# ECE250: Signals and Systems
# Quiz9
# 15 November, 2023

Max Marks: 10 Time: 30 mins

**Guidelines**

- Write your name and roll no. on your answer sheet.
- Do all questions in sequence. **Institute Plagiarism Policy** is applicable.

1.[CO4] Consider an LTI system with the following information:

$$X(s) = \frac{s+2}{s-2},$$

$$x(t) = 0 \qquad t > 0,$$

$$y(t) = -\frac{2}{3}e^{2t}u(-t) + \frac{1}{3}e^{-t}u(t).$$

(a) [4 marks] Determine H(s) and its region of convergence.
(b) [3 marks] Determine h(t).
(c) [3 marks] Using the system function H(s) found above, determine output y(t) if input is:

$$x(t) = e^{-3t}u(t)$$

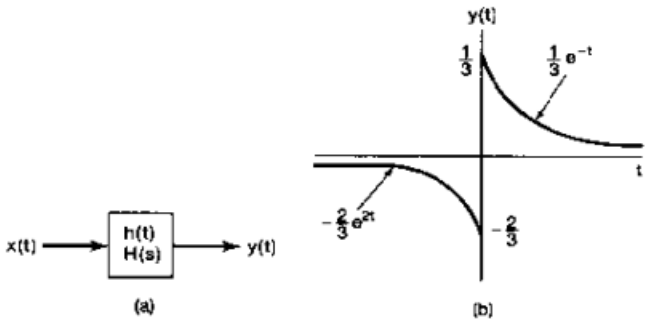


Figure 1: Problem 1