

AP PHYSICS ASSIGNMENT SHEET: UNIT 6 - ELECTRICITY AND CAPACITANCE

MR. DARLINGTON

Topic (Percent of AP Exam)	Reading HW	HW Problems
IV. ELECTRICITY AND MAGNETISM (25%) [C3]		
16. ELECTRIC CHARGE AND ELECTRIC FIELD (5%) [C3]		
		<i>Chapter 16</i>
16.1 Static Electricity; Electric Charge and its Conservation	16.1	<u>page 465</u>
*The origin of the word electricity is described		12
*Definition of electrostatics and the nature of an electric charge		13
*State the law of electrostatics and the law of conservation of charge		14
16.2 Electric Charge in the Atom	16.2	<u>page 466</u>
16.3 Insulators and Conductors	16.3	20
*Explain the charging an object by contact		21
*Definition of conductors and insulators		31
*Understand the distribution of charge in a conductor		33
*Discuss semiconductors		<u>page 467</u>
16.4 Induced Charge: the Electrostatic Induction	16.4	38
*Explain the charging of an object by induction		40
16.5 Coulomb's Law	16.5	
*State Coulomb's law and its equation to calculate the electrostatic force between two charges		
*Define the permittivity of free space		
16.7 The Electric Field	16.7	
16.8 Field Lines	16.8	
*The electric field is defined and an expression for it is derived for a single point charge.		
*Electric field lines are described as means to depict the electric field		
		<i>Chapter 17</i>
17. ELECTRIC POTENTIAL AND ELECTRIC ENERGY; CAPACITANCE (4%) [C3]		
17.1 Electric Potential and Potential Difference	17.1	<u>page 489</u>
*Electric potential is defined as the difference in potential		10
*Definition of the volt		12
17.2 Relation Between Electric Potential and Electric Field	17.2	16
*The relationship of the potential difference between two points to the uniform electric field existing between the points is given		21
		24
		26
17.3 Equipotential Lines	17.3	
*Equipotential lines and surfaces are defined		<u>page 490</u>
17.4 The Electronvolt, a Unit of Energy	17.4	37
*Definition of electronvolt		40
17.5 Electric Potential due to Point Charges	17.5	<u>page 491</u>
*The potential due to a single point charge is given		52
17.7 Capacitance	17.7	
17.8 Dielectrics	17.8	
17.9 Storage of Electric Energy	17.9	
*A capacitor is defined as its capacitance		
*The equation for the capacitance of a parallel plate capacitor is given		
*The effect of introducing a dielectric into a parallel plate capacitor is discussed		
*An expression for the energy stored in a parallel plate capacitor is derived		
ELCTRIC CHARGE, FIELD, POTENTIAL AND ENERGY; CAPACITANCE EXAM AND PROBLEM SET DUE DATE: WEDNESDAY, JANUARY 15		