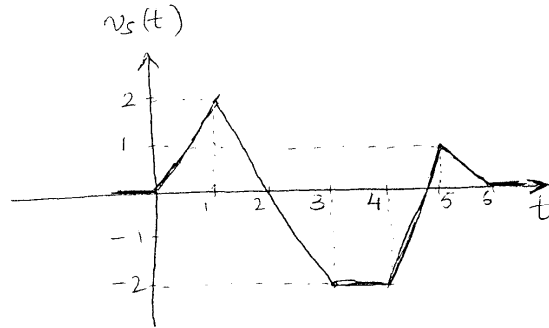
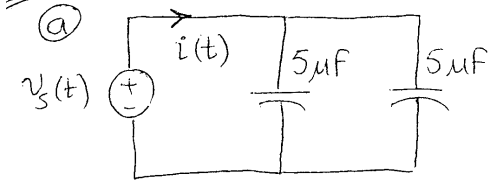


EE 204 Fundamentals of Electric Circuits Quiz 5 Solution (Sample Quiz)

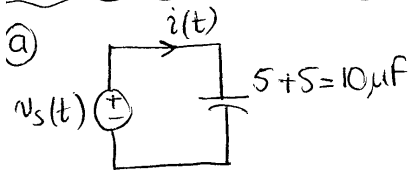
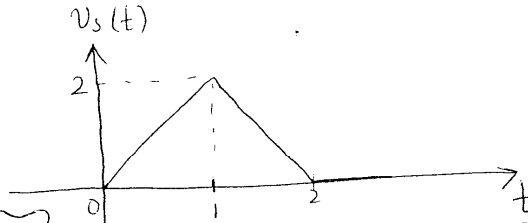
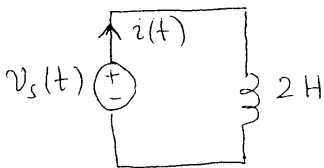
ID# KEY Quiz

Section# _____

Q Find $i(t)$.



(b) What is the value of current in inductor at $t = 0$ sec, $t = 1$ sec, $t = 2$ sec, $t = 4$ sec.



(i) For $t < 0$; $i(t) = 0$
 (ii) For $0 < t < 1$
 $i(t) = C \frac{dv}{dt} = 10\mu \times (10\mu)(2) = 20\mu$

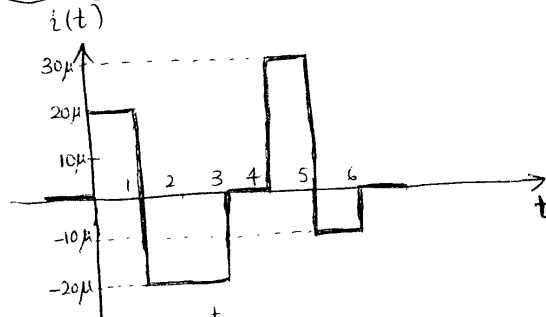
(iii) For $1 < t < 3$
 $i(t) = (10\mu)(-2) = -20\mu$

(iv) For $3 < t < 4$; $i(t) = 0$

(v) For $4 < t < 5$:
 $i(t) = (10\mu)(3) = 30\mu$

(vi) For $5 < t < 6$
 $i(t) = (10\mu)(-1) = -10\mu$

(vii) For $t > 6$; $i(t) = 0$



(b) $i = \frac{1}{L} \int_{-\infty}^t v_L dt = \frac{\text{Area}}{L}$

At $t=0$ $i = \frac{0}{2} = 0$

At $t=1$ $i = \frac{\frac{1}{2} \times 1 \times 2}{2} = \frac{1}{2}$

At $t=2$ $i = \frac{(\frac{1}{2} \times 1 \times 2) + (\frac{1}{2} \times 1 \times 2)}{2} = 1$

At $t=4$ $i = 1$

