

**EE2111**

**Book Reference: Signals and Systems by M. J. Roberts**

**Homework # 3 due on March 4, 2019**

**Problems 1-8 are from Chapter 3 of the book:**

- 1) 16
- 2) 17 (explain your answer, why two systems are stable and why the other two are unstable)
- 3) 20 (only part a)
- 4) 21 (a, b)
- 5) 23
- 6) 24
- 7) 25
- 8) 43
- 9) In an RC circuit where  $R = 1$  ohm and  $C = 1$  F, if following inputs are applied, what will you get at the output?
  - a.  $\delta(t)$
  - b.  $u(t)$
  - c.  $u(t-1)$
  - d.  $u(t) - u(t-1)$
- 10) If the values of  $R$  and  $C$  are changed in the RC circuit with  $R = 5$  ohm and  $C = .1$  F, how the output will be affected for the same input (a to d). Please draw the output on the same scale outputs for both set of RC values.