

Name: \_\_\_\_\_

Midterm Exam 1, February 2, 2017

Physics 152-000

THE HONOR CODE IS IN EFFECT FOR THIS EXAM – IT IS YOUR  
RESPONSIBILITY TO MAINTAIN HONESTY AND FAIRNESS.

Instructions:

1. When told to begin, please write your name on the top of every page.
2. **Write neatly and show your solution methods clearly.**
3. You will be graded on how you got your answers. Little or no credit will be given for answers that do not show how you got them.
4. Partial credit will be given if you have minor errors, but not for answers that incorrectly solve the problem.
5. Do your work for each problem on the page for that problem.
6. Point totals are noted by each question.
7. This exam is closed book and closed notes. You have up to 70 minutes to complete this exam. You must stop and turn in your exam when I announce the exam is over.

Good Luck!

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Emory Honor Pledge:

I, \_\_\_\_\_ (**print name**), by signing this examination, acknowledge that I have abided by the provisions and spirit of the **EMORY COLLEGE HONOR CODE** in my completion of this examination. This exam represents my own work, and I have neither given or received aid in completing this exam.

Signature: \_\_\_\_\_

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<b>1.</b>	<b>2.</b>	<b>3.</b>	<b>4.</b>	<b>Total:</b>
<b>out of 25</b>	<b>out of 25</b>	<b>out of 30</b>	<b>out of 20</b>	<b>Out of 100</b>

Name: \_\_\_\_\_

Permittivity constant  $\epsilon_0 = 8.854 \times 10^{-12} \text{ C}^2 / \text{N m}^2$   
 $k = 8.99 \times 10^9 \text{ N m}^2 / \text{C}^2$

Elementary charge  $e = 1.602 \times 10^{-19} \text{ C}$   
Electron mass  $m_e = 9.109 \times 10^{-31} \text{ kg}$   
Proton mass  $m_p = 1.673 \times 10^{-27} \text{ kg}$   
Neutron mass  $m_n = 1.675 \times 10^{-27} \text{ kg}$

circumference of a circle	$2 \pi r$	$1 \text{ km} = 10^3 \text{ m}$
area of a circle	$\pi r^2$	$1 \text{ mm} = 10^{-3} \text{ m}$
surface area of sphere	$4 \pi r^2$	$1 \mu\text{m} = 10^{-6} \text{ m}$
volume of a sphere	$\frac{4}{3} \pi r^3$	$1 \text{ nm} = 10^{-9} \text{ m}$
volume of a cylinder	$\pi r^2 L$	
area of a triangle	$\frac{1}{2} \text{ base} \times \text{height}$	