

Noise Fundamentals

Name:		Content		Presentation	
		Distribution	Given	Distribution	Given
Abstract	Description of what was done	1	3		
	Accomplishments including key numerical results with uncertainties	2			
	Critical thinking (See note 1 below)			1	2
	Readability (See note 2 below)			1	
Introduction	Discussion of Nyquist's theorem	4	9		
	Discussion of Schottky's theorem	4			
	Motivation	1			
	Critical thinking (See note 1 below)			2	4
	Readability (See note 2 below)			2	
Experimental Procedure	Description of apparatus	4	16		
	Measurement procedure for Johnson noise	4			
	Measurement procedure for shot noise	4			
	Corrections for instrumentation noise and capacitive coupling in temperature prob	4			
	Critical thinking (See note 1 below)			2	4
	Readability (See note 2 below)			2	
Results and Analysis	Plot of Johnson noise power spectral density versus resistance with error bars	6	44		
	Boltzmann's constant with uncertainty from resistance dependence	5			
	Plot of Johnson noise power spectral density versus temperature with error bars	6			
	Boltzmann's constant with uncertainty from temperature dependence	5			
	Comparison of measured Johnsons noise to Nyquist's theorem	4			
	Discussion with data on the effect of bandwidth on shot noise measurements	3			
	Plot of shot noise power spectral density versus photocurrent with error bars	6			
	Comparison of measured shot noise to Schottky's theorem	4			
	Value for the charge of an electron with uncertainty	5			
	Critical thinking (See note 1 below)			2	4
	Readability (See note 2 below)			2	
Conclusion	Accomplishments	2	3		
	Improvements and future experiments	1			
	Critical thinking (See note 1 below)			2	4
	Readability (See note 2 below)			2	

Note 1: Logical progression, clarity, coherency and thoughtful style that demonstrates significance.

Note 2: Use of transitions, word choice, proper structure and grammatical correctness.

Include raw data in Appendix

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Other	Figure and table captions with correct placement and text reference	2	7	
	Correct numbering of figures, tables, equations, and pages	2		
	Correct formatting for title, authorship, affiliation and date	1		
	Correct format for references with reference indicators in text	2		
Category Total		75		25
Report Total				
Final Score (with 10 point reduction if late)				

Date Due:

Date Received:

Overall Comments and Suggestions