Example 50. *Determine the voltage drop across the resistor R_1 in the circuit given below with $\mathcal{E} = 60\ V$, $R_1 = 18\ \Omega$, $R_2 = 10\ \Omega$.*

Solution. As the resistances R_3 and R_4 are in series, their equivalent resistance

$$= 5 + 10 = 15\ \Omega.$$

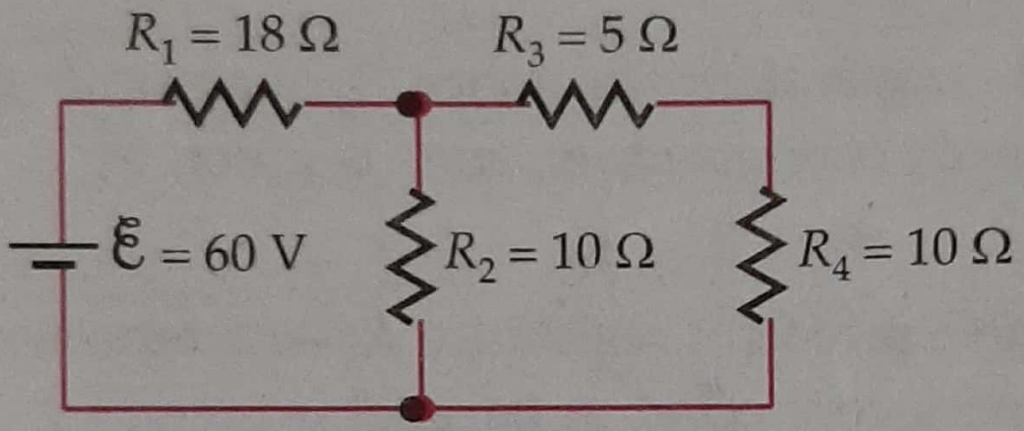


Fig. 3.35

Example 61. *Find the effective resistance of the network shown in Fig. 3.41 between the points A and B when (i) the switch S is open (ii) switch S is closed.*

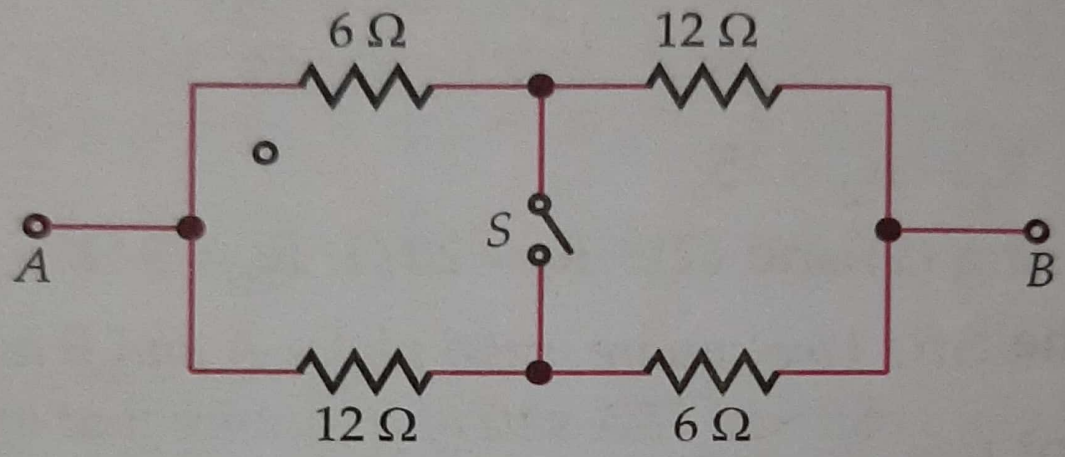
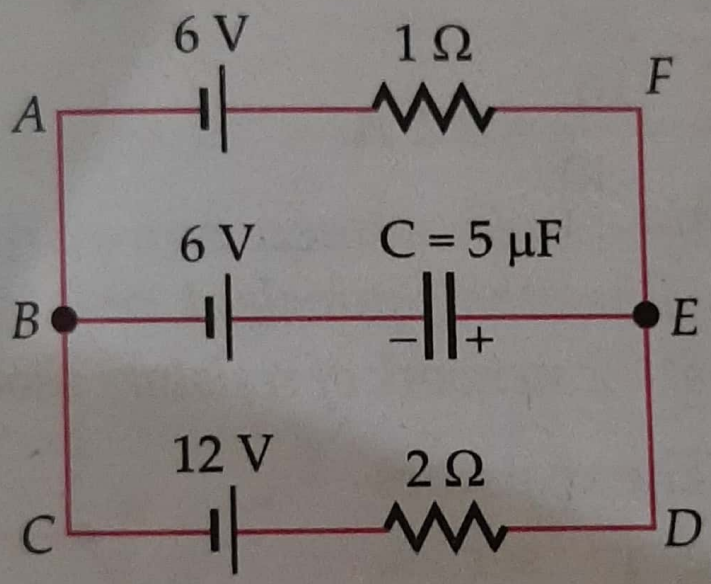
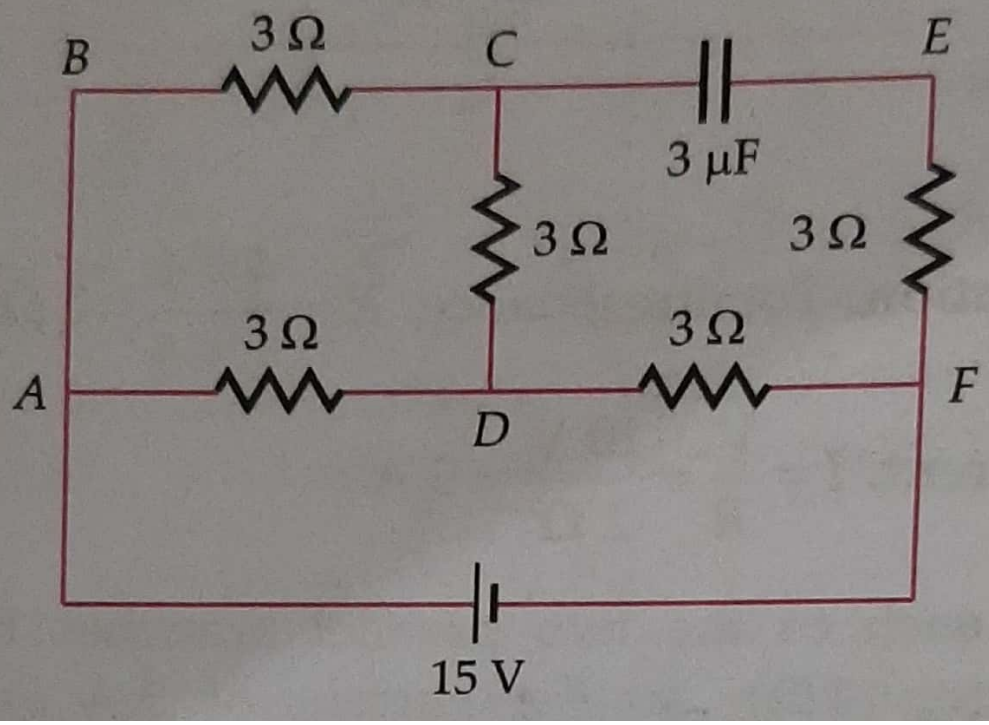


Fig. 3.41

Example 63. *In the given circuit, with steady current, calculate the potential difference across the capacitor and the charge stored in it.* [CBSE F 17]



Example 64. *In the circuit shown in Fig. 3.45, find the potential difference across the capacitor.*



Example 93. *In the two electric circuits shown in Fig. 3.117, determine the readings of ideal ammeter (A) and the ideal voltmeter (V).* [CBSE D 15C]

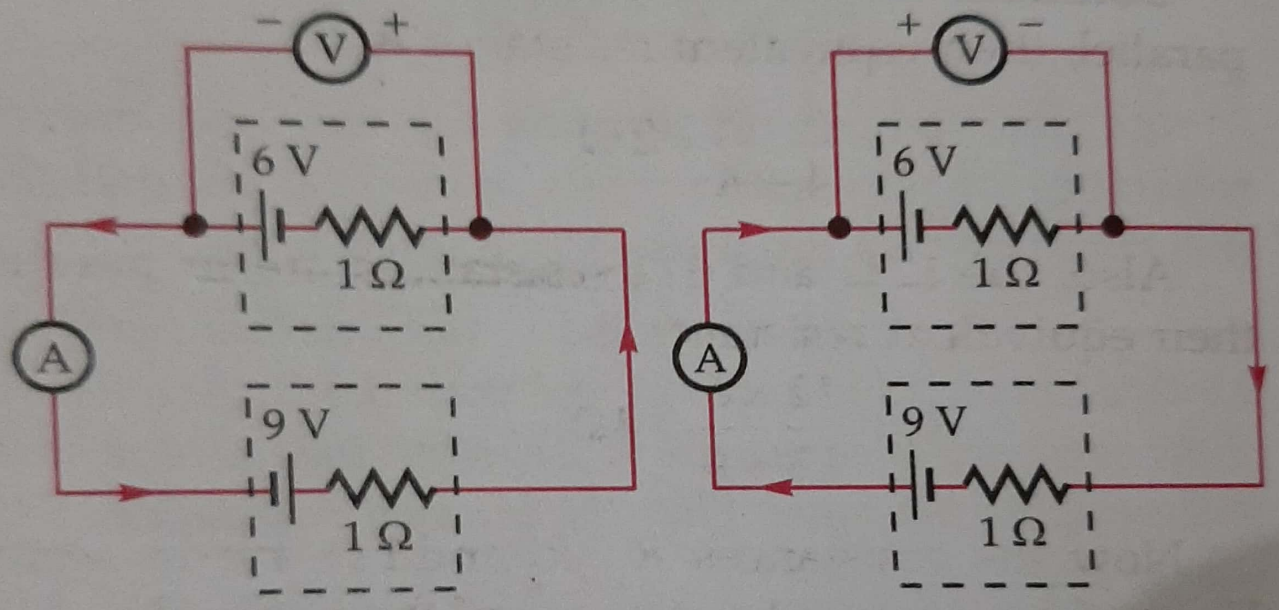


Fig. 3.117 (a) (b)

d 6 Ω

Example 91. *In the circuit diagram given in Fig. 3.115, the cells E_1 and E_2 have emfs 4 V and 8 V and internal resistances 0.5 Ω and 1.0 Ω respectively. Calculate the current in each resistance.*

[CBSE D 15C]

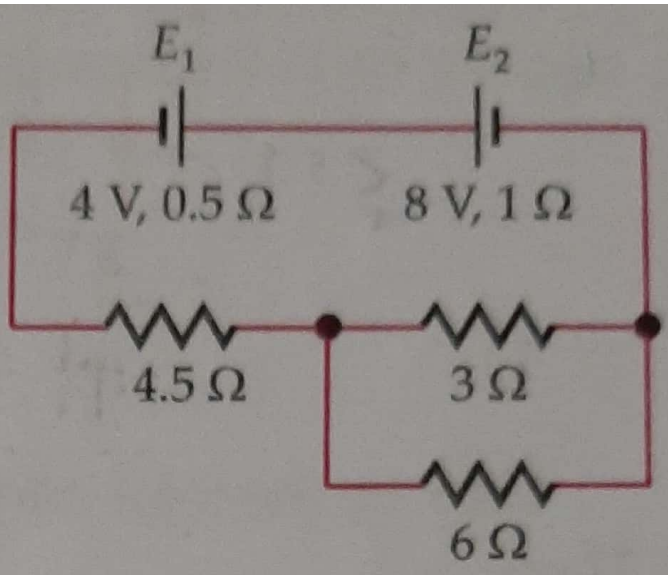


Fig. 3.115

Example 71. *Find the equivalent resistance of the circuit shown in Fig. 3.58 between the points A and B. Each resistor has a resistance r.*

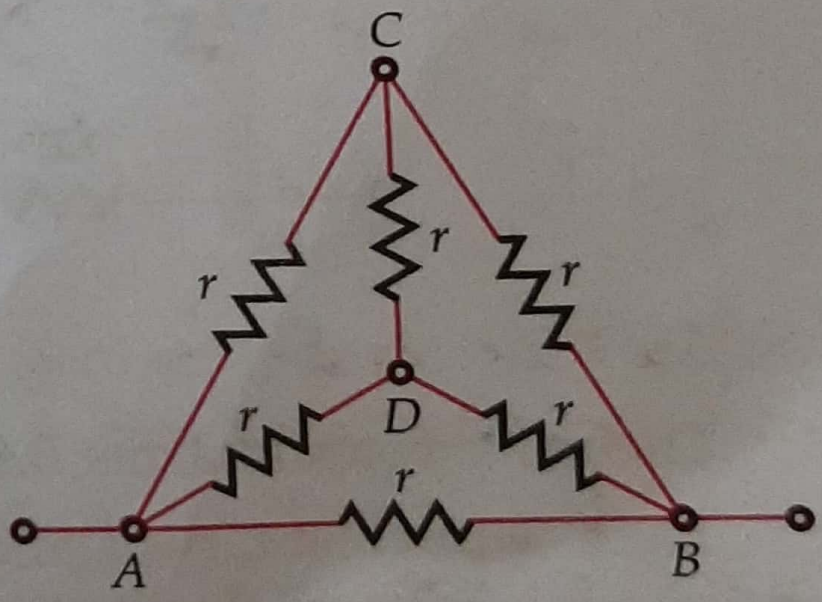


Fig. 3.58