

GCSE Physics $I=Q/t$ Ramped Calculation Questions

These questions become progressively more challenging. Read each question carefully and decide whether you need to calculate current, charge or time. Remember to convert minutes into seconds where necessary.

1. A set of fairy lights transfers 20 C of charge in 10 s. Calculate the current.
2. A phone charger transfers 180 C of charge in 60 s. Calculate the current.
3. A bicycle light operates with a current of 0.4 A for 50 s. Calculate the charge transferred.
4. A gaming controller transfers 150 C of charge while charging at 0.5 A. How long does the charging take?
5. An electric toothbrush uses a current of 0.8 A for 2 minutes. Calculate the charge transferred.
6. A laptop charger transfers 7200 C of charge in 1 hour. Calculate the current.
7. A USB device transfers 900 C of charge in 15 minutes. Calculate the current.
8. An electric scooter battery transfers 54000 C of charge while charging at a current of 5 A. How long does the charging take?
9. An air fryer operates with a current of 8 A for 25 minutes. Calculate the total charge transferred.
10. An electric vehicle charger transfers 1080000 C of charge in 2 hours.
 - a) Calculate the current.
 - b) If the current were doubled, how long would the charging take?

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