Universiti Malaysia PAHANG
UMP
Engineering • Technology • Creativity

Faculty of Electrical & Electronics Engineering

DIGITAL SIGNAL PROCESSING

CHAPTER 10: Inverse Discrete Fourier Transform (IDFT)

QUIZ 1 (10 Marks)

Name: _____   **Date: _____**

A continuous-time signal, $x_a(t)$ with input frequency of 10 kHz is sampled at sampling frequency of 20 kHz. The Discrete Fourier Transform (DFT) of 1000 samples of $x(n)$ is computed (N = 1000) by using the formula shown below:

$$X(k) \; = \; \sum_{n=0}^{N-1} x(n)e^{-j2\pi nk / N}$$

Determine the input signal frequency at k = 150 and k = 800.