Question 3.

Four batteries of EMF $E_1 = 4\,\text{V}$, $E_2 = 8\,\text{V}$, $E_3 = 12\,\text{V}$, and $E_4 = 16\,\text{V}$, four capacitors with the same capacitance $\text{C}_1 = C_2 = C_3 = C_4 = 1\,\mu\text{F}$, and four equivalent resistors are connected in the circuit shown in Fig. 3. The internal resistance of the batteries is negligible.

- Calculate the total energy W accumulated on the capacitors when a steady state of the system is established.
- The points H and B are short connected. Find the charge on the capacitor C_2 in the new steady state.

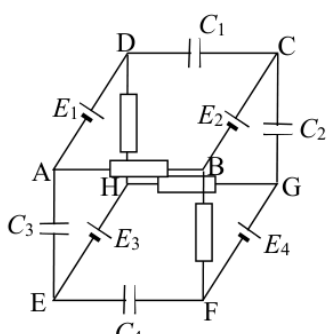


Fig. 3