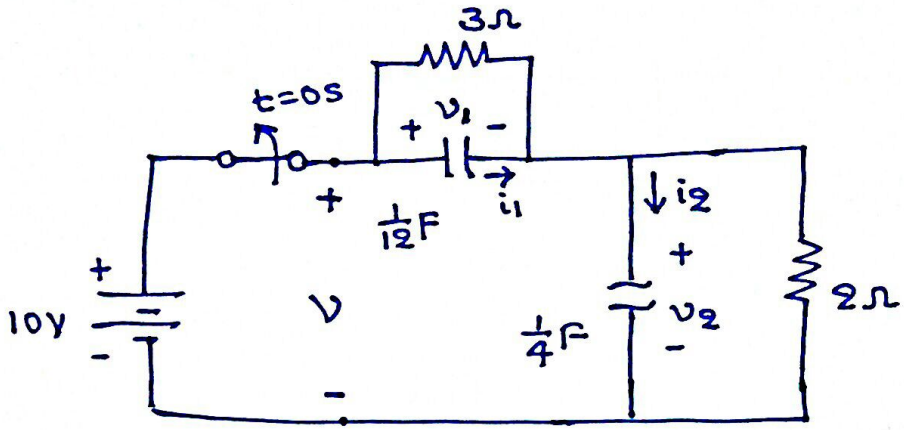
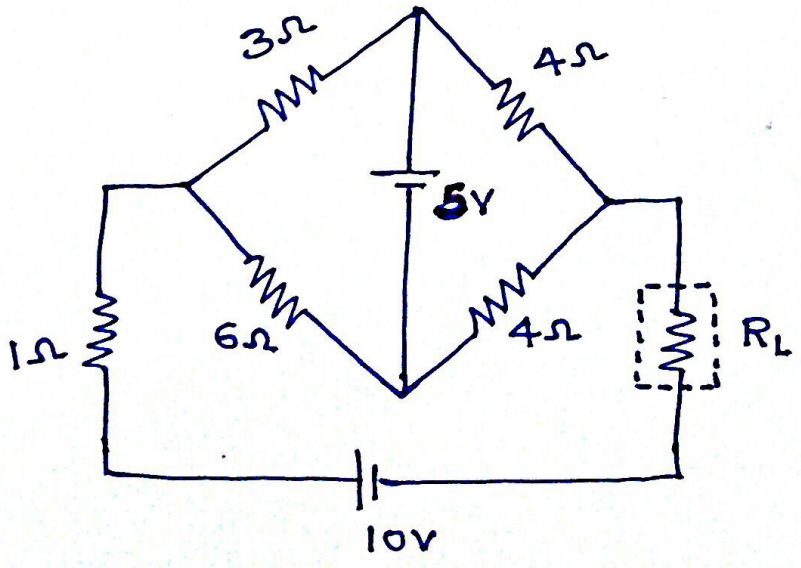
1.Q) For the circuit shown below, the switch opens at time t=0s. Find $v_1(t)$, $v_2(t)$, $i_1(t)$, $i_2(t)$ and $v(t)$ for all time.



2.Q) For the circuit shown in the below figure

1) Find the R_L for maximum power dissipation

2) Calculate the maximum power dissipated in R_L.



3.Q.4) For the circuit shown in Figure below, suppose that v(t) is described by the function given in Fig.(b). Sketch (a). i(t), (b) $w_C(t)$, (c) $p_R(t)$, (d) $v_R(t)$ and (e) $v_S(t)$

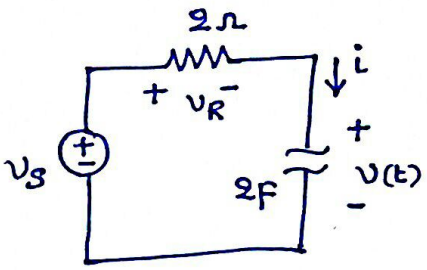


Fig.(a)

$$v(t) = \begin{cases} 0\ V & \text{for } t \le 0s \\ t\ V & \text{for } 0 < t \le 1s \\ 1\ V & \text{for } t > 1s \end{cases}$$

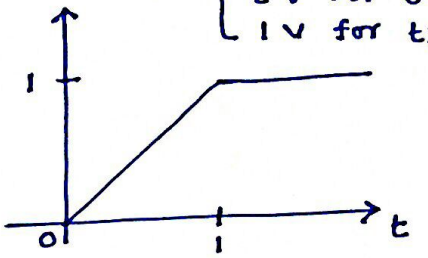
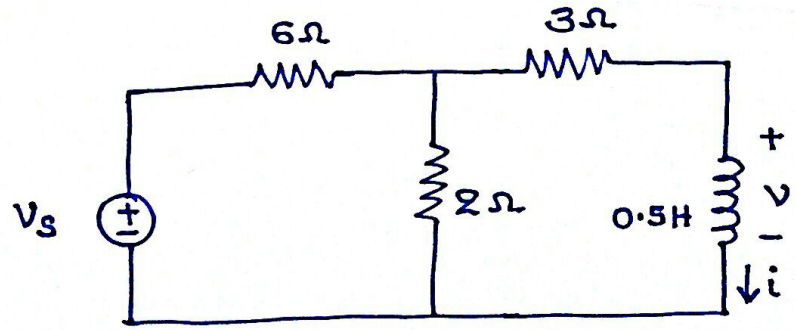


Fig.(b)

4.Q) For the circuit shown below, suppose that $v_S(t) = 18\ V$ for $t < 0\ s$ and $v_S(t) = 0\ V$ for $t \ge 0s$. Write a differential equation in i(t) for $t \ge 0s$. Find i(t) and v(t) for all time and sketch these functions.

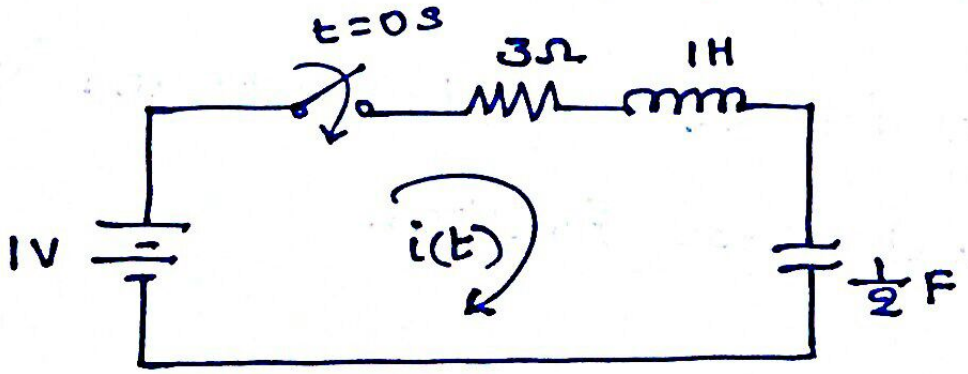


5.Q) For the circuit shown in the below figure, the switch is closed at $t = 0^+$ sec, ~~Find~~

(i) ~~i(t)~~ Find i(t)

(ii) plot i(t)

(iii) Comment on the circuit response.



(iv) Find out the maximum voltage across the capacitor if R=1ohm