EEE235F 01/04/2005

MINI TEST 2

NAME: _____

STUDENT NO: _____

1.) Consider the system defined by the input/output relation

$$y(t) = \begin{cases} x(t) & \text{when } |x(t)| \leq 5 \\ 5 & \text{when } |x(t)| > 5 \end{cases}$$

Determine whether this system is (a) causal, (b) memoryless, (c) linear, and (d) time invariant. Give reasons for your answers. (10 marks)

2.) The response of an LTI system to a step input, $x(t) = u(t)$ is $y(t) = (1 - e^{-2t})u(t)$.
What is the response to an input of $x(t) = 4u(t) - 4u(t-1)$? (5 marks)

3.) What is the result of convolving $x(t)$ with $h(t)$ below? (5 marks for (a), 10 for (b))