Y11 PHYSICS WORKSHEET 7

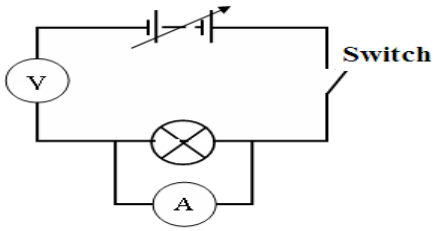
7. (a) A charge of 400μC passes a point in a conductor in 5 milliseconds.
Find the current in the conductor.

(b) State at least two units for electrical power.

(c) A 20 W fluorescent desk lamp is being used for 5 hours each night for 10 weeks.

(i) How much electrical energy (kWh) is used?
(ii) Calculate the electrical bill for using the above at $0.34 per kWh with 9% VAT?

(d) To measure the resistance of a light bulb, a group of Physics students set up the circuit shown below.

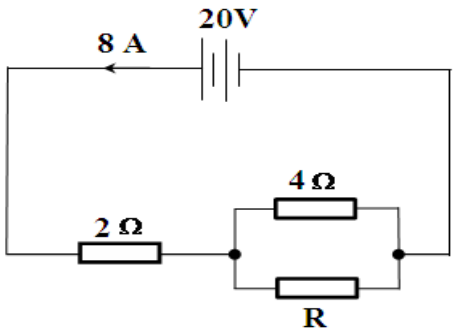


(i) Identify **one** error with the above set-up.

(ii) After correcting their mistakes, the students switched on the circuit and obtained the following readings:
Voltmeter reading = 0.3 V
Ammeter reading = 0.2 A

Find the resistance of the light bulb.

(e) Use information given below in the circuit diagram to answer the questions.



Given that 8A current leaves the battery, find

(i) the total resistance of the circuit.
(ii) the potential difference across the 2Ω resistor.
(iii) the potential difference across the 4Ω resistor.
(iv) the current through the 4Ω resistor.
(v) the current through the resistor R.
(vi) the value of the resistor R.