

For question 1,

Use the RK4 method on the moodle and change it with requirements.

First define the $V_{in}(t)$, and do the RK4 for V_{out} and t .

$H=0.01$ seems to be a good step for function to work at limited time.

The graph are listed as $RC=0.1/0.01/1$.

For question 2,

It is clearly the filter is working by cutting the input higher approximate form $\text{abs}(0.5)$ to $\text{abs}(1)$