Communication Theory

Spring-2024

Exam: Quiz 1
Marks: 25

Date: 29 Jan 2024
Time: 09:00 pm to 09:45 pm

Instructions:

- Answer any five questions. Each question is for five marks.
- Clearly state the assumptions (*if any*) made that are not specified in the questions.

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1. Compare DSB-SC, AM, SSB, and QAM modulation schemes and also sketch the spectrums of DSB-SC, AM, and SSB for modulating signal

$$m(t) = A_m \cos(2\pi f_m t).$$

2. Explain the impact of frequency offset and delay on coherent demodulation.
3. Describe what is instantaneous frequency, and derive and sketch it for the following signal

$$s(t) = \cos(\sin(t)).$$

4. Explain Hilbert transform in details.
5. Explain QAM method and compare it with SSB modulation scheme.
6. Describe NBFM scheme and its generation in detail.
