

180B Study Guide - Test 1

Test 1 will consist of any combination of the problems and questions below. The Test will have approximately 10-12 multiple-choice questions and problems. Many questions and problems should not take much time to answer (if you know the concept). I will supply an answer sheet (no need for any scantron). All problems with calculations will require you to supply the answer (I will not provide choices). You should have already done much of what is listed below. Anything I did not explicitly list below will not be on the test, such as; vector problems, Gauss's Law, Dielectrics, etc.

Chapter 17

Listen to On Intelligence-The Senses 1,2,3

Know the Four Models of the Atom?

Understand Diagrams 17.6, 17.8, 17.9, 17.22, 17.60

Watch Mechanical Universe. I will ask about the Gold Leaf Electroscope, Differences between Conductors and Insulators. (Conceptual Question 7)

Explain the physics of Millikan's Oil Drop Experiment.

I can ask anything about the experiment.

Look again at my Keynote. Click on the diagram in my website for the Keynote presentation.

Understand this concept Static Cling page 552, Sensitive Snout page 558

How did Coulomb find that the electric force is proportional to $1/r^2$? Know how to use Coulomb's Law. I will not ask about vectors at all. So relax.

Know how to draw and understand electric field lines between two different conductors.

How does a photocopier work. Know something about the transfer of charge and the photoconductor. Information on my webpage.

Qualitative Analysis Problems 17.1, 17.3 pages 547 and 551.

Conceptual Questions 1, 4, 7, 10, 11

Multiple Choice Questions 1, 3, 4, 6, 7, 10, 11, 12, 14,

Basic Problems 5, 6, 8, 9, 11, 37, 49,

Medium Problems 12, 13, 14, 15, 16, 19, 39, 70, 71, 73

Many of these problem and questions are similar. They are redundant. You should have done many of these on Mastering Physics.

Chapter 18

What is Electric Potential Energy?

What is Electric Potential?

Explain my long work equation on my webnotes.

What is the Action Potential? What is the sequence of events that lead to the Action Potential?

Be able to explain diagrams 18.2,18.4, 18.6,18.11, 18.21, 18.22

Are you al right up there? Page 589

Conceptual Questions 6, 14,

Multiple Choice Questions 3, 7,

Basic Problems 1, 2, 11, 12, 14, 15, 35, 36, 38, 39, 47, 57,

Medium Problems 26, 32, 32, 53, 55, 63, 69

Many of these problem and questions are similar. They are redundant. You should have done many of these on Mastering Physics.

Chapter 19

Know how to use Ohm's Law equations 19.2 and 19.3

Know how to interpret equation 19.4

Read the section on Superconductivity. Understand Figures 19.5 and 19.7

Life's Currency Diagram page 630

Understand figure 19.37

Know how to calculate (V,I,R) Resistors in Series and Parallel.

Read and understand the section on Ammeters and Voltmeters

Qualitative Analysis Problem 19.2, 19.4 and 19.5 pages 626, 631 and 636

Conceptual Questions 3, 6, 7, 11, 12, 13,

Multiple Choice Questions 2, 3, 4, 5, 7, 10, 13, 14, 15

Basic Problems 1, 2, 3, 6, 8, 15, 16, 33, 35,36, 37, 38, 46,

Medium Problems 40, 43, 44, 54, 75, 85

Many of these problem and questions are similar. They are redundant. You should have done many of these on Mastering Physics

I will start the test as early as possible. Be there early. The room will be full. Please fill the seats from left to right. Fill in ALL the seats. Do not leave any empty seats. If you leave an empty seat, a person coming in late will bother you. If everyone fills the room as I suggest, I will be able to hand out the tests earlier and faster. You will have 55 minutes.

