

Chapter 1 Introduction to Computers, Programs, and Java

Section 1.2 What is a Computer?

1. _____ is the physical aspect of the computer that can be seen.

- a. Hardware
- b. Software
- c. Operating system
- d. Application program

Key:a See the first paragraph in Section 1.2.

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Section 1.2.1 What is a Computer?

2. _____ is the brain of a computer.

- a. Hardware
- b. CPU
- c. Memory
- d. Disk

Key:b See the first paragraph in Section 1.2.1.

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3. The speed of the CPU may be measured in_____.

- a. megabytes
- b. gigabytes
- c. megahertz
- d. gigahertz

Key:cd See the third paragraph in Section 1.2.1. 1 megahertz equals 1 million pulses per second and 1 gigahertz is 1000 megahertz.

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Section 1.2.2 Bits and Bytes

4. Why do computers use zeros and ones?

- a. because combinations of zeros and ones can represent any numbers and characters.
- b. because digital devices have two stable states and it is natural to use one state for 0 and the other for 1.
- c. because binary numbers are simplest.
- d. because binary numbers are the bases upon which all other number systems are built.

Key:b See the second paragraph in Section 1.2.2.

#

5. One byte has_____bits.

- a. 4
- b. 8
- c. 12
- d. 16

Key:b See the third paragraph in Section 1.2.2.

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5. One gigabyte is approximately_____bytes.

- a. 1 million
- b. 10 million
- c. 1 billion
- d. 1 trillion

Key:c See the fifth paragraph in Section 1.2.2.

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Section 1.2.3 Memory

6. A program and its data must be moved into the computer's _____ before they can be executed by the CPU.

- a. memory
- b. hard disk
- c. CPU
- d. CD-ROM

Key:a See the first paragraph in Section 1.2.3.

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Section 1.2.4 Storage Devices

6. A computer's _____ is volatile; that is, any information stored in it is lost when the system's power is turned off.

- a. memory
- b. hard disk
- c. flash stick
- d. CD-ROM

Key:a See the first paragraph in Section 1.2.4.

#

6. Which of the following are storage devices?

- a. portable disk
- b. hard disk
- c. flash stick
- d. CD-ROM

Key:abcd See the second paragraph in Section 1.2.4.

#

Section 1.2.5 Input and Output Devices

7. The _____ specifies the number of pixels in horizontal and vertical dimensions of the display device.

- a. screen resolution
- b. pixel
- c. dot pitch
- d. monitor

Key:a See the third last paragraph in Section 1.2.5.

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Section 1.2.6 Communications Devices

7. _____ is a device to connect a computer to a local area network (LAN).

- a. Regular modem
- b. DSL
- c. Cable modem
- d. NIC

Key:d See the bullet items in Section 1.2.6.

#

Section 1.3 Program Languages

8. _____ are instructions to the computer.

- a. Hardware
- b. Software
- c. Programs
- d. Keyboards

Key:bc See the Key Point in Section 1.3.

#

9. Computer can execute the code in_____.

- a. machine language
- b. assembly language
- c. high-level language
- d. none of the above

Key:a See the first paragraph in Section 1.3.1.

#

10. _____ translates high-level language program into machine language program.

- a. An assembler
- b. A compiler
- c. CPU
- d. The operating system

Key:b See the first paragraph after Table 1.1 in Section 1.3.3.

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Section 1.4 Operating Systems

11. _____ is an operating system.

- a. Java
- b. C++
- c. Windows
- d. Visual Basic
- e. Ada

Key:c See the first paragraph in Section 1.4.

#

12. _____ is a program that runs on a computer to manage and control a computer's activities.

- a. Operating system
- b. Java
- c. Modem
- d. Interpreter
- e. Compiler

Key:a See the first paragraph in Section 1.4.

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Section 1.5 Java, World Wide Web, and Beyond

14. Due to security reasons, Java_____cannot run from a Web browser in the new version of Java.

- a. applications
- b. applets
- c. servlets
- d. Micro Edition programs

Key:b See the last paragraph in Section 1.5.

#

15. _____ is not an object-oriented programming language.

- a. Java
- b. C++
- c. C
- d. C#
- e. Python

Key:c See Table 1.1 in Section 1.3.1.

#

16. _____ is interpreted.

- a. Java
- b. C++
- c. C
- d. Ada
- e. Pascal

Key:a See the second paragraph in Section 1.5.

17. _____ is architecture-neutral.

- a. Java
- b. C++
- c. C
- d. Ada
- e. Pascal

Key:a See the second paragraph in Section 1.5.

Section 1.6 The Java Language Specification, API, JDK, and IDE

18. _____ is a technical definition of the language that includes the syntax and semantics of the Java programming language.

- a. Java language specification
- b. Java API
- c. Java JDK
- d. Java IDE

Key:a See the last paragraph in Section 1.6.

19. _____ contains predefined classes and interfaces for developing Java programs.

- a. Java language specification
- b. Java API
- c. Java JDK
- d. Java IDE

Key:b See the last paragraph in Section 1.6.

20. _____ consists of a set of separate programs for developing and testing Java programs, each of which is invoked from a command line.

- a. Java language specification
- b. Java API
- c. Java JDK
- d. Java IDE

Key:c See the last paragraph in Section 1.6.

21. _____ provides an integrated development environment (IDE) for rapidly developing Java programs. Editing, compiling, building, debugging, and online help are integrated in one graphical user interface.

- a. Java language specification
- b. Java API
- c. Java JDK
- d. Java IDE

Key:d See the last paragraph in Section 1.6.

Section 1.7 A Simple Java Program

22. The main method header is written as:

- a. `public static void main(string[] args)`
- b. `public static void Main(String[] args)`
- c. `public static void main(String[] args)`
- d. `public static main(String[] args)`
- e. `public void main(String[] args)`

Key:c In A, string should be spelled String with S in uppercase. In B, Main should be spelled main in lowercase. In D, the keyword void is missing. In E, the keyword static is missing. C is correct.

#

23. Which of the following statements is correct?

- a. Every line in a program must end with a semicolon.
- b. Every statement in a program must end with a semicolon.
- c. Every comment line must end with a semicolon.
- d. Every method must end with a semicolon.
- e. Every class must end with a semicolon.

Key:b Only statements need to be end with a semicolon.

#

24. Which of the following statements is correct to display Welcome to Java on the console?

- a. `System.out.println('Welcome to Java');`
- b. `System.out.println("Welcome to Java");`
- c. `System.println('Welcome to Java');`
- d. `System.out.println('Welcome to Java');`
- e. `System.out.println("Welcome to Java');`

Key:b In A, a string must be enclosed in double quotation marks. In C, a string must be enclosed in double quotation marks and also the .out is missing. In D, a string must be enclosed in double quotation marks on both sides. In E, a string must be enclosed in double quotation marks. B is correct.

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Section 1.8 Creating, Compiling, and Executing a Java Program

25. The JDK command to just compile a class (not run) in the file Test.java is

- a. `java Test`
- b. `java Test.java`
- c. `javac Test.java`
- d. `javac Test`
- e. `JAVAC Test.java`

Key:c In A, java is the command to run a program. In B, java is the command to run a program. In D, java is the command to run a program. In E, The command is case sensitive. C is correct.

#

26. Which JDK command is correct to run a Java application in ByteCode.class?

- a. `java ByteCode`
- b. `java ByteCode.class`
- c. `javac ByteCode.java`
- d. `javac ByteCode`
- e. `JAVAC ByteCode`

Key:a A is correct. In B, to compile, use only the class name, not including the extension. In C, javac is the command to compile a class, not to run a class. In D, javac is the command to compile a class, not to run a class. In E, the command is case sensitive and javac is the command to compile a class, not to run a class.

#

27. Java compiler translates Java source code into_____.

- a. Java bytecode

- b. machine code
- c. assembly code
- d. another high-level language code

Key: a Java bytecode is the end result of compiling a Java source file. Java bytecode is machine-independent and can be run on any platform.

#

28. _____ is a software that interprets Java bytecode.

- a. Java virtual machine
- b. Java compiler
- c. Java debugger
- d. Java API

Key: a Java virtual machine is a software that runs Java bytecode. Java compiler compiles Java source code into Java bytecode.

#

29. Suppose you define a Java class as follows, the source code should be stored in a file named_____.

```
public class Test {  
  
}
```

- a. Test.class
- b. Test.doc
- c. Test.txt
- d. Test.java
- e. Any name with extension .java

Key: d You have to name the class as ClassName.java. Here the class name is Test.

#

30. The extension name of a Java bytecode file is

- a. .java
- b. .obj
- c. .class
- d. .exe

Key: c .java is the Java source code file name and .class is the Java bytecode file name.

#

31. The extension name of a Java source code file is

- a. .java
- b. .obj
- c. .class
- d. .exe

Key: a .java is the Java source code file name and .class is the Java bytecode file name.

#

32. Which of the following lines is not a Java comment?

- a. /** comments */
- b. // comments
- c. -- comments
- d. /* comments */
- e. ** comments **

Key: c The text that begins with // in a line is known as a line comment and the text that is enclosed between /* and */ is known as a paragraph comment.

#

33. Which of the following are the reserved words?

- a. public
- b. static
- c. void
- d. class

Key:abcd These are all reserved words with specific meaning to the compiler.

#

34. Every statement in Java ends with_____.

- a. a semicolon (;)
- b. a comma (,)
- c. a period (.)
- d. an asterisk (*)

Key:a You have to tell the compiler where a statement ends using a semicolon.

#

35. A block is enclosed inside_____.

- a. parentheses
- b. braces
- c. brackets
- d. quotes

Key:b A block is enclosed inside a pair of opening and closing braces.

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Section 1.9 Programming Style and Documentation

36. Programming style is important, because_____.

- a. a program may not compile if it has a bad style
- b. good programming style can make a program run faster
- c. good programming style makes a program more readable
- d. good programming style helps reduce programming errors

Key:cd Bad style is a readability issue. The code will still compile. Programming style is a readability issue and it does not effect the performance of the code. D and C are correct.

#

37. Analyze the following code.

I:

```
public class Test {  
    public static void main(String[] args)  
    { System.out.println("Welcome to  
    Java!");  
    }  
}
```

II:

```
public class Test { public static void main(String[] args) {  
System.out.println("Welcome to Java!"); } }
```

- a. Both I and II can compile and run and display Welcome to Java, but the code in II has a better style than I.
- b. Only the code in I can compile and run and display Welcome to Java.
- c. Only the code in II can compile and run and display Welcome to Java.
- d. Both I and II can compile and run and display Welcome to Java, but the code in I has a better style than II.

Key:d Both I and II are the same except the format is different. Format is a readability issue only.

38. Which of the following code has the best style?

I:
public class Test {
public static void main(String[] args)
{ System.out.println("Welcome to Java!");
}
}

II:
public class Test {
public static void main(String[] args)
{ System.out.println("Welcome to Java!");
}
}

III:
public class Test {
public static void main(String[] args)
{ System.out.println("Welcome to Java!");
}
}

IV:
public class Test {
public static void main(String[] args)
{ System.out.println("Welcome to Java!");
}
}

- a. I
- b. II
- c. III
- d. IV

Key:d All the code will run fine, but not formatted correctly. Only the code in IV is formatted correctly.

Section 1.10 Programming Errors

39. If a program compiles fine, but it produces incorrect result, then the program suffers_____.

- a. a compile error
- b. a runtime error
- c. a logic error

Key:c If a program has a compile error, it will not run. When a program has a runtime error, it terminates abnormally. C is correct.

40. If you forget to put a closing quotation mark on a string, what kind of error will be raised?

- a. a compile error
- b. a runtime error
- c. a logic error

Key:a This is a syntax error, which will be detected by the compiler.