Current and Voltage Questions for GCSE Physics

1. What physical quantity does the symbol **Q** represent?

2. What is the symbol used for electric current?

3. What is the unit of electric charge?

4. Write down the equation that links **current, charge and time**.

5. Write down the equation that links **voltage, energy and charge**.

6. A charge of **10 C** flows past a point in **5 s**. Calculate the current.

7. A battery supplies **60 J** of energy to **10 C** of charge. Calculate the voltage.

8. **50 C** of charge flows in **25 s**. Calculate the current.

9. **150 J** of energy is transferred to **25 C** of charge. Calculate the voltage.

10. A current of **0.5 A** flows for **40 s**. Calculate the charge transferred.

11. A current of **3 A** flows for **2 minutes**. Calculate the charge transferred.
(Remember to convert units.)

12. A device transfers **20 J** of energy to **4 C** of charge. Calculate the voltage.

13. A battery transfers **360 C** of charge in **3 minutes**. Calculate the current.

14. A charge of **24 C** flows with a current of **2 A**. Calculate the time taken.

15. A **12 V** lamp transfers **20 C** of charge. Calculate the energy transferred.

16. A device operates at **6 V** and transfers **90 J** of energy. Calculate the charge transferred.

17. A battery transfers **480 J** of energy while a current of **4 A** flows for **40 s**.
a) Calculate the charge transferred. b) Calculate the voltage of the battery.

18. A lamp transfers **180 J** of energy while operating at **12 V**. The current in the lamp is **0.5 A**.
Calculate: a) the charge that flows; b) the time taken.

19. A power supply delivers **600 J** of energy to a circuit in **1 minute**. The current in the circuit is **2 A**.
a) Calculate the charge transferred. b) Calculate the voltage of the power supply.

20. **30 C** of charge flows through a component connected to a **9 V** battery in **10 s**.
Calculate: a) the current; b) the energy transferred.