



# **Electromagnetism 3**

## **Problem Set 5**

**Maxwell Equations, Macroscopic Electromagnetism, Conservation Laws**

Department of Physics, Sharif University of Technology

Due Date: 10th December 2024

### **1 Heaviside-Feynman**

Problem 6.2 of Jackson 1999.

### **2 Homogeneous Diffusion Equation**

Problems 6.3 of Jackson 1999.

### **3 A Rotating Conducting Sphere with Magnetization**

Problems 6.4 of Jackson 1999.

### **4 Dirac Magnetic Monopole**

Problem 6.18 and 6.19 of Jackson 1999.

### **5 Speed of Propagation and Causality in Coulomb Gauge**

Problems 6.20 of Jackson 1999.

### **6 Electromagnetism of Point Dipole**

Problems 6.21 and 6.22 of Jackson 1999.