Electricity →

Q1) Calculate the charge aqquired by an object when it uses 10^{24} $e^{\ominus}$.

Q2) How many electrons constitute i). 1C of charge
                                         ii) 5C of charge

Q3) Calculate the current that flows through an object when 20 C of charge flows through it in 5 secs.

Q4) How many electrons would be required for 100 A of current to flow in 2 secs.

Q5) Calculate the work done to carry 10 C of charge across 20 volt.

Q6) Calculate p.d. across the conductor which requires 100 joules of work to carry half C of charge

Q7) Calculate resistance of conductor which allows 3A of current to flow across 6 volts.

Q8) How many bulbs each of 4840 Ω should be

connected in parallel across 220 volt so that a current of 5 A flows through circuit.

Q9) A household has 4 fans each of 50 watt and runs for 4 hours daily. Two AC's each of 1000 watt running for 2 hrs daily. 10 lights each of 20 watt running for five hours daily. Calculate the electricity bill for the month of January of one unit was ₹ 2·20

Q10) Calculate heat energy produced when three resistors of 20 Ω each connected across series 220 volt for five hours.

Q11) Two bulbs one rated 100 watt, 110 volt and the other 50 watt, 220 volt connected across 220 volt. Calculate the power consumed by the circuit if they are connected in parallel.

Q12) Resistance of wire is 100 ohm. Calculate its new resistance in each following cases →

a) length is doubled by stretching it
b) length of wire is doubled by adding another additional wire to it.
c) length is halved.
d) area is halved.

Q13) What would be the new specific resistance of a wire of resistance 20 ohm which is melted and moulded into new wire of half the area.

Q14) If 12A of current flows across 36 volts battery. What would be the amount of current flow through the same resistor across 54 volts.

Q15) Calculate the resistance of conductor of length 3m, area of cross-section 0·5 m². A resitivity of the material if 1·6 X 10⁻¹² ohm metre.

Q16) The specific resistance of alluminium is 5·6 X 10⁻¹² Ωm. Find the length of 10 Ω alluminium wire of radius 0·3 cm.

Q17) The resistance of a wire is 100 Ω it is bent to form a circle of radius 5cm. Calculate equivalent resistance across its diameter.

Q18) A wire of resistance of 25 Ω is ~~cut~~ cut into five equal parts and these parts are joint in parallel. Calculate the equivalent resistance across the circuit.

Q19). Resistance of wire is 100 Ω what would be its new resistance if its length is half by cutting it.