K Education Centre

GCSE Physics Energy P5

Electricity in the home

Assignment Questions

P5: Electricity in the home

Q1: What's the difference between direct current and alternating current?

Q2: Explain why brass is better than copper for pins of three pin plug.

Q3: Why cables joining the wall sockets in a house need to be thicker than the cables joining the light fittings.

Q4: Describe the difference between two core and three core cables.

Q5: Calculate the power supplied to each of the following devices .

   a) A 12 V , 6 A light bulb
   b) A 230 V , 10 A heater

Q6 : What will be the feasible fuse rating for a 230 V , 800 W microwave oven.

Q7: A 6.0 kW electric oven is connected to the a fuse box by a cable of resistance 0.30 Ω. When the cooker is switched full power a current of 25 A passes through it. Calculate the power wasted in the cable because of the heating effect of current.

Q8: Calculate the energy transfer for :

   a) For a charge flow of 20 C when the potential difference is 12 V.
   b) For a current of 5 A that passes through a resistor for 30 s , when the potential difference is 6 Volts.

Q9: Calculate how much energy is transferred when 2 Kilowatts electric kettle is used six times for 8 minutes each time.

Q10: Calculate how long it would take for a 1500 W electric kettle to use 40 MJ of energy.

Q11: A 12 V, 36 W bulb is connected to a 12 V supply. Calculate:

   a) The current through the bulb.
   b) The charge flow through the bulb in 3 minutes.
   c) Calculate the energy delivered to the bulb by each coulomb of charge that passes through it.