Electrodynamics Revision Sheet for year 3

Complete the following

1. $\nabla^2 \mathbf{A} = -$

2. $\underline{m} = 0.5\,\mathbf{I}$ (moment of a circuit)

3. $\mathbf{B} = \dfrac{\mu_0}{4\pi}\left[-\ldots\ldots\ldots\ldots+\ldots\ldots\ldots\ldots\right]$ (field of dipole)

4.   Write down the force on a charge q moving with velocity $\mathbf{v}$ in $\mathbf{E}$ and $\mathbf{B}$ fields.

5. $c^2 \nabla \wedge \mathbf{B} =$

6.   Express in cylindrical polars $\nabla \cdot \mathbf{F}$

7.   Maxwell's equations for empty space involving $\nabla \cdot$

8.   Maxwell's equations for empty space involving $\nabla \wedge$

9.   Write the wave equation for photons in empty space.

10.   Write the inhomogeneous wave equation for electromagnetic waves in a dielectric.