RADIO ENGINEERING I
HOME ASSIGNMENT 5/2025 HW3

Return by 5.12.2025 @20.00

Return your answer into Moodle.

Write tag HW5, your name, and student ID on all sheets you are returning.

Name _____

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1.

The S-parameters of a transistor at a frequency of 3.4 GHz are

$S_{11} = 0{,}70 \angle -155°$ $S_{21} = 3{,}0 \angle 77°$

$S_{12} = 0{,}07 \angle 32°$ $S_{22} = 0{,}66 \angle -55°$

a) Study the stability of the transistor. What does it mean if the transistor is unconditional stable?

b) Define the stability circles for the input and the output. Furthermore, draw the stability circles on the Smith chart and define the stable regions.

c) The unmatched transistor above is used to drive a load that is $Z_L = 5 + 75j$ Ohms . What may happen and why?