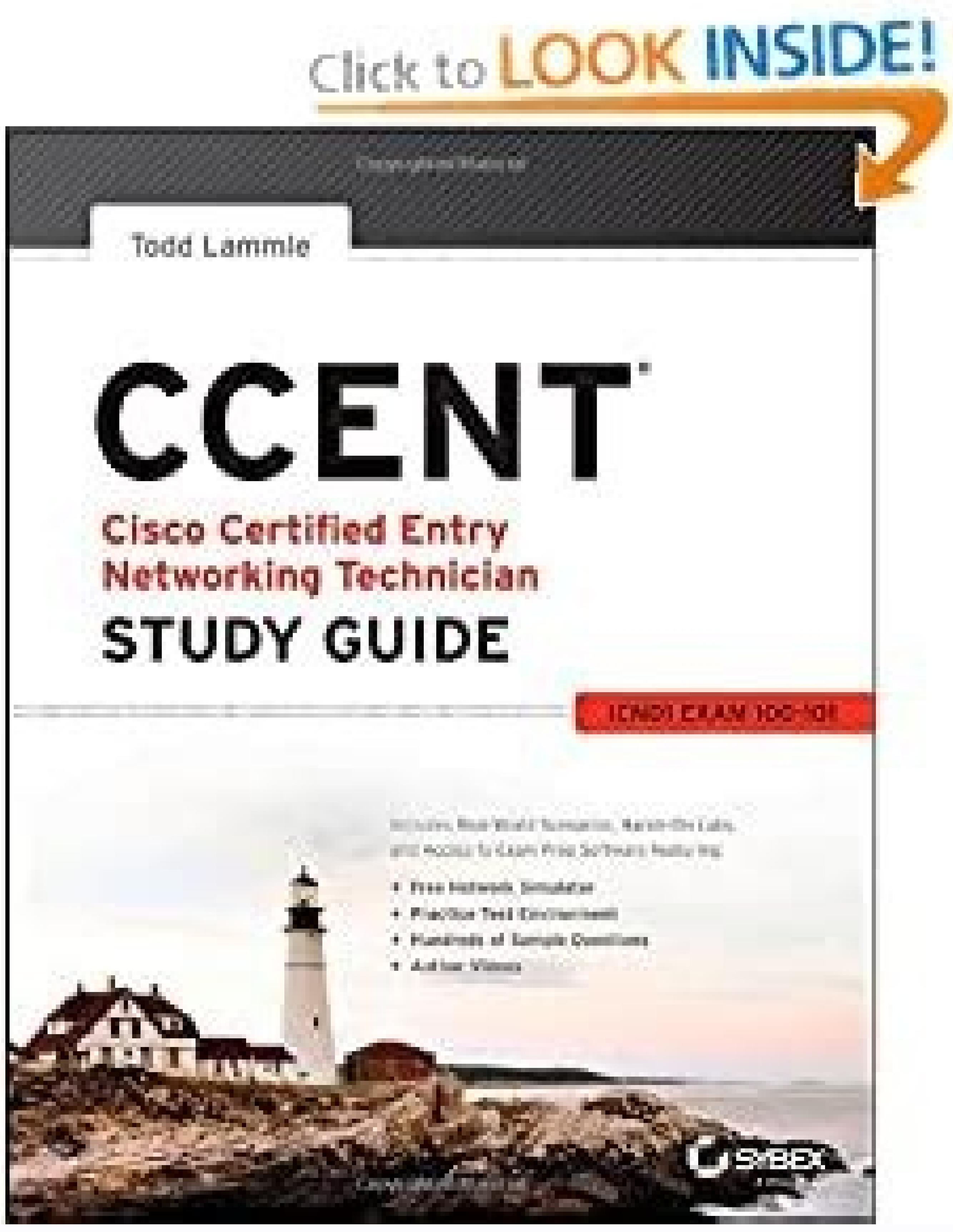
Computer science 101 study guide

BIOL 101 Study Guide Quiz 5 Liberty University complete solutions correct answers A+ work

Study Guide: Quiz 5

	Quiz Preparation Tasks:	Your Answers and Notes
10	**The Internally Integrated Human Animal**	
10.1	**The Integrated Human**	
	List the names of 10 body systems and the principle role of each in serving the rest of the body.	
	As a student runs up the stairs, which 2 body systems would be most immediate in their support of the muscular system in this activity?	
	As a student runs up the stairs, her ____________ system serves her by providing moisture for evaporation to moderate her body temperature.	
10.2	**The Muscular System**	
	Muscle Structural Organization	
	A muscle is composed of thousands of muscle cells (fibers) bound into groups of 100 or more fibers called ____________, each of which is surrounded by ____________ tissue called perimysium.	
	What is the name of a contractile unit of a muscle?	
	Muscle Contraction	
	During muscle contraction, ____________ filaments use protein heads to attach sequentially to sites on actin filaments.	
	Control of Contraction: Ions, Gradients, and Membrane Potentials	
	While waiting for a signal to contract, a muscle cell membrane maintains a slightly higher positive charge on the ____________ of the membrane only because ____________ pumps are available to generate this difference.	
	Contraction of Cardiac and Smooth Muscle	
	Which of the 3 general types of muscle tissue helps to keep both your blood pressure regulated and your digestive processes effective?	
	Name the calcium-binding proteins in smooth muscle and those in skeletal muscle.	
10.3	**The Cardiovascular System**	
	Blood: A Medium of Exchange	
	What is the most common molecule found in blood?	
	Blood Vessels: The Body's Avenue of Life	
	In which type of vessels do the exchange of oxygen and carbon dioxide and of nutrients and cell wastes occur (principally)?	
	The Heart: The Dynamo of Human Life	
	Systolic blood pressure is the ____________ number of a blood pressure reading. It is recorded when the left ____________ contracts.	
	Trace the route of blood flow through the human heart.	
10.4	**Basic Concepts of Immunity**	
	List 3 general lines of defense in the human immune system.	
	Your First Line of Defense	



Because of efficiency.
While loops should always be ____________
indented
The two ways to end a loop are:
•Count variable
•User input
Match the following definitions:

A loop is a statement used to repeat program commands.

We initialize a variable to prevent junk values from being stored in them.

num < 10 is an example of a condition.

It is important to use loops to repeat code because we want programs to be efficient.
Answer 1:
repeat
Answer 2:
initialize
Answer 3:
condition
Answer 4:
efficient
c = c + 1 is called a(n) ____________
count variable
Which loop prints the numbers 1, 3, ..100?
c = 1

while (c <= 100):
print (c)
c = c + 2
Ask the user to input a number less than 100. Print all the numbers from that number to 100.

Which loop correctly does this?

WORLD'S #1 QUICK REFERENCE STUDY GUIDES U.S. $3.95 / CAN $5.95

QUICK STUDY COMPUTER

COMPUTER SCIENCE

The History of People

Gottfried Leibniz (1646-1716) - Invented the first mathematical machine which could be used to add, subtract, multiply and divide numbers. He also developed the concept of using binary 1 and 0 to represent numerical values.

Charles Babbage (1791-1871) - Designed and partially implemented a steam-driven, mechanical Difference Engine to calculate tables of numbers. Designed, but never implemented, a mechanical Analytical Engine to execute programs.

George Boole (1815-1864) - Developed the ideas now known as Boolean Algebra using the concepts of 1 and 0 to denote true and false which were originally proposed by Gottfried Leibniz.

Herman Hollerith (1860-1929) - Inventor of the tabulating machine which used punched cards to conduct the US Census in the late 1800's.

John von Neumann (1903-1957) - Promoted the stored program model for sequential computers. Instrumental in early development of computers in America.

Grace Murray Hopper (1906-1992) - Mathematician and U.S. Navy admiral. Encouraged development of compilers and validation methods during the 1950s and 1960s.

William B. Shockley (1910-1989) - Along with John Bardeen and Walter H. Brattain, invented the junction transistor (1948), leading to reliable computers.

Alan Turing (1913-1954) - Defined "computability" of algorithms. Devised Turing Machine, a model for automatic computation. Influential in early British computing.

Thomas J Watson, Jr. (1914-) - Pushed IBM to develop commercial computers during the 1950s.

John Backus (1924-) - Designed FORTRAN (Formula Translator) while at IBM. This was the first machine-independent language that could be used by programmers (as opposed to machine specific assembly language).

Seymour Cray (1925-1996) - Designer of the first super-computers which are now used for high speed calculations such as weather prediction, military simulations and market analysis.

Douglas Engelbart (1925-) - Inventor of the computer mouse pointing device.

Robert N. Noyce (1927-1990) - At the same time as Jack Kilby, invented the integrated circuit (1958) and practical methods for its production.

Niklaus Wirth (1934-) - Inventor of the Pascal, Modula-2 and Oberon programming languages.

Donald Knuth (1938-) - Most famous living computer scientist. Seminal work in analysis of algorithms, compilers, and computer-based typesetting.

Dennis Ritchie (1941-) - Designed and developed the UNIX operating system and the C programming language at AT&T.

Vinton Cerf (1943-) - Known as the "Father of the Internet." He was part of the team that developed the Transmission Control Protocol/Internet Protocol (TCP/IP) networking protocol which is used as the underlying communications layer powering the Internet.

Robert Metcalfe (1946-) - Co-inventor of Ethernet while at Xerox, which is used as the physical layer in computer communications in local area networks (LANs).

Bjarne Stroustrup (1950-) - Developer of the C++ programming language.

Steve Jobs (1955-) - Co-founder (along with Steve Wozniak) of Apple Computer, a company which revolutionized the personal computer market (then dominated by IBM) with the Apple II and later with the Macintosh.

William H. Gates (1955-) - CEO and co-founder (along with Paul Allen) of Microsoft Corporation, the world's largest software manufacturer.

Tim Berners-Lee (1956-) - Known as the "Father of the World Wide Web (WWW)." He developed the idea of sharing research data (at CERN) written in HyperText Markup Language (HTML) across computers using the HyperText Transfer Protocol (HTTP) and Universal Resource Locators (URL), all of which were developed by his group. This was the foundation upon which the modern Web is based.

Linus Buvalds (1970-) - Developer of the Linux operating system, which has gained immense popularity as an open-source operating system for both development and end-user environment.

Marc Andreessen (1971-) - Developer of NCSA Mosaic, the prototype web browser and predecessor to Netscape Navigator.

The History of Machines

Pascaline (1623-1662) - by Blaise Pascal, France. The first mechanical calculator.

Differential Analyzer (1932) - by Vannevar Bush, MIT. A mechanical computer for solving differential equations. Used rotating gears and shafts.

Z3 (1941) - by Konrad Zuse, Germany. An electro-mechanical relay-based general-purpose computer. Used the binary number system, floating-menu calculations, and stored-program model. Accidentally destroyed by Allied bombers during World War II.

ABC (1942) - by Atanasoff and Berry, Iowa State University. First electronic digital computer. Included electronic switching circuits, capacitor-drum memory, binary number system, vector processing, and an internal clock. Fell into disuse during World War II and was forgotten for many years. Some ideas were incorporated into ENIAC.

Colossus (1943) - British electronic digital computer that helped decipher the German Enigma code, playing a key role in the outcome of World War II. Information on this machine was kept hidden for decades for security reasons.

ENIAC (1946) - by John Presper Eckert, Jr. and John William Mauchly, University of Pennsylvania. First productive electronic digital computer.

IBM 650 (1953) - First mass-produced computer (more than 1,000 sold). Used magnetic drum memory.

IBM 360 (1964) - Model for the modern mainframe computers. First computer to achieve program and operating system compatibility across a broad product line.

CDC 6600 (1964) - Forerunner of the modern super-computer.

Digital PDP-8 (1965) - First widely available mini-computer (more than 50,000 sold).

DEC PDP-11 (1970) - 16-bit minicomputer predecessor to the VAX systems from Digital Equipment Corporation (DEC) often used to run the BSD UNIX operating system.

Xerox Alto (1973) - Prototype of the modern personal computer and workstation. Included a keyboard, mouse, 256KB memory, 2.5MB disk drive, Ethernet connectivity and a bitmapped display.

Illiac IV (1975) - Unit of Illness. First true supercomputer.

MITS Altair (1975) - First widely available personal computer. Included papertape I/O and 4KB of memory. Had to be assembled after purchase.

Apple II (1977) - First commercially successful personal computer. Included audiocassette I/O, up to 48KB of memory and used a television or monitor for output.

TRS-80 (1977) - Hobby microcomputer from Radio Shack using the 4502 microprocessor.

IBM Personal Computer (1981) - IBM name convinced consumers and businessmen that personal computers were useful machines. Sparked a huge boom in personal computers.

Sun 1 (1982) - First of a successful line of workstations. Achieved minicomputer performance in a desktop package. Popularized the UNIX operating system, the C programming language, and bit-mapped displays.

Apple Macintosh (1984) - Popularized the easy-to-use, mouse-driven interface originally developed for the Xerox Alto and Xerox Star computers.

Connection Machine (1987) - Parallel computer which can have up to 65536 processors and distributed-memory SIMD design.

IBM PS/2 (1987) - The next generation of PCs from IBM which utilized the Intel 80286 and the 80386 processors.

Sun Sparcstation (1990) - Sun's introduction of the first workstation to use the RISC architecture known as SPARC (Scalable Processor ARChitecture).

Apple PowerMac (1994) - Redesigned Apple Macintosh based on the Motorola PowerPC chip (RISC) co-developed with IBM.

Sun UltraSpare (1996) - The 64-bit RISC processor system designed primarily for high-end computing and graphics.

Sun JavaStation (1996) - General purpose network computer based upon the Java architecture and microSparc processor.

Cray Y-MP - Super Computer designed for weather analyses and simulations.

Apple Newton - One of the first hand-held computers which supported handwriting recognition and uploadable programs.

The History of Languages

Computers were originally programmed using a different machine language for each model. During the 1950s, the use of assembly language became common. This eventually led to the high-level, machine-independent languages listed below.

FORTRAN (1957) - from John Backus, et al., at IBM. FORmula TRANslating. Mainly for scientific calculations. Introduced variable names more than one letter long.

LISP (1960) - by John McCarthy at MIT. LISt Processing. For symbol manipulation. Introduced garbage collection and the concept of functions as data objects.

COBOL (1960) - by CODASYL. COmmon Business Oriented Language. Mainly for business-related data processing. Introduced English-like syntax and emphasis on I/O structures.

ALGOL 60 (1960) - by a joint European-American committee. ALGOrithmic Language. General-purpose language. Introduced recursion and block structuring. Influenced most languages that followed.

APL (1962) - by Kenneth E. Iverson at Harvard. A Programming Language. Concise language for mathematical operations.

Simula (1967) - by O.J. Dahl and K. Nygaard at the Norwegian Computing Center. For discrete system simulation. Precursor of modern object-oriented languages.

BASIC (1967) - by John Kemeny and Thomas Kurtz at Dartmouth University. Beginner's All-purpose Symbolic Instruction Code. Simple, interpreted language for beginning programmers.

FORTH (1969) - An extensible language which uses post-fix notation and extensive use of the stack to provide functionality in limited space. Still used in embedded systems.

Pascal (1971) - by Niklaus Wirth at ETH Zurich, Switzerland. General-purpose language for teaching programming. Features static type checking.

Prolog (1972) - PROgramming LOGic. Designed for logic programming and experimentation in artificial intelligence.

C (1978) - by Brian W. Kernighan and Dennis M. Ritchie at AT&T Bell Laboratories. High-level language for low-level system programming.

Smalltalk (1980) - by Adele Goldberg, et al., at Xerox Palo Alto Research Center. First general-purpose, object-oriented language.

Ada (1980) - by the United States Department of Defense. General purpose structured language for embedded systems.

Modula-2 (1980) - A variant of Pascal also designed by Niklaus Wirth using a modular approach to programming.

C++ (1983) - by Bjarne Stroustrup at AT&T Bell Laboratories. An object-oriented language based on C. Stimulated interest in object-oriented languages.

Objective-C (1984) - An object-oriented version of C with a different approach from C++. Used primarily in the NeXT operating system.

Java (1994) - A portable object-oriented language designed by Sun Microsystems to run on any architecture and operating system by running within a virtual machine (JVM). Popularized by its use in Applets within web browsers.

JavaScript - A Java-like interpreted language designed to be embedded within HTML web pages and executed within the web browser. Although similar to Java, it does not have true object-oriented properties.

VBScript - Another scripting language designed to be embedded within HTML web pages and executed within the web browser. It is a subset of the Visual Basic programming language.

Visual Basic - Similar to BASIC, it has added object-oriented approach to accessing windows components and can be compiled to run much faster. Primarily for Intel architectures.

The ACM Code of Computer Ethics is available at http://www.acm.org/constitution/code.html