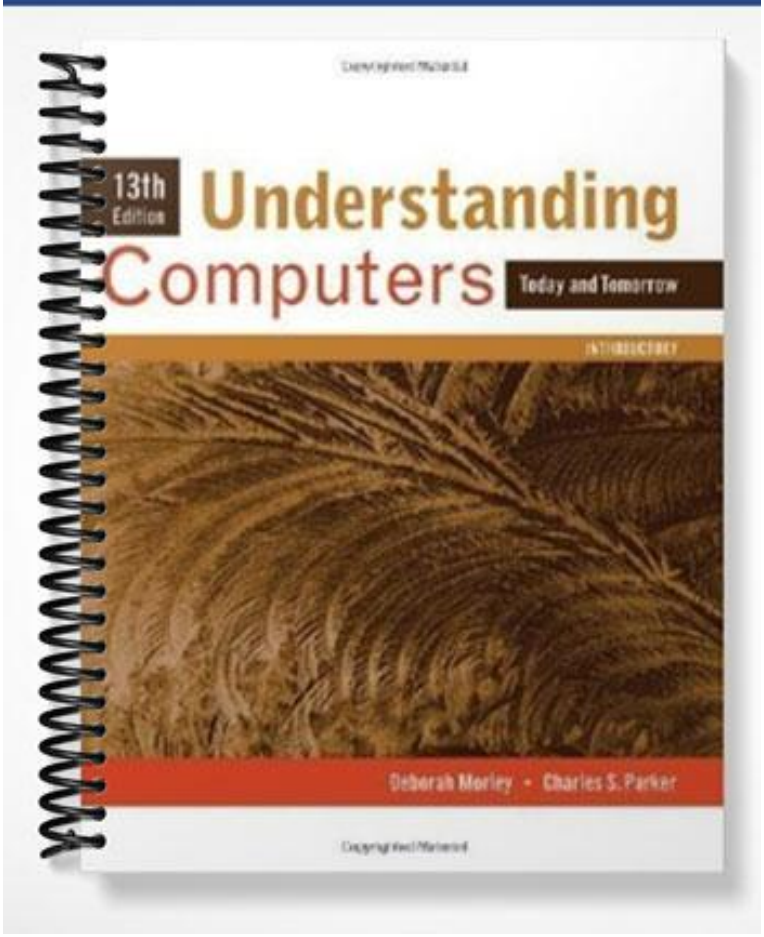
SOLUTIONS MANUAL



Understanding Computers

Chapter Two: The System Unit: Processing and Memory

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Key Term Matching Answers

1. h

2. a

3. c

4. j

5. i

6. d

7. f

8. b

9. e

10. g

Answers to Self-Quiz

1. T

2. F

3. T

4. T

5. F

6. 13

7. quad-core

8. port

9. multiprocessing

10. a. 6 **b.** 2 **c.** 4 **d.** 9 **e.** 7 **f.** 1 **g.** 8 **h.** 5 **i.** 3

Answers to Exercises

1.
a. kilobyte
b. random access memory
c. read-only memory
d. Universal Serial Bus
e. PCI Express
f. central processing unit

2. CAFE

3.
a. bit
b. Unicode
c. cache memory
d. arithmetic logic unit or ALU

4. Use a USB hub

5. Increase memory, upgrade to a larger drive or add a second hard drive, clean up the hard drive, run system maintenance programs, upgrade the Internet connection, etc.

Discussion Question Solutions

Student should participate in a class discussion about the topics listed below. Discussions should include the questions mentioned in the included paragraph and student should form an opinion on this topic and express it using clear and coherent statements.

1. Motivation for green computing

2. Implantable chips

Project Solutions

Answers to the projects will vary, but the following are guidelines for what types of information should be included in a student's project solution in order to receive full credit and a suggested grading rubric. **NOTE**: The totals in the rubric tables are formulas. To recalculate them after changing the possible point values or entering a student's score, right-click on the total and select *Update Field.*

HOT TOPICS

1. Wearable PCs Student should submit a one- to two-page paper summarizing the student's research and opinion regarding wearable computers. Student should discuss one specific wearable computer on the market and state whether or not he or she would be willing to wear that computer, how (if at all) wearable PCs would

need to be changed in order for the student to want to wear one, and if wearable computers would be needed or useful in the student's chosen profession.

Description	Pts	Student Score
Student prepares a one- to two-page summary of his or her research into wearable computers.	2	
Students describes one wearable computer on the market and explains its purpose.	2	
Student discusses whether or not he or she would be willing to wear a wearable computer in public, how (if at all) wearable PCs would need to be changed in order for the student to want to wear one, and if he or she thinks use by consumers will increase in the future.	3	
Student lists his or her chosen profession and includes an opinion regarding whether or not wearable computers would be needed or useful in that profession, including any advantages or disadvantages.	2	
Paper is reasonably free of typographical, spelling, and grammatical errors.	1	
TOTAL POSSIBLE POINTS:	**10**	**0**

SHORT ANSWER/RESEARCH

2. Adding Memory Student should submit a one-page paper summarizing the student's research into adding new memory to an existing computer. Included should be an explanation of the computer and its current memory configuration, as well as the proper type and configuration of additional memory, whether the existing memory can remain in the computer, and so forth.

Description	Pts	Student Score
Student prepares a one-page summary which includes the following about an existing computer: manufacturer, model number, CPU, current amount of memory, total memory slots, and number of available memory slots.	3	
Student determines the type of memory needed for the computer, including the choices in capacity and configuration, if you have to add memory in pairs, etc.	5	
Student includes a statement addressing the options for adding memory to the selected computer.	1	
Paper is reasonably free of typographical, spelling, and grammatical errors.	1	
TOTAL POSSIBLE POINTS:	**10**	**0**

HANDS ON

3. Intel Museum Tour Student should submit a one-page summary of the student's experience taking a tour of one of the Intel Museum exhibits. Included should be the name of the tour taken and at least three interesting facts the student learned during the tour.

Description	Pts	Student Score
Student accesses the Intel Museum exhibits site and takes one tour.	3	
Student prepares a one-page summary of the exhibit visited which includes at least three interesting facts learned.	6	
Paper is reasonably free of typographical, spelling, and grammatical errors.	1	
TOTAL POSSIBLE POINTS:	**10**	**0**

ETHICS IN ACTION

4. People Chips Student should participate in a discussion (in-class, via an online class discussion group, in a class chat room, or via a class blog, depending on the instructor's directions) about the ethical use and ramifications of implantable chips. Discussions should include the questions mentioned in the included paragraph and student should form an opinion on this topic and express it using clear and coherent statements. A short written summary of the student's position should be turned in, if assigned.

Description	Pts	Student Score
Student expresses his or her opinion on the use of human-implantable chips.	2	
Student supports his or her position on this issue.	2	
Student explains his or her position clearly and understandably.	2	
Student actively participates in discussion.	2	
Student is respectful of other students' opinions.	2	
TOTAL POSSIBLE POINTS:	10	0

PRESENTATION/DEMONSTRATION

5. Binary Conversions Student should give a 10-minute or less presentation explaining how to convert a three-digit decimal number to binary and hexadecimal and back again, without using a calculator. Also included should be an explanation of how the decimal number 10 can be represented in base 3. . The student should use good presentation techniques (speaking clearly and slowly at an appropriate volume, no distracting mannerisms, etc.) and use at least one of the following: chalkboard, handouts, overhead transparencies, or a computer-based slide presentation. A short written summary should be turned in, if assigned

Description	Pts	Student Score
Student demonstrates how to convert a 3-digit number to binary and to hexadecimal and back again, without using a calculator.	4	
Student shows how to represent a binary number in base 3.	3	
Presentation includes at least one of the following: chalkboard, handouts, overhead transparencies, or a computer-based slide presentation.	1	
Student uses good presentation techniques (such as speaking clearly and slowly at an appropriate volume with no distracting mannerisms) and the presentation lasts an appropriate length.	2	
TOTAL POSSIBLE POINTS:	10	0

WEB ACTIVITIES

6. Interactive Activities Student should work the interactive Crossword Puzzle, watch the Video Podcastss and Online Videos, and explore the Further Exploration links associated with this chapter as assigned by their instructor.

7. Interactive Activities Student should work the Student Edition Labs associated with this chapter as assigned by their instructor. The Student Edition Labs are part of the CoursePort system and so the student's completion of this activity is recorded.

8. Test Yourself Student should review the Online Study Guide for this chapter, and then complete the Key Term Matching exercise, the Self-Quiz, the Exercises, and the Practice Test. These activities are part of the CoursePort system and so the student's completion and score is recorded.

Chapter Quiz Answers

The Chapter Quiz (located in the Instructor's Manual) may be reproduced to distribute to your students for an additional homework or an in-class quiz.

Answers:

1. F
2. T
3. F
4. F
5. F
6. b
7. e
8. e
9. c
10. a