Practice Theory questions on Electromagnetism.

1. What is an operator del? Explain gradient, divergence, and curl.
2. State the physical significance of gradient and divergence and curl.
3. State and explain Fundamental theorem of vector calculus.
4. What is Gauss's law in electrostatics. Deduce the integral and differential forms of Gauss law.
5. Obtain integral and differential forms of Ampere's law.
6. What is Faraday's law of electromagnetism. Deduce the integral and differential forms of Faraday's law.
7. Derive modified Ampere's law using continuity equation.
8. State Gauss's law for magnetism. Explain its significance.
9. Starting from Maxwell's equations, deduce the wave equation for plane waves in free space.
10. Write all four Maxwell equations and state its physical significance.