

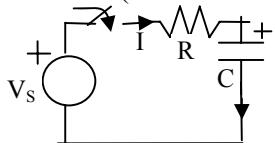
Diff

Ödev No 8

Adı Soyadı:						
Öğrenci No:			<b>0</b>	<b>5</b>	<b>0</b>	
	0	0		0	0	0
	1	1		1	1	1
		2		2	2	2
		3		3	3	3
		4		4	4	4
		5		5	5	5
		6		6	6	6
		7		7	7	7
		8		8	8	8
		9		9	9	9

### **HOMOJEN+OZEL COZUM Metodu ile cozun**

1.a) Sekildeki devrede Anahtar kapatildikten sonra devre denklemi  $\frac{dVc}{dt} + \frac{1}{RC} Vc = \frac{1}{RC} Vs$  seklinde yazilabilecegini gosterin. R, C, degerleri tabloda verilmistir. (Cozum verilmistir)



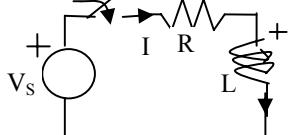
b)  $V_c(0=A$  Volt,  $V_s=0$  Volt icin  $V_c(t)$  yi hesaplayin ve cizin.

c)  $I = C \frac{dVc}{dt}$  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 kapatildikten sonra devre denklemi  $\frac{dI_L}{dt} + \frac{R}{L} I_L = \frac{1}{L} V_s$  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)  $V_L = L \frac{dI_L}{dt}$  tanım bagintisini kullanarak  $V_L(t)$  yi

d)  $I_L(0) = D$  Amper. Vs = P Volt için  $I_L(t)$  yi hesaplayın.

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

$$1.a) -Vs + RI + Vc = 0$$

$$-Vs + RC \frac{dVc}{dt} + Vc = 0$$

$$\frac{dVc}{dt} + \frac{1}{RC} Vc = \frac{1}{RC} Vs$$

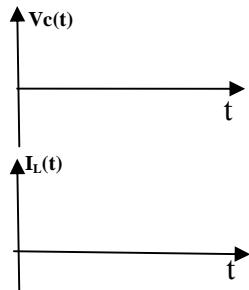
$$2.a) -Vs + RI + V_L = 0$$

$$-Vs + RI + L \frac{dI_L}{dt} = 0$$

$$\frac{dI_L}{dt} + \frac{R}{L} I_L = \frac{1}{L} Vs$$

1.b, 1.c)

$$V_C(t) =$$



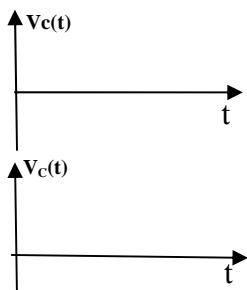
$$I_c(t) =$$

2.b, 2.c)

The figure consists of two vertically aligned graphs sharing a common horizontal axis labeled  $t$ .  
The top graph shows a horizontal line at a positive y-value, with an upward-pointing arrowhead and the label  $I_L(t)$  to its left.  
The bottom graph shows a horizontal line at a negative y-value, with a downward-pointing arrowhead and the label  $V_L(t)$  to its left.

1.d, 1.e)

$$V_C(t) =$$



$$V_c(t) =$$

2.d, 2.e)

$$I_L(t) =$$

