

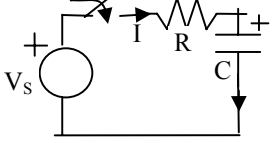
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Adı Soyadı:										
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LAPLAS DONUSUMU ILE COZUN

1.a) Sekildeki devrede Anahtar kapatildiktan sonra devre

denklemleri $\frac{dV_c}{dt} + \frac{1}{RC} V_c = \frac{1}{RC} V_s$ seklinde

yazilabilecegini gosterin. R, C, degerleri tabloda verilmistir. (Cozum verilmistir)



b) $V_c(0)=A$ Volt, $V_s=0$ Volt icin $V_c(t)$ yi hesaplayin ve cizin.

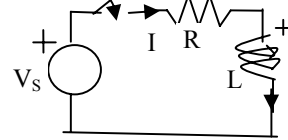
c) $I=C \frac{dV_c}{dt}$ tanim bagintisini kullanarak $I(t)$ yi

hesaplayin ve cizin.

d) $V_c(0)=D$ Volt, $V_s=P$ Volt icin $V_c(t)$ yi hesaplayin ve cizin.

e) $V_c(0)=E$ Volt, $V_s=P$ Volt icin $V_c(t)$ yi hesaplayin ve cizin.

2.a) Sekildeki devrede Anahtar kapatildiktan sonra devre denklemleri $\frac{dI_L}{dt} + \frac{R}{L} I_L = \frac{1}{L} V_s$ seklinde yazilabilecegini gosterin. R, L, degerleri tabloda verilmistir.



b) $I_L(0)=A$ Amper, $V_s=0$ Volt icin $I_L(t)$ yi hesaplayin ve cizin.

c) $V_L=L \frac{dI_L}{dt}$ tanim bagintisini kullanarak $V_L(t)$ yi

hesaplayin ve cizin.

d) $I_L(0)=D$ Amper, $V_s=P$ Volt icin $I_L(t)$ yi hesaplayin ve cizin.

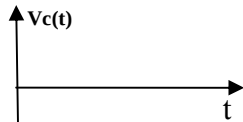
e) $I_L(0)=E$ Amper, $V_s=P$ Volt icin $I_L(t)$ yi hesaplayin ve cizin.

1.a) $-V_s + RI + V_c = 0$
 $-V_s + RC \frac{dV_c}{dt} + V_c = 0$
 $\frac{dV_c}{dt} + \frac{1}{RC} V_c = \frac{1}{RC} V_s$

2.a) $-V_s + RI + V_L = 0$
 $-V_s + RI + L \frac{dI_L}{dt} = 0$
 $\frac{dI_L}{dt} + \frac{R}{L} I_L = \frac{1}{L} V_s$

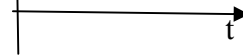
1.b, 1.c)

$V_c(t)=$



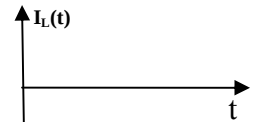
$I_L(t)=$

$I_c(t)=$



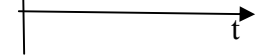
2.b, 2.c)

$I_L(t)=$



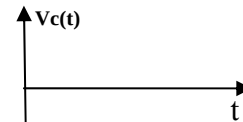
$V_L(t)=$

$V_L(t)=$



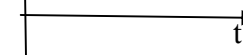
1.d, 1.e)

$V_c(t)=$



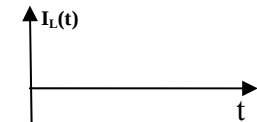
$V_c(t)=$

$V_c(t)=$



2.d, 2.e)

$I_L(t)=$



$I_L(t)=$

$I_L(t)=$

