I. Electrostatic Fields
   A. Capacitors and capacitance
   B. Divergence theorem/Gauss’s law
   C. Electric energy and energy density
   D. Image theory
   E. Faraday’s law

II. Magnetostatic Fields
   A. Magnetic forces
   B. Torque on a current loop/magnetic moment
   C. Biot-Savart law
   D. Magnetic fields of common current components
      1. Current segment/semi-infinite current segment/infinite-length current
      2. Current loop
   E. Forces between current-carrying conductors
   F. Ampere’s law
      1. Integral form
      2. Differential form
   G. Stoke’s theorem
   H. Gauss’s law for magnetic fields
   I. Magnetization/relative permeability
   J. Magnetic field boundary conditions
      1. Tangential magnetic field
      2. Normal magnetic flux
   K. Inductors and inductance

III. Dynamic Fields
   A. Faraday’s law for dynamic fields
      1. Transformer induction
      2. Motional induction
      3. General case of induction
   B. Displacement current
   C. Ampere’s law for dynamic fields
   D. Electromagnetic boundary conditions
   E. Continuity equation

- You are allowed (1) 8.5"x11" formula sheet.
- Differential operator formulas will be provided.
- **Non-trivial** integration formulas will be provided