Textbook Suggestions for the Part I Graduate Exam in Physics

Part I of the Graduate Examination in Physics tests a student’s understanding of basic undergraduate physics in the areas of classical mechanics, E&M, relativity, statistical mechanics and thermodynamics, and quantum mechanics. Most of the questions are drawn from the material covered in our freshman and sophomore subjects 8.012, 8.022, 8.033, 8.04, and 8.044. Questions may involve some of the simpler material from our upper level undergraduate subjects 8.05, 8.06, 8.07 and 8.08 and 8.09, but much of the material in these subjects is more appropriate to the Part II exam.

Most students study for the exam by reviewing the textbooks and class notes from courses they have already taken. If you would like to consult other texts, or are unsure about the level of understanding necessary for the exam, you may find the following books useful.

Classical Mechanics
   An Introduction to Mechanics, Kleppner and Kolenkow, McGraw-Hill

Electricity and Magnetism
   Electricity and Magnetism, Purcell, McGraw-Hill

Relativity
   Special Relativity, French, Norton

Vibrations and Waves
   Vibrations and Waves, French, Norton
   Vibrations and Waves in Physics, Main, Cambridge University Press

Interference and Diffraction
   Optics, Hecht, Addison Wesley (chapters 9 and 10)

Thermodynamics and Statistical Mechanics
   Fundamentals of Statistical and Thermal Physics, Reif, McGraw-Hill

Quantum Mechanics
   Introduction to Quantum Mechanics, Griffiths, Prentice Hall