Study Guide for Final

This is simply a guide of topics that I consider fair game for the final. I don't promise to ask you about them all, or about any of these in particular; but I may very well ask you about any of these.

1. Networks and the Internet
   a. History: ARPAnet, NSFnet, Internet
   b. How networks are laid out: client/server, peer-to-peer
   c. Local and wide area networks
   d. Topology: bus, token ring, star
   e. How Ethernet and wireless work; how they are used in a network; problems
   f. Modems, DSL, and cable modems
   g. Connecting networks; how they talk to each other, how information travels from one point in a network to another point in the same, or a different, network
   h. What a network protocol is; SMTP (email), HTTP (web)
   i. How Internet file sharing, email, chat, and instant messaging work
   j. How streaming audio and video work
   k. All about web browsers: how they get web pages, cookies (especially third party cookies)
   l. Web searching and Google

2. Security
   a. How attackers get into a PC
   b. Spyware, adware, and spam
   c. Firewalls
   d. Computer worms and viruses
   e. Antivirus, antispam, and defensive software
   f. Encryption with two keys

3. Programming
   a. Translating a problem statement into a series of steps that can then be written as a program (stepwise refinement)
   b. What a variable and a constant are

4. Python
   a. The IDLE GUI, interpreter
   b. Strings, quotes, and string methods and functions
   c. Numbers, arithmetic operations, and conversion to/from strings
   d. Comparisons
   e. If, while, and for
   f. Range(n), random.randrange(n), random.randrange(m, n)
   g. Recognizing a valid program
   h. Finding bugs in programs