

Time: 15 mins

Name:

Std. Number:

## Quiz 1 (Vector Spaces)

### Questions

1. Define continuous-time, discrete-time and digital signal.
2. What is the difference between the following spaces?
  - Vector space
  - Banach space
  - Hilbert Space
3. Let  $B = \{b_1, b_2, \dots, b_m\}$  be a subset of  $\mathbb{R}^n$  which are pairwise orthogonal and none of them is zero. prove that they are linearly independent.