Physics 542 – Test 1

Possible Derivations

1)   Reason for definition of $(\mathbf{H} = \mathbf{B}/\mu_0 - \mathbf{M})$

2)   Displacement current. Why necessary ? Why $J_d = \dfrac{\partial D}{\partial t}$?

Adjustment to Ampere's Law: $\nabla \wedge H = J_f + \dfrac{\partial D}{\partial t}$

3)   Poynting's Theorem. Derivation and interpretation leading to definition of the Poynting vector, **S**.