

Course: PHY 412. Electricity & Magnetism

Final Assessment Task. Semester Sept 2011 – Jan 2012.

Instructor: Jaafar Jantan aka Dr JJ (Associate Professor)

Your task is to provide evidence that you understand about electricity and magnetism by explaining the concepts and by providing quantitative examples to clarify understanding of the concepts. Your explanation and examples will be at the level where another student who comes to you can also understand your explanation. Make your explanation simple, clear and coherent and make use of pictures, sketches, graphs, algebraic relationships and arithmetic representation to further enhance your explanation. Remember that your audience is another student who just enrolled to take this electricity and magnetism course. Refer to the course and lesson learning outcomes to guide you on the explanation.

A Note on PLAGIARISM: DO NOT COPY & PASTE. All explanations must be your own work. All examples (and force diagrams) must be based on your own original examples based on existing textbook examples. So, modify the textbook examples to make it your own. You may consult any textbook, notes, PHeT simulations and other sources from our course. You may consult other students taking this course but you must not copy each other's work and **YOU MUST NOT consult other individuals. Be truthful to yourself and trust your own potential.**

Since I have to submit your grades by Jan 27th, **YOU MUST submit your work NO LATER than Monday Jan 23rd.** You DO NOT need to type your work. Since some of you may be away for the long holidays already, find ways to *scan (convert into digital pdf) your work and email the product to drjlanita@hotmail.com and cc to jjnita@gmail.com.*

THE TASK

1. Explain the concepts of electric field, electric force, electric potential and capacitance by providing the definition, by sketching and drawing pictures and force diagrams where necessary and by providing physical quantitative examples to further clarify the concepts.
2. Explain the concepts of electrical current, electrical potential, electrical resistance, electrical power and electrical energy by providing the definition, by sketching and drawing pictures where necessary and by providing physical quantitative examples to further clarify the concepts.
3. Explain the concepts of magnetic field, magnetic force, electromagnetic induction, inductance, electric motors and electric generators by providing the definition, by sketching and drawing pictures and force diagrams where necessary and by providing physical quantitative examples to further clarify the concepts.

STAY COOL, & BE TRUTHFUL TO YOURSELF. I WISH YOU ALL THE BEST & HAPPY HOLIDAYS