

Potential Difference

- 1) How much work is needed to move a $8.6 \mu\text{C}$ charge from ground point to a point whose potential is 75 V ?
- 2) How much work is needed to move a proton from a place where its potential is $+100 \text{ V}$ to a place where it is -50 V ?
- 3) How much energy is lost as an electron falls through a potential difference of 21000 V in a TV tube?
- 4) What amount of energy does a toaster use to make toast if it has 800 C of charge passing through it with a potential difference of 120 V ?
- 5) What is the potential difference across a refrigerator if 75 C of charge transfers 9000 J of energy to the compressor?
- 6) A flash of lightning transfers $1.5 \times 10^9 \text{ J}$ of electric energy through a potential difference of $5.0 \times 10^7 \text{ V}$ between a cloud and the ground. How much charge is transferred by the bolt?
- 7) If a charge of 0.30 C moves from one point to another in a conductor and, in doing so, releases 5.4 J of electric energy, what is the potential difference between the two points?
- 8) If two points in a conductor have the same potential, how much work must be done to move an electron from one plate to the other?
- 9) What is the potential difference between two points if 1 kJ of work is required to move 1 C of charge between them?
- 10) What is the energy of an electron accelerated through a potential difference of 1.0 MV ?
- 11) What is the potential difference between two points when a charge of 80 C has 400 J of energy supplied to it as it moves between the points?