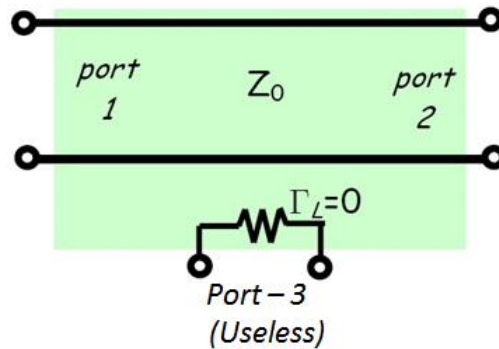
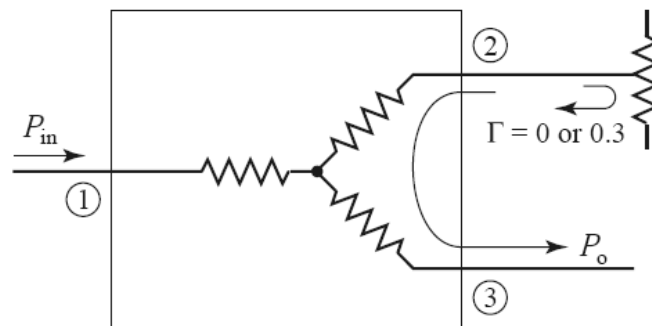


## RFCD Test – 4

1. [5 marks] List the design steps for a binomial matching network.
2. [5 marks] Using a block diagram of a directional coupler, define the parameters Coupling Coefficient (C), Directivity (D), and Isolation (I). Also, deliberate on their physical significance.
3. [10 marks] What is a circulator? What are the S-matrix and the “Signal Flow Graph” of an ideal circulator? Justify whether the network given below is a circulator.



4. [10 marks] Design a three-port resistive power divider for an equal power split and a  $100\Omega$  system impedance. If port 3 is matched, calculate the change in power at port 3 (in dB) when port 2 is connected either to a matched load or to a load having a mismatch of  $\Gamma=0.3$ .



5. [10 marks] Explain the working of the following attenuator designed using a quadrature hybrid.

