ESE 406/505 & MEAM 513 – 2012-Mar-21 – Quiz – Name:_____

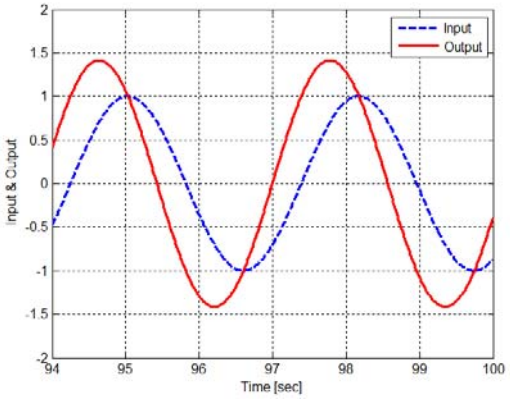
- Choose only one answer for each question by circling the letter.
- A correct answer is worth 2 points.
- No answer is worth 0 points.
- An incorrect answer is worth -1 point. Random guessing will lower your score, on average.

1. If $Y(s) = \frac{140}{s+1}U(s)$, what is the response to $u(t) = \sin(t)$ for t large?
   A. $y(t) \approx \sin(140t)$
   B. $y(t) \approx 140\sin(t + 88°)$
   C. $y(t) \approx 100\sin(t - 45°)$
   D. $y(t) \approx 70\sin(t - 88°)$

2. If $Y(s) = \frac{4}{s^2 + 0.4s + 4}U(s)$, what is the response to $u(t) = \sin(2t)$ for t large?
   A. $y(t) \to \infty$.
   B. $y(t) \approx 4\sin(2t)$
   C. $y(t) \approx -5\cos(2t)$
   D. $y(t) \approx 2\sin(4t)$

3. For the figure shown at right, the frequency response magnitude would be...
   A. ...about 5.6
   B. ...about 2.8
   C. ...about 1.4
   D. None of the above.

4. For the figure shown at right, the frequency response phase would be...
   A. ...about -90°
   B. ...about -45°
   C. ...about +45°
   D. ...about +90°



5. For the figure shown above at right, the transfer function could be...
   A. $G(s) = e^{-0.3s}$
   B. $G(s) = \frac{4}{s+4}$
   C. $G(s) = \frac{2s}{s+2}$
   D. ...all of the above.