Take Test: Test 1 (2018-19)

Test Information

Description	
Instructions	
Timed Test	This test has a time limit of 1 hour.This test will save and be submitted automatically when the time expires. Warnings appear when **half the time**, **5 minutes**, **1 minute**, and **30 seconds** remain.
Multiple Attempts	This Test allows 3 attempts. This is attempt number 1.
Force Completion	This Test can be saved and resumed at any point until time has expired. The timer will continue to run if you leave the test.
	This test does not allow backtracking. Changes to the answer after submission are prohibited.

Close Window

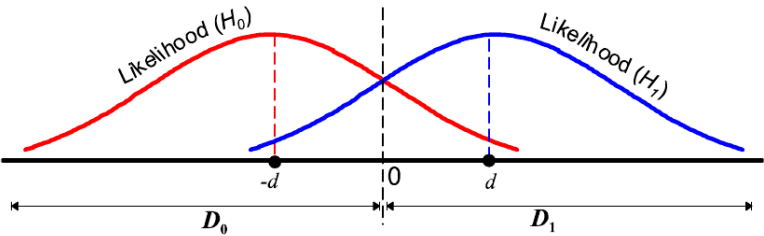⚠ Moving to the next question prevents changes to this answer.

Question 2

10 points   Save Answer

Consider a binary communication system which uses the following two equiprobable signals $s_0(t)$ and $s_1(t)$ of equal energy E. The signals are transmitted over a communication channel which adds white Gaussian noise having a double-sided power spectral density of 10^{-6} W/Hz. The constellation diagram is given below, where the decision regions are also shown.

If the forward transition matrix $\mathbb{F}$ of the equivalent discrete channel is

$$\mathbb{F} = \begin{bmatrix} 0.994, & 0.006 \\ 0.006, & 0.994 \end{bmatrix}$$

the energy E of the signals $s_0(t)$ and $s_1(t)$ is

(a) 2.25×10^{-6};

(b) 4.26×10^{-6};

(c) 6.25×10^{-6};

(d) 8.25×10^{-6};

(e) none of the above.

○ a

○

b

○ c

○ d

○ e

⚠ Moving to the next question prevents changes to this answer.

Question **2** of **10** ▷

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