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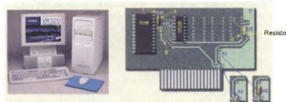
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so many fake sites. this is the first one which worked! Many thanks

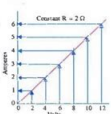
Chapter : 1 : Circuit Fundamentals p 5



Resistors are found on circuit-boards of computers.

1.6. Linear Resistor

A linear resistor is one whose value remains constant i.e., it does not depend on applied voltage. The V-I characteristic of such a resistor is a straight line similar to the one shown in Fig. 1.10. Obviously, V and I are directly proportional.



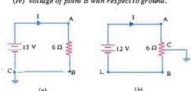
Voltage (V)	Current (I) (mA)
0	0
2	1
4	2
6	3
8	4
10	5
12	6

1.7. Non-linear Resistor

It is that resistor in which V and I are not directly proportional to each other. If applied voltage is doubled, the resultant current is not exactly double of its previous value. Such a resistor has non-linear V-I characteristic. An example is tungsten filament in an electric bulb. Here, R increases with more current as the filament becomes hotter. Increasing the applied voltage does produce more current but it does not increase in the same proportion as V.

Example 1.1. In the circuit of Fig. 1.11 (a), find

- circuit current, I
- voltage of point A with respect to ground
- voltage of point B with respect to ground
- voltage of point B with respect to point A



Solution. (i) As per Ohm's law,
 $I = V/R = 12/6 = 2 \text{ A}$

(ii) Voltage drop across 6 Ω resistor
 $= IR = 2 \times 6 = 12 \text{ V}$

Since lower end of the resistor is grounded via point B, potential of point A w.r.t. ground is +12 V.

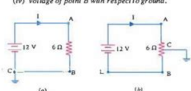


Fig. 1.11

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