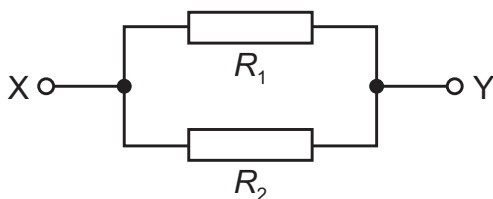


- 37** The principles of conservation of which two quantities are associated with Kirchhoff's first and second laws?

|          | first law | second law |
|----------|-----------|------------|
| <b>A</b> | charge    | energy     |
| <b>B</b> | charge    | voltage    |
| <b>C</b> | energy    | charge     |
| <b>D</b> | voltage   | charge     |

- 36** Two resistors of resistances  $R_1$  and  $R_2$  are connected in parallel.



What is the combined resistance between X and Y?

- A**  $R_1 + R_2$       **B**  $\frac{R_1 R_2}{R_1 + R_2}$       **C**  $\frac{R_1 + R_2}{R_1 R_2}$       **D**  $\frac{R_1}{R_2}$

- 34** The sum of the electrical currents into a point in a circuit is equal to the sum of the currents out of the point.

Which statement is correct?

- A** This is Kirchhoff's first law, which results from the conservation of charge.  
**B** This is Kirchhoff's first law, which results from the conservation of energy.  
**C** This is Kirchhoff's second law, which results from the conservation of charge.  
**D** This is Kirchhoff's second law, which results from the conservation of energy.