1.1 Introduction

1.1 Which of the following statements is *true*?
(a) hardware controls software
(b) software commands the computer to perform *actions* and make *decisions*
(c) C is an object oriented programming language
(d) Both (b) and (c)
ANS: (b)

1.2 Which of the following is going to be the key programming methodology for the next decade?
(a) object-oriented programming
(b) structured programming
(c) "legacy C code"
(d) "live-code approach"
ANS: (a)

1.2 Hardware and Software

1.3 Today's fastest computers are called _____.
(a) mega computers
(b) terminals
(c) supercomputers
(d) CPUs
ANS: (c)

1.4 Which of the following would not be considered *hardware*?
(a) an operating system
(b) a CPU
(c) a keyboard
(d) a disk
ANS: (a)

1.5 Computer programs are _____.
(a) sequences of instructions
(b) the information processed by the computer
(c) the various devices (disks, memory, keyboard) that comprise a computer system
(d) the people programming the computers
ANS: (a)

1.2.1 Moore's Law

1.6 Which of the following is most closely associated with Moore's Law?
(a) Every year or two, the price of computers has approximately doubled.

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(b) Object-oriented programming uses less memory than previous software-development methodologies.
(c) Demand for communications bandwidth is decreasing dramatically each year.
(d) Every year or two, the capacities of computers have approximately doubled without any increase in price.
ANS: (d) Every year or two, the capacities of computers have approximately doubled without any increase in price.

1.2.2 Computer Organization

1.7 Which of the following is not one of the six logical units of a computer?
(a) input unit
(b) programmer unit
(c) memory unit
(d) output unit
ANS: (b)

1.8 Programs or data not actively being used by the other units are placed on the _____.
(a) output unit.
(b) memory unit.
(c) secondary storage unit.
(d) central processing unit.
ANS: (c)

1.3 Data Hierarchy

1.9 The smallest data item in a computer, called a _____, can assume the value 0 or the value 1.
(a) bit
(b) character
(c) field
(d) digit
ANS: (a)

1.10 A _____ is a group of characters or bytes that conveys meaning.
(a) database
(b) record
(c) character set
(d) field
ANS: (d)

1.11 A _____ is an electronic collection of data that's organized for easy access and manipulation.
(a) field
(b) database

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(c) record
(d) file
ANS: (b)

1.4 Machine Languages, Assembly Languages and High-Level Languages

1.12 Which of the following is not one of the three general types of computer languages?
(a) Machine languages.
(b) Assembly languages.
(c) High-Level languages.
(d) Spoken languages.
ANS: (d) Spoken languages.

1.13 Which of the following statements is true?
(a) Interpreted programs run faster than compiled programs.
(b) Compilers translate high-level language programs into machine language programs.
(c) Interpreter programs typically use machine language as input.
(d) None of the above.
ANS: (b) Compilers translate high-level language programs into machine language programs.

1.14 A computer can directly understand only its own _____.
(a) machine language
(b) assembly language
(c) high-level language
(d) none of the above
ANS: (a)

1.15 *Assemblers*_____.
(a) convert machine language into high-level language.
(b) convert assembly language into machine language.
(c) convert high-level language into machine language.
(d) convert high-level language into assembler language.
ANS: (b)

1.16 Programs that directly execute high-level language programs without compiling are called _____.
(a) assemblers
(b) interpreters
(c) compilers
(d) translators
ANS: (b)

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1.5 The C Programming Language

1.17 Which of the following languages was an ancestor of C?
(a) A
(b) A+
(c) B
(d) B+
ANS: (c)

1.6 C Standard Library

1.18 When programming in C you'll typically use all of the following building blocks except _____.
(a) functions from the standard library
(b) functions you create yourself
(c) functions other people have created for you
(d) functions provided by ANSI / ISO
ANS: (d)

1.19 Using standard library functions can be more efficient because _____.
(a) they save programming time
(b) they are carefully written to perform optimally
(c) they increase program portability
(d) all of the above.
ANS: (d)

1.7 C++ and Other C-Based Languages

1.20 _____ are essentially reusable software components that model items in the real world.
(a) objects
(b) supersets
(c) modules
(d) developers
ANS: (a)

1.21 C++ was developed by _____.
(a) Bjarne Stroustrup
(b) Ada Lovelace
(c) Blaise Pascal
(d) Ken Thompson
ANS: (a)

1.22 Which language was developed by Microsoft for integrating the Internet and the web into computer applications?
(a) Objective-C.

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(b) Java.
(c) PHP.
(d) Visual C#.
ANS: (d) Visual C#.

1.23 Java was developed by _____.
(a) Sun Microsystems
(b) Bell Labs
(c) IBM
(d) ANSI/ISO
ANS: (a)

1.8 Object Technology

1.24 Which of the following is *not* an advantage of object-oriented programming?
(a) Software is more reusable.
(b) Software is more understandable, correct and modify.
(c) Using a modular, object-oriented design-and-implementation approach can make software-development groups much more productive.
(d) None of the above—these are all *advantages* of object-oriented programming.
ANS: (d)

1.25 _____ models software in terms similar to those that people use to describe real-world objects.
(a) Method-oriented programming
(b) Object-oriented design
(c) Procedural programming
(d) None of the above
ANS: b. Object-oriented design.

1.26 Which statement is *false*?
(a) Classes are reusable software components.
(b) A class is to an object as a blueprint is to a house.
(c) Performing a task in a program requires a method.
(d) A class is an instance of its object.
ANS: (d) A class is an instance of its object. The reverse is true.

1.9 Typical C Program Development Environment

1.27 The *compile* stage is when _____.
(a) the object code is linked with code for functions in other files
(b) the C program is translated into machine language code
(c) the program is executed one instruction at a time
(d) the program is placed in memory
ANS: (b)

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1.28 The linker creates _____.
(a) an *executable image*
(b) a *preprocessor directive*
(c) *object code*
(d) an *input stream*
ANS: (a)

1.10 Test-Driving a C Application in Windows, Linux and Mac OS X

(No questions.)

1.11 Operating Systems

1.29 Which of the following statements is false?
(a) The concepts of icons, menus and windows were originally developed by Xerox PARC.
(b) Windows is an open source operating system.
(c) The software that contains the core components of the operating system is called the kernel.
(d) Linux source code is available to the public for examination and modification.
ANS: (b) Windows is not an open source operating system; it is a proprietary operating system.

1.30 Which of the following is not a key organization in the open-source community?
(a) Apache.
(b) SourceForge.
(c) Firefox.
(d) Eclipse.
ANS: (c) Firefox (it's a web browser made by the open source organization Mozilla).

1.12 The Internet and the World Wide Web

1.31 An ancestor of today's *Internet* was _____.
(a) ARPAnet
(b) e-mail
(c) PHP
(d) TCP/IP
ANS: (a)

1.32 What is *bandwidth*?
(a) information carrying capacity
(b) response time

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(c) the set of networking protocols
(d) an error-control technique
ANS: (a)

1.33 The World Wide Web _____.
(a) was developed at roughly the same time as the Internet
(b) paved the way for the Internet
(c) was developed years after the Internet
(d) was designed for “stand-alone” computers
ANS: (c)

1.13 Some Key Software Development Terminology

1.34 _____ involves reworking programs to make them clearer and easier to maintain while preserving their correctness and functionality.
(a) Object-oriented programming
(b) Refactoring
(c) Agile software development
(d) LAMP
ANS: (b) Refactoring.

1.35 Which software product release category is "generally feature complete and supposedly bug free, and ready for use by the community?"
(a) Alpha.
(b) Beta.
(c) Release candidate.
(d) Continuous beta.
ANS: (c) Release candidate.

1.15 Keeping Up-to-Date with Information Technologies

(No questions.)

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