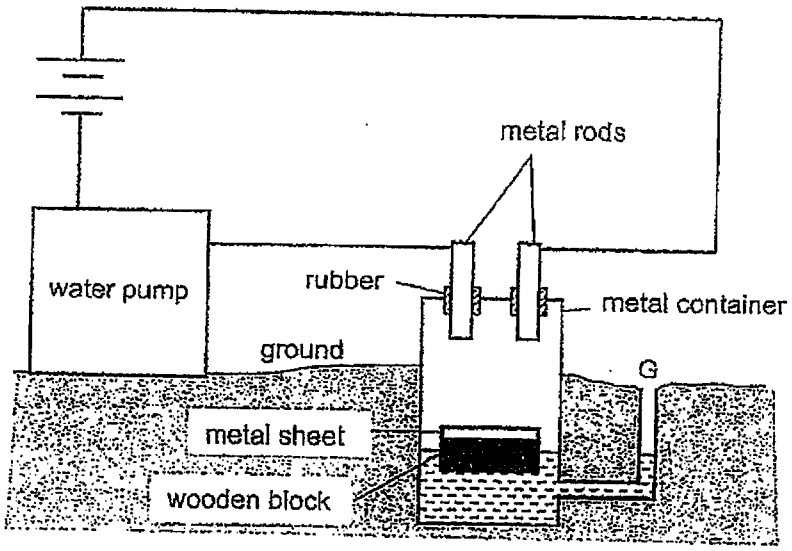
Explain why the bulb lit up when the iron ball was at point A. [1]

(b) When the iron ball was at point A, it was attracted by the iron bar.
Give a reason for this observation. [1]

(c) What would happen to the iron ball when it was at point B?
Give a reason for your answer. [2]

2013/Q44

9. Poh Lee wants to remove water from the ground using a water pump when it rains heavily. He uses the set-up shown below to turn on the water pump.



Rain water enters the container through a hole at G.

(a) State a property of rubber that allows the set-up to work properly. [1]

(b) Describe and explain how the water pump is turned on when it rains heavily. [2]

(c) Without using different apparatus, suggest one way to turn on the water pump when it rains less heavily. Explain your answer. [1]

2017/Q40

YEAR : 2025
LEVEL : PRIMARY 5
SCHOOL : TAO NAN SCHOOL
SUBJECT : SCIENCE
TERM : Topical Practice

Q1	4	Q2	4	Q3	4	Q4	4	Q5	2
Q6	1								

Q7	a) the arrangement of the bulbs in both circuits are in series. b) i. Comparison between Circuit C and D Y (same brightness) , Z (same brightness) comparison between B and D X (dimmer) , Z (brighter) ii. circuit C. Bulbs are arranged in parallel when one lamp is faulty, the other lamps still be tuned on. Or switching on off the lights in each bedroom can be operated separately.
Q8	a) when the iron ball was at A , a closed circuit was formed. Hence, electricity could flow through. b) the iron bar became magnetized an electro magnet and attracted the iron ball which is made of magnetic materials. c) when the iron ball is at point B , the circuit is open, no electricity flows in the circuit. The iron bar is no longer an electro magnet , the iron ball is not attracted by the iron bar. Hence, the iron ball dropped down to point A.
Q9	a) electrical insulator b) when it rains , the water level rises causing the metal sheet to rise. The metal sheet then touches the metal rods, from a close circuit and allow electricity pass through to turn on the pump. c) lower the metal rod. Less rain water is now needed to for the metal sheet to touches the metal rod, closing the circuit and turn on the pump.

END