rechnung_signalzeitverlauf_umkehrintegrator

Student Group

First Name	Surname	Matrikel Nr.

Table of Contents

$I.\quad$ At the point t_1

$U_{\rm O}(t_1) \ \ = -\quad { 1 \over {\tau} } \quad \ \cdot \int_{t_0}^{t_1} \quad U_{\rm I} \ {\rm d}t \ + \ U_{\rm O}(t_0)$	
$\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\quad$	$\qquad\qquad$
$U_{\rm O}(t_1) \ \ = -{ 1 \over {{5 ~\rm k\Omega} \cdot 1 ~\rm µF} }\cdot\int_{0}^{10 ~\rm ms} 1~{\rm V} \ {\rm d}t + 0 ~\rm V$	
$\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\quad$	$\qquad\qquad$
$U_{\rm O}(t_1) \ \ = - \quad { 1 \over {5 ~\rm ms} } \quad \cdot 1~{\rm V} \ \cdot \int_{0}^{10 ~\rm ms} \ {\rm d}t\quad\quad$	
$\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\quad$	$\qquad\qquad$
$U_{\rm O}(t_1) \ \ = - \quad { 1 \over {5 ~\rm ms} } \quad \cdot 1~{\rm V} \ \cdot [t]_{0}^{10 ~\rm ms} = \quad -2 ~\rm V$	
$\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\quad$	$\qquad\qquad$

$I.\quad$ At the point t_2

$U_{\rm O}(t_1) \ \ = -\quad { 1 \over {\tau} } \quad \ \cdot \int_{t_0}^{t_1} U_{\rm I} \ {\rm d}t \ + \ U_{\rm O}(t_0)$	
$\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\quad$	$\qquad\qquad$
$U_{\rm O}(t_1) \ \ = -{ 1 \over {5 ~\rm ms} } \quad \cdot (-1~{\rm V}) \ \cdot [t]_{10 ~\rm ms}^{20 ~\rm ms} + 2~\rm V = 0~\rm V$	
$\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\quad$	$\qquad\qquad$

$I.\quad$ At the point t_3

$U_{\rm O}(t_1) \ \ = -\quad { 1 \over {\tau} } \quad \ \cdot \int_{t_0}^{t_1} U_{\rm I} \ {\rm d}t \ + \ U_{\rm O}(t_0)$	
$\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\quad$	$\qquad\qquad$
$U_{\rm O}(t_1) \ \ = -{ 1 \over {5 ~\rm ms} } \quad \cdot (-2V) \ \cdot [t]_{10 ~\rm ms}^{20 ~\rm ms} + 0 ~\rm V = -2 ~\rm V$	
$\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\quad$	$\qquad\qquad$