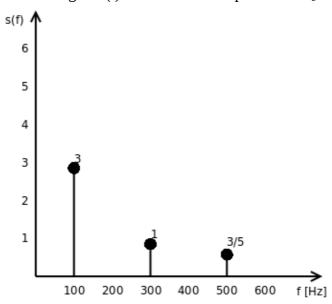# ITS323 – Quiz 2

Name: _____

ID: _____   Mark: _____ (out of 10)

Question 1 [3 marks]

    a) Write an equation for the signal *s(t)* shown in the the plot below. [2 marks]

    b) What is the absolute bandwidth of the signal? [1 mark]

Question 2 [1 mark]

Twisted pair copper cables provide lower data rate, but higher transmission distance than optical fibre.   TRUE   FALSE

Question 3 [4 marks]

An encoding scheme maps 3 bits of digital data into one signal element.

    a) In a noise-free channel with a bandwidth of 100KHz, what is the maximum theoretical data rate possible? [2 marks]

    b) Explain how the data rate can be increased, without increasing the bandwidth. [1 mark]

    c) What is a disadvantage of increasing the data rate with the approach you suggest in part (b)? [1 mark]

Question 4 [2 marks]

The path between SIIT Bangkadi and SIIT Rangsit is measured to have a power loss of 90dB. Both transmit and receive antenna's are identical, with a gain of 10dBi. Using a transmit power of 1W, what is the maximum receive power threshold for successful reception?