

## Practice Questions (ECE 330)

1. Compute the response  $y(t)$  of a LTI system for an input  $x(t)$  whose impulse response is as follows

$$h(t) = e^{-t} u(t) + e^{-3t} u(t)$$

$$x(t) = e^{-t} u(t)$$

using a) Convolution in time domain

b) Fourier Transform approach

2. Consider a system defined by the following differential equation. Find  $y(t)$  for  $x(t) = \exp(-bt)u(t)$ .

$$\frac{dy}{dt} + ay = x(t)$$