Chapter 28 Circuits

28-3 Calculating the Current in a Single-Loop Circuit

Question 739 0.37-56%

Kirchoffs two laws for electric circuits can be derived by using certain conservation laws. On which conservation laws do Kirchoffs laws depend?

(a) charge ; mass.
(b) current ; charge.
(c) charge ; energy.
(d) current ; angular momentum.
(e) mass; energy.

28-03

28-4 Other Single-Loop Circuits

28-04

Question 740

A battery is connected to a resistor, and a current of 4.0 A exists in the circuit. When an additional 15-Ohm resistor is added to the circuit in series with the original resistor, the current drops to 1.0 A. What is the emf of the battery?

(a) 15 Volts.
(b) 25 Volts.
(c) 50 Volts.
(d) 20 Volts.
(e) 30 Volts.

28-04

Question 741 0.48-37%

Three resistors, of resistance 2.0 Ohm, 4.0 Ohm and 6.0 Ohm, are connected to a 24 Volt battery as shown in figure (2). The power dissipated in the 2.0 Ohm resistor is:

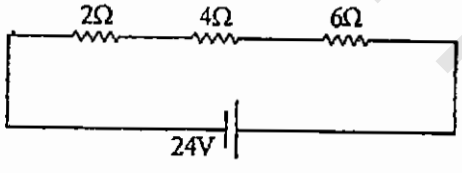

Figure (2)

(a) 8 W.
(b) 4 W.
(c) 24 W.
(d) 12 W.
(e) 48 W.

28-04

Question 742 0.24-51%

Two light bulbs, of 25 Watts and 100 Watts, are connected in series to 110 Volts source. Which of the following statements is correct:

(a) The current in the 100 Watts bulb is greater than that in the 25 Watts bulb.
(b) The current in the 100 Watts bulb is less than that in the 25 Watts bulb.
(c) The current in the 100 Watts bulb is the same as that in the 25 Watts bulb.
(d) Each bulb will have a potential difference of 55 Volts.
(e) Both bulbs will light with equal brightness.