

**RADIO ENGINEERING I**  
**HOME ASSIGNMENT 2/2025 HW2**

Return by 14.11.2025 @20.00

**Return your answer to Moodle.****Write tag HW2, your name, and student ID on all sheets you are returning.****Name** \_\_\_\_\_**Student ID** \_\_\_\_\_

Match the load  $Z_L = (140 - j75) \Omega$  to a transmission line that has a characteristic impedance of  $50 \Omega$  at the frequency of 2.45 GHz.

- a) by using lossless lumped components.
- b) by using microstrip lines. Examine the usage of both open and short ended microstrip lines connected in parallel. The microstrip lines used have a characteristic impedance of  $50 \Omega$ .
- c) by using both the lumped component and microstrip lines.

Solve using the Smith Chart (No analytical solution). In your solution, please show all Smith Charts with **clear pictures**. Clearly explain the changes in the impedances and admittances (if there are any).