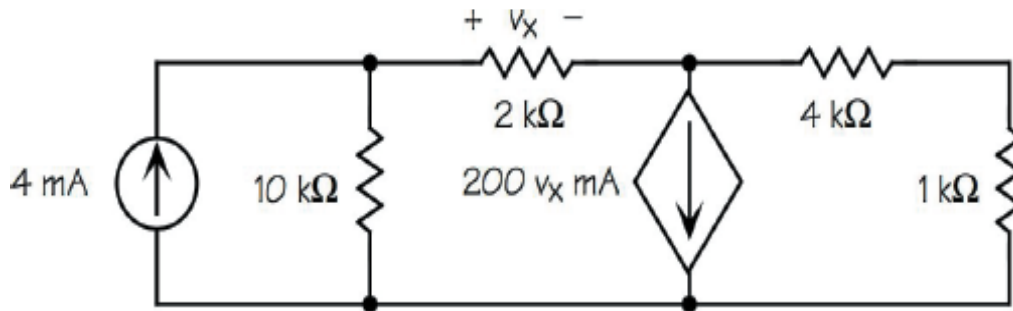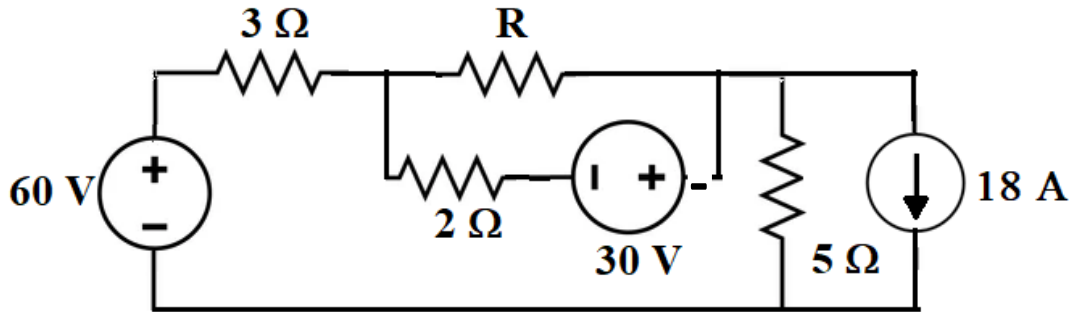(i) Attempt all parts of a question consecutively.

(ii) Full credit will only be given if the Solution is neat, and showing all the required steps.
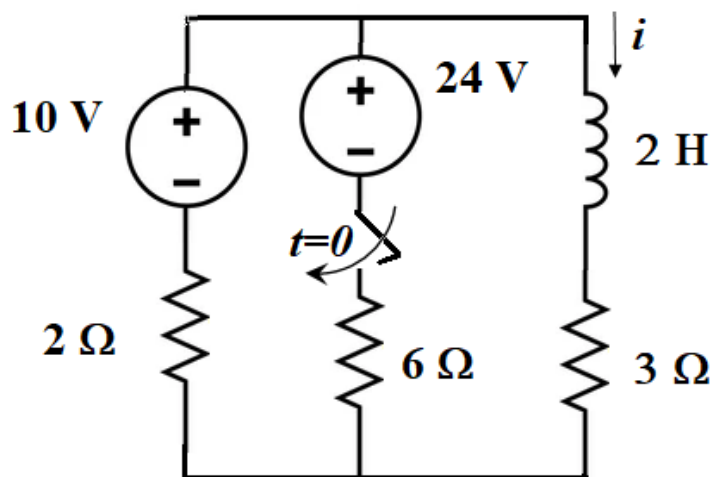
Q1 (a) For the given circuit, find out all the mesh currents by mesh analysis and power delivered by dependent source. **[15]**


**(b)** Find the maximum power that can be delivered to the resistor R in the circuit. **[15]**

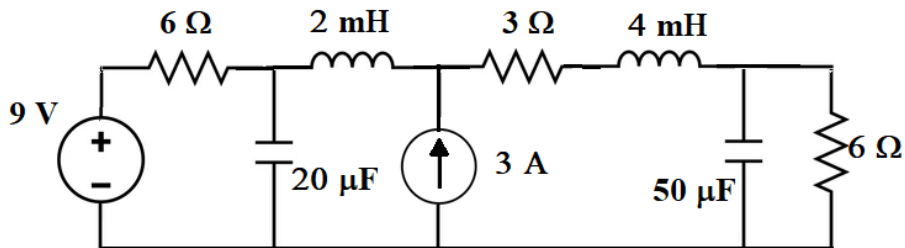**Q2 (a)** Obtain the inductor current for both $t < 0$ and $t > 0$ for the given circuit. **[15]**

(b) For the circuit given below i) calculate i(0) and v(0); ii) Find the differential equation and roots of the characteristic equation; iii) identify the type of the natural response of the circuit; iv) Find i(t) and v(t) for t > 0. **[25]**
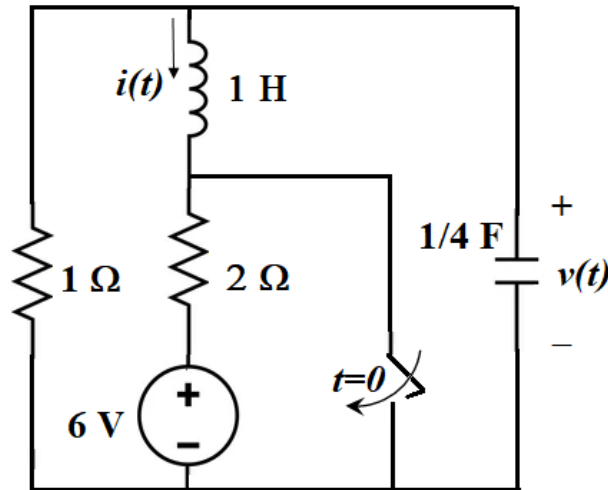
Q3 (a) For the circuit shown below, using Nodal analysis, find the values of V_1 and V_2. Express the answer in polar form. **[20]**
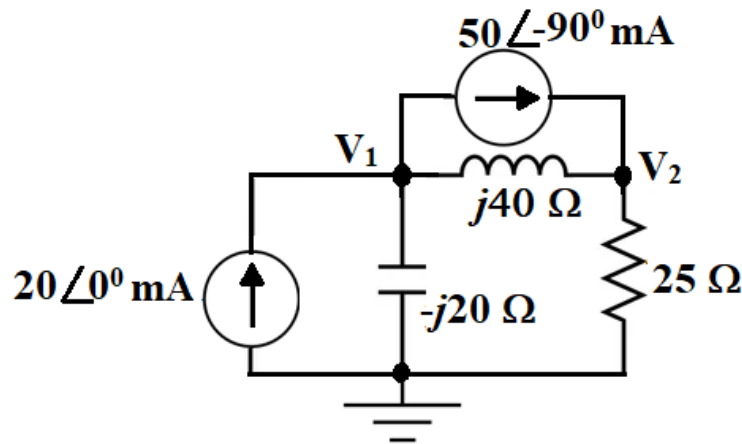
(b) Find the total energy stored in the circuit given below. **[15]**

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