## ECE-320 Practice Quiz 8

Problems 1-4 refer to the following open loop Bode plot of $G(s) H(s)$


1) The gain crossover frequency used to determine the phase margin for this system is best estimated as
a) $0 \mathrm{rad} / \mathrm{sec}$
b) $1 \mathrm{rad} / \mathrm{sec}$
c) $1.8 \mathrm{rad} / \mathrm{sec}$
d) $12 \mathrm{rad} / \mathrm{sec}$
e) $100 \mathrm{rad} / \mathrm{sec}$
2) The phase crossover frequency for this system is best estimated as
a) $0 \mathrm{rad} / \mathrm{sec}$
b) $1.8 \mathrm{rad} / \mathrm{sec}$
c) $3 \mathrm{rad} / \mathrm{sec}$
d) $30 \mathrm{rad} / \mathrm{sec}$
e) $100 \mathrm{rad} / \mathrm{sec}$
3) The phase margin for this system is best estimated as
a) $+45^{\circ}$
b) $-45^{\circ}$
c) $+135^{\circ}$
d) $-135^{\circ}$
4) The gain margin for this system is best estimated as
a) +12 dB
b) -12 dB
c) $\infty \mathrm{dB}$
d) -2 dB

Problems 5-8 refer to the following open loop Bode plot of $G(s) H(s)$


5) The gain crossover frequency used to determine the phase margin for this system is best estimated as
a) $0 \mathrm{rad} / \mathrm{sec}$
b) $1 \mathrm{rad} / \mathrm{sec}$
c) $1.5 \mathrm{rad} / \mathrm{sec}$
d) $2 \mathrm{rad} / \mathrm{sec}$
e) $100 \mathrm{rad} / \mathrm{sec}$
6) The phase crossover frequency for this system is best estimated as
a) $0 \mathrm{rad} / \mathrm{sec}$
b) $1 \mathrm{rad} / \mathrm{sec}$
c) $1.5 \mathrm{rad} / \mathrm{sec}$
d) $2 \mathrm{rad} / \mathrm{sec}$
e) $100 \mathrm{rad} / \mathrm{sec}$
7) The phase margin for this system is best estimated as
a) $+30^{\circ}$
b) $-30^{\circ}$
c) $+60^{\circ}$
d) $-60^{\circ}$
8) The gain margin for this system is best estimated as
a) +5 dB
b) -5 dB
c) $\infty \mathrm{dB}$
d) 0 dB

Problems 9-12 refer to the following open loop Bode plot of $G(s) H(s)$

9) The gain crossover frequency used to determine the phase margin for this system is best estimated as
a) $0 \mathrm{rad} / \mathrm{sec}$
b) $5.5 \mathrm{rad} / \mathrm{sec}$
c) $7 \mathrm{rad} / \mathrm{sec}$
d) $15 \mathrm{rad} / \mathrm{sec}$
10) The phase crossover frequency for this system is best estimated as
a) $0 \mathrm{rad} / \mathrm{sec}$
b) $1 \mathrm{rad} / \mathrm{sec}$
c) $1.5 \mathrm{rad} / \mathrm{sec}$
d) $2 \mathrm{rad} / \mathrm{sec}$
e) none of these
11) The phase margin for this system is best estimated as
12) The gain margin for this system is best estimated as
a) $+70^{\circ}$
b) $-70^{\circ}$
c) $+135^{\circ}$
d) $-135^{\circ}$
a) +5 dB
b) -5 dB
c) $\infty \mathrm{dB}$
d) 0 dB

Answers: 1-c, 2-c, 3-a, 4-a, 5-d, 6-c, 7-b, 8-b, 9-c, 10-e, 11-a, 12-c

