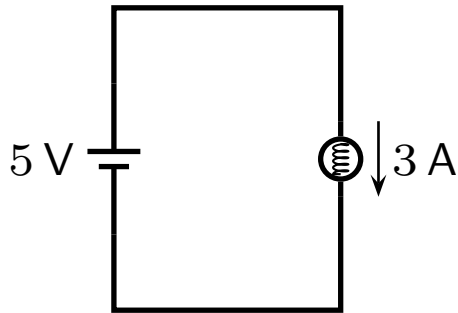


Question 1

A bulb is connected to a battery as illustrated.



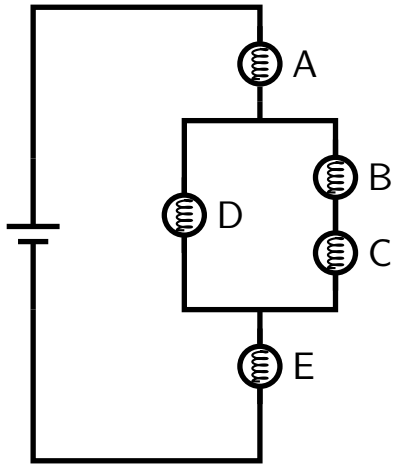
The current through the bulb and potential difference across the battery are indicated. The wires offer negligible resistance.

Which of the following is true?

1. In 10 s the total charge that flows through the bulb is 3 C and through the battery 3 C.
2. In 10 s the total charge that flows through the bulb is 5 C and through the battery 5 C.
3. In 10 s the total charge that flows through the bulb is 30 C and through the battery 5 C.
4. In 10 s the total charge that flows through the bulb is 30 C and through the battery 30 C.
5. In 10 s the total charge that flows through the bulb is 30 C and through the battery 50 C.

Question 2

Several identical bulbs are connected in a circuit as illustrated.



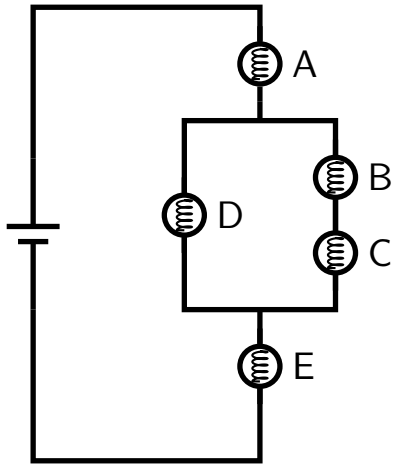
The relative brightnesses of these bulbs depend only on the relative currents which flow through them.

Which of the following is true?

1. A is brighter than E.
2. A is dimmer than E.
3. A and E have the same brightness.

Question 3

Several identical bulbs are connected in a circuit as illustrated.



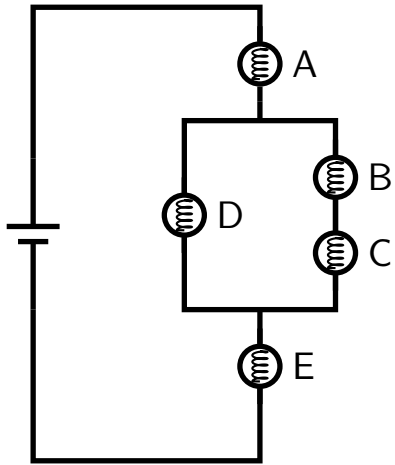
The relative brightnesses of these bulbs depend only on the relative currents which flow through them.

Which of the following statements about brightness is true (choose one)?

1. $A > B > C$
2. $A < B < C$
3. $A > B = C$
4. $A < B = C$
5. $A = B = C$

Question 4

Several identical bulbs are connected in a circuit as illustrated.



The relative brightnesses of these bulbs depend only on the relative currents which flow through them.

Which of the following statements about brightness is true (choose one)?

1. $A > B > D$
2. $A > D > B$
3. $A > B = D$
4. $A = D > B$
5. $A = B = D$