	Test Blueprint for the Third Exam in NASC 3			
	Wednesday, December 2, 2015, 2:00-2:55 P.M.			
	PSLH-B: ALL RECITATION CLASSES OF SECTION EF			
	Our Objectives	Number of Test Items		
	Physics in the Home	**K**	**C**	**A**
♥	To differentiate concepts that are quite similar to each other like:			
	→ Temperature and heat		1	
	→ Heat and work		1	
♥	To solve simple problems on temperature conversions			1
♥	To solve simple problems involving the mechanical equivalent of heat			1
♥	To explain the idea of thermal equilibrium		1	
♥	To explain the factors affecting linear and volume expansion		1	
♥	To compare the various modes of heat transfer: conduction, convection, radiation		1	
♥	To explain the factors affecting these modes of heat transfer		1	
♥	To explain other important concepts/constants like:		4	
♥	➢ Specific heat			
♥	➢ Thermal conductivity - conduction			
♥	➢ Emissivity (constant) - radiation			
♥	➢ Efficiency of heat engine			
♥	➢ coefficient of performance of a refrigerator			
♥	➢ entropy			
♥	To identify the essential ideas contained in the First and Second Laws of Thermodynamics		2	
♥	To enumerate the processes involved in the operation of the heat engine and refrigerator/air conditioner		1	
♥	To apply concepts of heat and thermodynamics in explaining occurrences in nature and in daily life			1
	The Physics of Electricity and Magnetism			
♥	to discover the truth behind the EM Challenges			
♥	to explain the seemingly strange phenomena in the EM Challenges using these ideas of Electromagnetism		4	
	→ charging by rubbing → electromagnet ♦ voltage			
	→ Coulomb's Law → Faraday's ideas ♦ electrical current			
	→ electric field → magnetic field ♦ electrical resistance			
	→ electric field lines → magnetic field lines			
	→ resistors in series → resistors in parallel			
♥	to explain important laws governing charges (electrostatics, conservation, quantization of charge)		1	
♥	to relate to everyday experiences some of the ideas of electricity and magnetism			1
♥	to show how electricity and magnetism are connected to each other		2	
♥	to explain the essential ideas in the operation of a photocopier		1	
♥	to describe how electricity is produced, transmitted and distributed for your home		1	
♥	to explain the relationship among the concepts involved in Ohm's Law		1	
♥	to solve simple problems involving Ohm's Law, the step-up and step-down transformers			2
♥	to link electromagnetism to the study of light (optics)		1	
	The Physics of Light			
♥	to define key terms used to describe the nature and behavior of light	2		
	→ wavelength → crest, trough			
	→ period → amplitude			
	→ speed → transverse, longitudinal			
♥	to analyze the wave equation in terms of the relationships among **λ, f** and **c**		1	
♥	to describe the properties of light as a wave (***Wave Model ng Light***)	3		
	→ reflection → interference (constructive at destructive)			
	→ refraction → polarization			
	→ diffraction			
♥	to explain the photoelectric effect using the quantum or photon model of light		1	
♥	to explain the meaning of wave-particle duality of light and matter		1	
		5	27	6
	Total Number of Test Items ≈ 40			
	Format: I. Modified True or False			
	II. Multiple Choice-items with * * need to have the explanations/solutions shown.			
	No explanation/solution, no credit.			
	BRING ID, CALCULATOR, EXTRA PEN			