

No : Answer

Name : Solution

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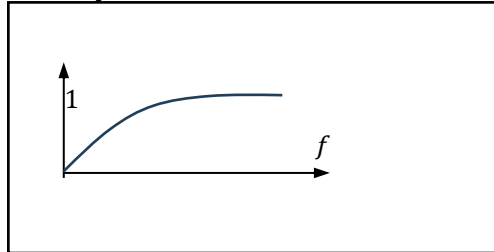
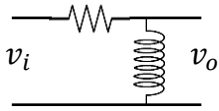
Department of Electrical Engineering & Electronics, "Communications" Quiz

30.04.2026

I handed over all smart devices (mobile phone, smartwatch, earphones, etc.) to the exam supervisor before the exam. I take full responsibility if any are found on me.
Exam duration:30 minutes. No books, notes, calculators, communication.

Sign here

1. Input to a RL-filter is White Gaussian Noise with spectral density $N_o = 1 \mu\text{W/Hz}$. What would be the shape of output noise spectral density when L and R have reasonable values?



2. A memoryless source generates the symbols $\{u, k, t, c, i\}$. A Huffman dictionary generator assigns the codes $\{0,10,110,1110,1111\}$ to the symbols respectively. Source outputs are then coded and transmitted. Which symbol stream the receiver outputs when it receives the stream 10011001110111110?

kutucik

3. What would be the null-to-null bandwidth of the signal generated by multiplying 10 MHz carrier with a baseband signal of 4-ary rectangular pulses with amplitudes $\{-3,-1,1,3\}$ representing the symbols $\{00,01,11,10\}$ and the bit-rate of 1 Mbps?

1 MHz

4. In short plain English, what is the purpose of correlators in a receiver?

Measure similarity between incoming and expected waveforms