Week 2 Assignment

The due date for submitting this assignment has passed.

Due on 2017-02-09, 11:59 IST.

Submitted assignment

1) Complex signals have ___________.
   - magnitude.
   - phase.
   - both magnitude and phase.
   - neither magnitude nor phase.

2) Consider a signal,
   \[ x(t) = \text{Re} \left( A e^{(JD+(-JC)/t)} \right) \]
   What is the phase of \( x(t) \) ? (A, B, C and D are positive constants)
   - A
   - B
   - C
   - D

3) Consider a signal,
   \[ x(t) = \text{Re} \left( A e^{(JD+(B-JC)/t)} \right) \]
   What can we conclude about decay or growth of \( x(t) \) ? (A, B, C and D are positive constants)
   - \( x(t) \) will grow with rate of growth of C.
   - \( x(t) \) will grow with rate of growth of B.
   - \( x(t) \) will decay with rate of decay of C.
   - \( x(t) \) will decay with rate of decay of B.

4) Which of the following systems is linear in 'X' ?

1 point
5) What is an ideal value of system function at poles?  
- Zero  
- Unity  
- Infinity  
- Finite and non-zero

6) Which of the following option is not correct regarding the transfer function?  
- Transfer function is defined as a mathematical representation of a system’s response with respect to stimulus.  
- Transfer function is applied in transient response region of the system.  
- Transfer function can be applied to linear system.  
- All the options are correct.

7) Which of the following option can be considered as a transfer function?  
- \( H(s) = \frac{\text{Output current}}{\text{Input current}} \)  
- \( H(s) = \frac{\text{Output current}}{\text{Input voltage}} \)  
- \( H(s) = \frac{\text{Output voltage}}{\text{Input current}} \)  
- All of the options can be considered as transfer functions.

8) If \( H(\omega) = \frac{1}{\omega} \), how is \( H(\omega) \) represented on the magnitude Bode plot?  
- \(-10 \log(\omega) \text{ dB}\)  
- \(-20 \log(\omega) \text{ dB}\)  
- \(-40 \log(\omega) \text{ dB}\)  
- \(-60 \log(\omega) \text{ dB}\).  


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Week 11: Weighting and loudness

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