

Department of Electrical and Computer Engineering

COMPREHENSIVE/BREADTH EXAM

TTG Area: Power Systems

ECGR 4143 Electrical Machines

A coaxial cable consists of a solid inner conductor of radius a , surrounded by a concentric cylindrical tube of inner radius b and outer radius c . The conductors carry equal and opposite currents I_0 distributed uniformly across their cross-sections. Determine the magnitude and direction of the magnetic field at a distance r from the axis. Make a graph of the magnitude of the magnetic field as a function of the distance r from the axis.

