EEE2035 Class Test
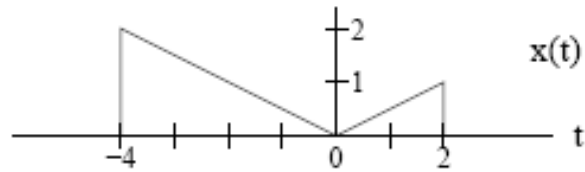# Friday 17th March

Name:

Student Number:

_____

Information

- The test is closed book.
- The test has 3 questions.
- Answer all questions.
- You have 25 minutes.
- There are 20 available marks

_____

1. Consider the signal x(t) below:

Give an expression for x(t) in the following form:

$$x(t) = x_1(t)[\ u(t-t_1)-u(t-t_2)\ ] + x_2(t)[\ u(t-t_1)-u(t-t_2)\ ] + \ \ldots\ldots$$

(4 marks)

_____

2. Sketch the following using the plot of x(t) in question 1:

(a) $y(t) = 2-2x(t)$

(b) $y(t) = x(-t + 1)$

(c) $y(t) = \dfrac{dx(t)}{dt}$ **(The generalized derivative of x(t)).**

(12 marks)

_____

3. Determine whether or not the following signal is periodic. If the signal is periodic, determine its fundamental period (hint: use trig identities and draw the graph)

$$x(t) = \cos^2(t)$$

(4 marks)

_____