Indian Institute of Technology Kanpur
Department of Electrical Engineering
EE 250 Control Systems Analysis
Tutorial Session 6

17 March 2021

Question 1.

A). Consider the open-loop transfer function given below:

$$G(s) = K\frac{s-2}{s(s+1)(s^2+6s+12)}$$

Draw the root locus for both positive and negative variations of the gain K. Which one would you use for designing a suitable compensator while placing poles and zeros strictly within LHS of the s-plane?

B). Design a stable controller that would ensure that $-2 \pm j2$ are the poles of the compensated system.

C). Design a compensator such that the dominant poles are at $-0.8 \pm j0.8$. **(Home Assignment)**