

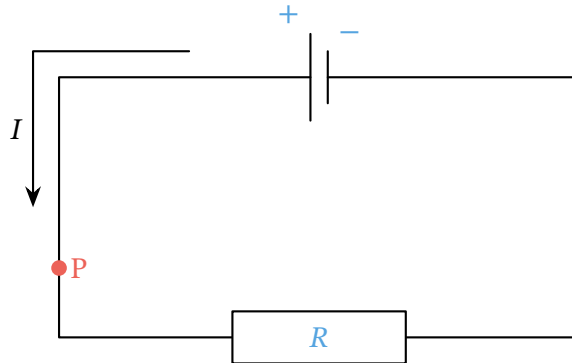
# Worksheet: Electric Current



**Q1:** The diagram shows a circuit consisting of a battery and a resistor. The current through the circuit is 50 mA. Over a period of 1.5 hours, how much charge flows past point P in the circuit?



Question Video



A 0.075 C

B 270 C

C 75 C

D 180 C

E 4.5 C

**Q2:** A laptop charger passes a current of 5.0 A through a laptop battery. Over a period of time, 45 000 C of charge is transferred to the battery. For how many hours was the laptop left to charge?



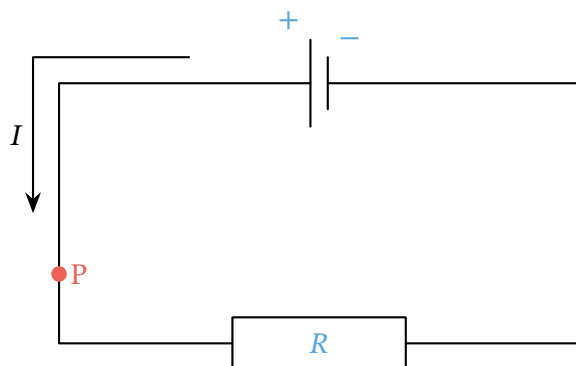
Question Video

- A 1.5 hours
- B 1 hour
- C 9 hours
- D 2.5 hours
- E 150 hours

**Q3:** The diagram shows a circuit consisting of a battery and a resistor. The current through the circuit is 2.0 A. Over a period of 45 seconds, how much charge flows past point P in the circuit?



Question Video



- A 47 C
- B 43 C
- C 90 C
- D 22 C
- E 100 C

**Q4:** Which of the following is the correct formula for the amount of charge flowing through a point in a circuit in a given time?  $Q$  represents the amount of charge,  $I$  represents the current, and  $t$  represents time.

- A  $Q = I^2t$
- B  $I = Qt$
- C  $Q = It$
- D  $Q = \frac{I}{t}$

**Q5:** Which of the following is the correct unit for electric charge?

A Ampere

B Joule

C Volt

D Coulomb

**Q6:** Which of the following is the correct unit for electric current?

A Watt

B Volt

C Ampere

D Joule

**Q7:** A rechargeable battery is left to charge for a period of time. It is charged with a current of 10 mA. After it has finished, the battery has gained 180 C of charge. For how many hours was the battery left to charge?

A 10 hours

B 1 hour

C 5 hours

D 300 hours

E 2 hours

**Q8:** Which of the following is the correct formula for the current through a point in a circuit?  $I$  represents the current,  $Q$  represents the amount of charge, and  $t$  represents time.

A  $I = \frac{t}{Q}$

B  $I = Qt$

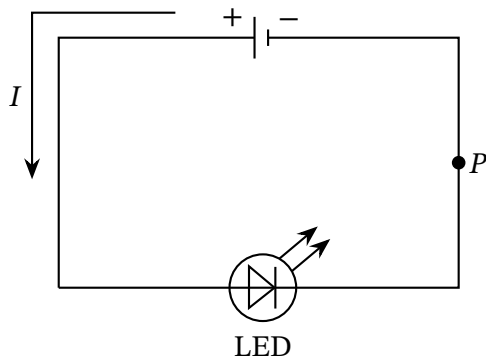
C  $I = \frac{Q}{t}$

D  $Q = It^2$

**Q9:** The diagram shows a circuit consisting of a battery and a light-emitting diode (LED). Over a period of 25 seconds, a charge of 50 coulombs passes through point  $P$  in the circuit. What is the current in the circuit during this period?



Question Video



- A 2 A
- B 25 A
- C 75 A
- D 0.5 A
- E 1 250 A

**Q10:** How many milliamperes are there in 1 ampere?

- A 10
- B 1 000
- C 0.1
- D 1
- E 0.001