
ECE250: Signals and Systems

Quiz 2 (15/09/2022)

Max. Marks: 10

1. (CO2) Consider the system S with following input output relationship:

$$\mathbf{y}(\mathbf{t}) = \mathbf{a}\mathbf{t}^2\mathbf{x}(\mathbf{t}) + \mathbf{b}\mathbf{t}\mathbf{x}(\mathbf{t} - 4)$$

Show whether the given system is:

- (a) Linear or non-linear (2 marks)
- (b) Static or dynamic (2 marks)
- (c) Stable or unstable (2 marks)
- (d) Causal or non-causal (2 marks)
- (e) Time-invariant or time-variant (2 marks)