EASTERN UNIVERSITY, SRI LANKA

THIRD EXAMINATION IN SCIENCE - 2001/2002

(APRIL 2002)

PH 301 ELECTRONICS II

Time: 01 hour.

Answer ALL Questions

1. What is meant by feed back in an electronic circuit. Discuss the advantages of the negative feedback. Derive the expression for closed loop gain A in terms of feed back fraction β and open loop gain A_0. For the following series-parallel feed back amplifier calculate

   (i) open-loop gain

   (ii) gain of feed back loop

   (iii) closed-loop gain
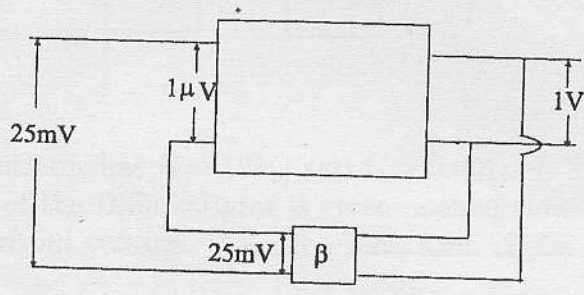
2. Briefly explain the characteristics of an ideal Operational Amplifier. Find the output voltage in terms of input voltage of the following Operational Amplifier.

   (i) Inverting

   (ii) Integrator

   (iii) Differentiator

An Integrator has $R = 10k\Omega$ and $C = 0.1\mu F$. Its input is a $1kHz$ square wave of 5 volts amplitude as shown in the figure. Determine the output voltage of the Integrator. Draw the wave form of the output.
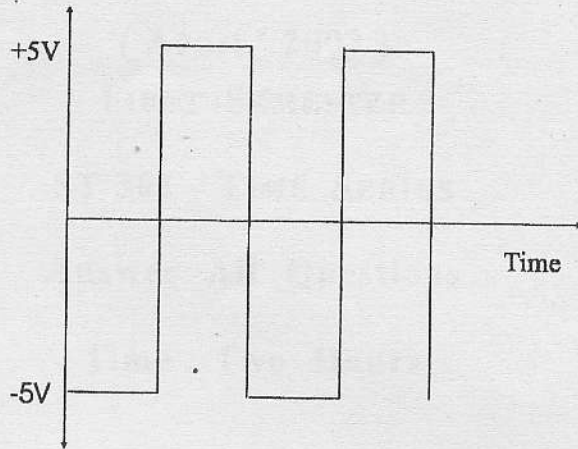
A   Differentiator has $R = 10k\Omega$ and $C = 0.001\mu F$. The input voltage wave form of the Differentiator is given in the following figure. Determine the output voltage. Draw the wave form of the output.