

## Take Test: Test 3 (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.

 Moving to the next question prevents changes to this answer.

Question 1 of 12 

## Question 1

9 points

Save Answer

Consider a SIMO communication system operating in the presence of a desired signal with signal power 100mW and one interferer with double-sided  $\text{PSD}(f)$  of  $10^{-2}$  W/Hz. The noise is assumed to be AWGN with double-sided  $\text{PSD}(f)$  of  $10^{-2}$  W/Hz. The receiver employs a complete interference cancellation subspace beamformer and utilises a ULA of 10 antennas. If the channel bandwidth is 8 kHz what is the system/channel capacity?

- (a) 0 bits/sec.
- (b) 14.4 bits/sec.
- (c) 72 bits/sec.
- (d) 144 bits/sec.
- (e) infinity bits/sec.


☐ a

☐ b

☐ c

☐ d

☐ e

 Moving to the next question prevents changes to this answer.

Question 1 of 12 