

***C++ Programming - An Object-Oriented
Approach 1st edition Forouzan Test Bank***

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Multiple Choice

Chapter One

1) The CPU is made of _____.

- a. ALU, control unit, and registers.
- b. ALU and secondary storage
- c. ALU and memory
- d. ALU and input/output systems

Answer: a

2) A keyboard is considered as _____ device.

- a. an input
- b. an output
- c. both an input and output
- d. neither an input nor an output

Answer: a

3) A monitor is considered as _____ device.

- a. an input
- b. an output
- c. both an input and output
- d. neither an input nor an output

Answer: b

4) Primary memory is used to store _____.

- a. only operating system
- b. only programs
- c. only data
- d. operating system, programs, and data

Answer: d

- 5) When the computer is turned off, _____ in the memory.
- a. the programs are erased but the data remains
 - b. data are erased but the programs remains
 - c. neither the programs nor data are erased
 - d. both the program and the data are erased

Answer: d

A machine language is made of _____.

- a. 0s and 1s
- b. symbols
- c. either a or b
- d. both a and b

Answer: a

6) FORTRAN is an example of a_____.

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

Answer: c

7) The C++ is considered as a _____.

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

Answer: c

8) A functional paradigm uses _____.

- a. mathematical functions.

- b. classes and objects
- c. logical facts and rules
- d. all of the above

Answer: a

9) A logical paradigm uses _____.

- a. mathematical functions.
- b. classes and objects
- c. logical facts and rules
- d. all of the above

Answer: c

10) The C++ language is considered as a _____ paradigm.

- a. logical
- b. functional
- c. combination of procedural and object-oriented
- d. combination of logical and functional

Answer: c

11) The Java language is considered as _____ paradigm.

- a. logical
- b. functional
- c. object-oriented
- d. combination of logical and functional

Answer: c

12) The first step in program design is to _____.

- a. understand the problem
- b. develop the solution
- c. define classes

d. write the code

Answer: a

13) The second step in program design is to _____.

a. understand the problem

b. develop the solution

c. test the program

d. run the program

Answer: b

14) An algorithm is a set of _____.

a. specifications

b. objects

c. logical steps to solve the problem

d. instructions

Answer: c

15) The first steps in program development is to _____ the program.

a. write and edit

b. compile

c. test

d. run

Answer: d

16) A standard tool for designing, specifying, and documenting many aspects of a computing system is _____.

a. Unified Modeling Language

b. Standard System Development Language

c. System Flow Chart

d. System Compiler

Answer: a

17) The design paradigm that views a program as a black box that maps a list of inputs to a list of outputs is the _____.

- a. procedural paradigm
- b. object-oriented paradigm
- c. logic paradigm
- d. functional paradigm

Answer: d

18) Which of the following is a step in program design?

- a. select the program language
- b. develop the solution
- c. write the program
- d. test the program

Answer: b

19) The program that translates the source file into machine language is the _____.

- a. translator
- b. loader
- c. compiler
- d. linker

Answer: c

Chapter Two

1) In C++, an identifier's name can start with _____.

- a. a letter
- b. a digit
- c. an underscore

- d. both a and c

Answer: d

2) A preprocessor directive is a command to _____ in our program.

- a. include some predefined code
- b. include some comments
- c. show the start of the program
- d. show the end of the program

Answer: a

3) A preprocessor directive needs _____ at the end of the line.

- a. a dot
- b. a colon
- c. a semicolon
- d. nothing

Answer: d

4) Each C++ program needs to have a function named _____.

- a. start
- b. main
- c. end
- d. program

Answer: b

5) To terminate a command line in C++, we need a _____.

- a. dot
- b. colon
- c. semicolon
- d. hyphen

Answer: c

6) In a C++ program, the body of a function needs to be enclosed inside two _____.

- a. parentheses
- b. braces
- c. exclamation marks
- d. dots

Answer: b

7) In a C++ program, if the main function has terminated successfully, it returns _____ to the running environment.

- a. 0
- b. 1
- c. -1
- d. nothing

Answer: a

8) In a C++ program, to avoid mentioning the namespace (last name) of an object, we add _____.

- a. include namespace
- b. using namespace
- c. include std
- d. none of the above

Answer: b

9) In a C++ program, a line comment _____.

- a. starts with //
- b. ends with //
- c. starts with // and ends with \\
- d. starts with \\ and ends with //

Answer: a

10) In a C++ program, a block comment _____.

- a. starts with /*
- b. ends with /*
- c. starts with /* and ends with */
- d. starts with */ and ends with /*

Answer: c

11) In a C++ program, a *variable* is a memory chunk that needs to have _____.

- a. only a name
- b. only a type
- c. neither a name nor a type
- d. both a name and a type

Answer: d

12) In a C++ program, the *cin* object is normally associated with the _____.

- a. the keyboard
- b. the monitor
- c. a file
- d. the memory

Answer: a

13) In a C++ program, the *cout* object is normally associated with the _____.

- a. the keyboard
- b. the monitor
- c. a file
- d. the memory

Answer: b

14) Which of the following is not a valid user-defined identifier?

- a. Z
- b. x5
- c. 5x

d. `_total`

Answer: c

15) To create a variable named *num* of type integer, we use _____.

a. `int num;`

b. `num int;`

c. `num = int;`

d. `int = num;`

Answer: a

16) The statement `x = 3` in C++ means to_____.

a. check to see if x equals 3

b. store 3 in variable x

c. increment value of x by 3

d. decrement the value of x by 3

Answer: b

17) Which of the following statements in C++ is valid?

a. `x = 2;`

b. `2 = x;`

c. `x + 2 = 5;`

d. `2 = x + 5;`

Answer: a

18) The statement `x = y` in C++ means to_____.

a. to copy value of variable x into variable y

b. to copy value of variable y into variable x

c. to check if the variable of x is the same as variable y

d. to make variable x and y to be the same memory chunk

Answer: b

19) If x is 4 and y is 5, what is the value of x after the statement $y = x + 2$.

- a. 4
- b. 6
- c. unknown
- d. 2

Answer: b

In C++, a token can be _____.

- a. a literal
- b. an identifier
- c. a symbol
- d. any of the above

Answer: d

20) In C++, which of the following can be an identifier?

- a. 3num
- b. -num
- c. num1
- d. 2num

Answer: c

21) In C++, a keyword is an identifier that _____.

- a. cannot be changed
- b. cannot be used to define a variable
- c. cannot be redefined
- d. all of the above

Answer: d

22) In C++, a literal is _____.

- a. an identifier

True/False Questions

Chapter One

- TF-1.** A computer system is made of two major components: hardware and software.
- TF-2.** The hardware components of the computer system consist of the input system, output system, and secondary storage.
- TF-3.** The ALU is made of the CPU and primary memory.
- TF-4.** Computer software can be divided into two broad categories: system software and application software.
- TF-5.** System support software includes system utilities and other operating services.
- TF-6.** Computer languages can be divided into three categories: machine languages, symbolic languages, and high-level languages.
- TF-7.** In a procedural paradigm, each command changes the state of the memory.
- TF-8.** In a procedural paradigm, there is a direct relationship between the set of procedures and the set of data packages.
- TF-9.** C++ is a language based on the logic paradigm.
- TF-10.** C++ can be used both as a procedural and an object-oriented paradigm.

Chapter Two

- TF-1.** A variable is a location in memory that holds a value, and its value can be changed during the execution of a program.
- TF-2.** A constant is a location in memory that holds a value and its value cannot be changed during the execution of a program.
- TF-3.** An integer literal can be presented as fixed or scientific format.
- TF-4.** A character literal is enclosed between two single quotes.
- TF-5.** A string literal is enclosed between two single quotes.
- TF-6.** A floating-point type is a value with no fraction.
- TF-7.** The floating-point type defines three data types: *float*, *double*, and *long double*.
- TF-8.** A variable must have a name, but not a type.

Review Questions

Chapter One

- RQ-1.** List and briefly describe the two major components of a computer system.
- RQ-2.** Computer hardware is made up of five parts. List and briefly describe them.
- RQ-3.** Explain the difference between primary memory and secondary storage.
- RQ-4.** Explain the reason that we need secondary storage in addition to primary memory.
- RQ-5.** List and explain the duties of three parts of a CPU.
- RQ-6.** Describe the two major categories of software.
- RQ-7.** Describe the purpose of an operating system.
- RQ-8.** Give at least two examples of system software.
- RQ-9.** Give at least two examples of application software.
- RQ-10.** List three types of computer languages described in the text.
- RQ-11.** Describe the primary differences between symbolic and high-level languages.
- RQ-12.** Describe the difference between a procedural and an object-oriented language.
- RQ-13.** List at least three languages that are designed to use a procedural paradigm.
- RQ-14.** List at least three languages that are designed to use an object-oriented language.
- RQ-15.** List and explain the steps that a programmer follows to develop a program.
- RQ-16.** Distinguish between a compiler and a linker.

Chapter Two

- RQ-1.** Define the two ways we can include comments in a C++ program.
- RQ-2.** What are the two characteristics of a variable?
- RQ-3.** What is the purpose of a variable definition?
- RQ-4.** What is wrong with the following variable definition?

```
int return;
```

RQ-5. What is the error in each of the following lines?

```
cout >> x;  
cin >> 20;
```

RQ-6. What is the difference between the following two lines?

```
char letter = 67;  
char letter = 'C';
```

RQ-7. Using Appendix A, find what is stored in variable x and y?

```
char x = 101;  
char y = 104;
```

RQ-8. Fill the blank. Every C++ program needs to have a function named _____.

RQ-9. What is wrong with the following lines of code?

```
cin << "Hi";  
cout >> x;
```

RQ-10. Show a C++ definition that defines x and y as variables of type long integers.

RQ-11. Show a C++ definition that defines x and y as variables of type long floating-point.

RQ-12. What is wrong with the following definition?

```
void x;
```

RQ-13. Show a line in C++ that stores the value of the variable x into the variable y.

RQ-14. Show a line in C++ that stores the value of the variable y into the variable x.

RQ-15. What is the effect of the following two lines in C++ assuming *first* and *second* are variables with integer 20 and 30 stored in them.

```
first = second;  
second = first;
```

RQ-16. Are the two identifiers *salary* and *Salary* the same in C++?

RQ-17. What is wrong with the following assignment in C++?

```
120 = x;
```

RQ-18. Which of the following are *keywords* in C++?

```
integer    int    long int    return    include    iostream    string
```

RQ-19. What is the difference between the values 'A' and "A" in C++?

RQ-20. What is the difference between a C-string and a C++ string?

RQ-21. Which of the following variables are correctly defined?

```
char letter = 'A';  
int first;  
double average = 8.5;
```

RQ-22. Which of the following variables are correctly defined?

```
double average = 3;  
int first;  
double average, tax = 8.5;
```

RQ-23. Declare two variables of type *int*, two of type *float*, and three of type *double*.

RQ-24. Declare a string object that holds the string literal "Hello friends".

RQ-25. Declare a sting object that concatenates a first name and a last name.

Chapter Three

RQ-1. Define an expression.

RQ-2. What is the return value of an expression?

RQ-3. What is the side-effect of an expression?

RQ-4. Does an expression need to have a side-effect?

RQ-5. What is the number of operands in a unary expression?

RQ-6. What is the number of operands in a multiplicative expression?