

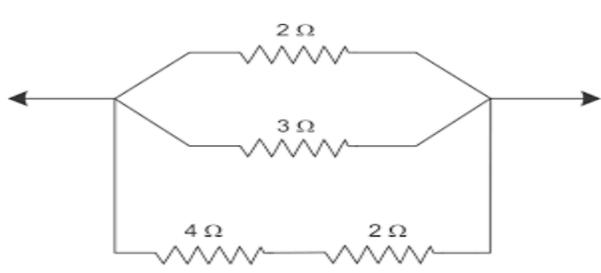


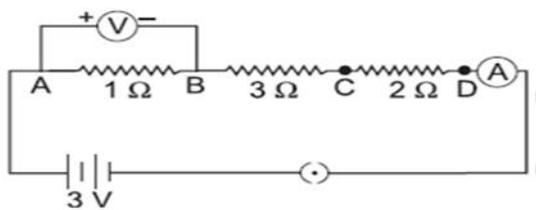
INDIAN SCHOOL DARSAIT
Class X -Physics
Topic: Electricity



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Date :

Name of the student :
Class : X

	<u>One mark questions</u>
1.	Calculate the number of electrons constituting three coulomb of charge. (Charge of 1 electron= 1.6×10^{-19} C)
2.	A nichrome wire of resistivity $100 \times 10^{-6} \Omega \text{m}$ and copper wire of resistivity $1.62 \times 10^{-8} \Omega \text{m}$ of same length and same area of cross section are connected in series ,current is passed through them, why does the nichrome wire gets heated first?
3.	Define 1volt.
4.	Three equal resistances are connected in series then in parallel. What will be the ratio of their Resistances?
	<u>Two mark questions</u>
5.	Calculate the effective resistance between the poles A and B in the following arrangement. 
6.	Draw a schematic diagram for a circuit in which three resistors R_1 , R_2 and R_3 , a plug key under closed condition, an ammeter are joined in series with a 5V battery. Also a voltmeter is connected to measure the potential difference across the resistor R_1 .
7.	Derive an equation for electrical energy consumed in a device in terms of V, R and t, where V is the potential difference applied to it, R is the resistance and t is the time for which the current flows.
8.	If an electric heater consumes electricity at the rate of 500W and the potential difference between the two terminals of electric circuit is 250V, calculate the electric current and resistance through the circuit.
9.	How would the reading of (V) change if it is connected between the points B and C in the following diagram.



10.	Explain the working of electric fuse.
11.	<p>Give reason:</p> <p>a) An ammeter burns out when connected in parallel.</p> <p>b) A volt meter always connected in parallel across the points at which the potential difference is to be measured.</p>
	<u>Three mark question</u>
12.	<p>a) A torch bulb is rated 2.5V and 750mA. Calculate its (i) power (ii) resistance and (iii) energy consumed if this bulb is lighted for 4 hours.</p> <p>(b) Two identical resistors each of 2Ω are connected in a torch to a battery of 12V ; (i) in series and (ii) in parallel</p> <p>Calculate the ratio of power consumed in two cases.</p>
13.	<p>i) Electrical resistivity of some substances at 20°C are given below:</p> <p>Silver = $1.60 \times 10^{-8} \Omega \text{ m}$ Mercury = $94.0 \times 10^{-8} \Omega \text{ m}$ Ebonite = $1015 \times 10^{17} \Omega \text{ m}$</p> <p>(a) Which among the above three is a better conductor? (b) Which among the above three can be used for making electrical plugs? Why?</p>
14.	In a household, an electric bulb of 100W is used for 10 hours and an electric heater of 1000W is used for 2 hours. Calculate the cost of using bulb and the heater for 30 days. Take the cost of one unit of electrical energy as 12 rupees.
15.	State and explain Ohm's law with help of neat diagram. List the factors which affect the value of resistance in a circuit.
16.	An electric iron is connected to the mains power supply of 220V. when the electric iron is adjusted at 'minimum heating' it consumes a power of 360 W but at ' maximum heating' it takes a power of 840W. Calculate the current and resistance in each case.
17.	<p>When a current of 4A passes through a certain resistor for 10 minutes $2.88 \times 10^4 \text{ J}$ of heat is produced. Calculate:</p> <p>a) the power of the resistor b) the voltage across the resistor</p>

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