***Electrical Engineering Department***

***1st year of Communication***

***Electric circuits 2 (2017/2018)***

***Sheet (7)... Transient Analysis(P.2)***

1. *In the RC circuit shown in the figure the switch is closed on position 1 at t=0 and after 1 TC is moved to position 2. Find the complete current transient.*



1. *In the RC circuit shown in the figure the capacitor has initial charge qo = 25 micro coulomb with polarity shown in the diagram. The sinusoidal voltage v = 100 sin (1000t + Ø) applied at a time when Ø=30o. obtain the total current*



1. *A series RLC circuit with R = 5 ohms, L = 0.1h and C = 500 μf has a constant voltage V =10 volts applied at t = 0. Find the current transient .*
2. *A series RC circuit with R = 10 ohms, C = 4μf has an initial charge qo=800x10-6 coulomb on the capacitor at the time the switch is closed . applying a constant voltage V =100 volts . using Laplace transform method*
3. *Find the resulting current if the charge is of the same polarity as that deposited by the source.*
4. *Find the resulting current if the charge is of the opposite polarity as that deposited by the source.*
5. *A series RL circuit with R = 10 ohms, L= 0.2h has a constant voltage V =50 volts applied at t=0. Find the resulting current using Laplace transform method.*

