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Chapter 2: Basic Elements of C++

TRUE/FALSE

1. In C++, reserved words are the same as predefined identifiers.

ANS: F PTS: 1 REF: 36

2. The maximum number of significant digits in values of the `double` type is 15.

ANS: T PTS: 1 REF: 42

3. The maximum number of significant digits in `float` values is up to 6 or 7.

ANS: T PTS: 1 REF: 42

4. An operator that has only one operand is called a unique operator.

ANS: F PTS: 1 REF: 45

5. If a C++ arithmetic expression has no parentheses, operators are evaluated from left to right.

ANS: T PTS: 1 REF: 46

6. A mixed arithmetic expression contains all operands of the same type.

ANS: F PTS: 1 REF: 49

7. Suppose `a = 5`. After the execution of the statement `++a`; the value of `a` is 6.

ANS: T PTS: 1 REF: 70

8. The escape sequence `\r` moves the insertion point to the beginning of the next line.

ANS: F PTS: 1 REF: 78

9. A comma is also called a statement terminator.

ANS: F PTS: 1 REF: 90

10. Suppose that `sum` is an `int` variable. The statement `sum += 7;` is equivalent to the statement `sum = sum + 7;`

ANS: T PTS: 1 REF: 95

MULTIPLE CHOICE

1. The ____ rules of a programming language tell you which statements are legal, or accepted by the programming language.
- | | |
|-------------|----------------|
| a. semantic | c. syntax |
| b. logical | d. grammatical |

ANS: C PTS: 1 REF: 34

2. Which of the following is a reserved word in C++?
- a. char
 - b. Char
 - c. CHAR
 - d. character

ANS: A PTS: 1 REF: 36

3. Which of the following is a legal identifier?
- a. program!
 - b. program_1
 - c. 1program
 - d. program 1

ANS: B PTS: 1 REF: 36

4. ____ is a valid int value.
- a. 46,259
 - b. 46259
 - c. 462.59
 - d. -32.00

ANS: B PTS: 1 REF: 39-40

5. ____ is a valid char value.
- a. -129
 - b. 'A'
 - c. 128
 - d. 129

ANS: B PTS: 1 REF: 40

6. An example of a floating point data type is ____.
- a. int
 - b. char
 - c. double
 - d. short

ANS: C PTS: 1 REF: 41

7. The memory allocated for a float value is ____ bytes.
- a. two
 - b. four
 - c. eight
 - d. sixteen

ANS: B PTS: 1 REF: 42

8. The value of the expression $33/10$, assuming both values are integral data types, is ____.
- a. 0.3
 - b. 3
 - c. 3.0
 - d. 3.3

ANS: B PTS: 1 REF: 43-44

9. The value of the expression $17 \% 7$ is ____.
- a. 1
 - b. 2
 - c. 3
 - d. 4

ANS: C PTS: 1 REF: 43-44

10. The expression `static_cast<int>(9.9)` evaluates to ____.
- a. 9
 - b. 10
 - c. 9.9
 - d. 9.0

ANS: A PTS: 1 REF: 51

11. The expression `static_cast<int>(6.9) + static_cast<int>(7.9)` evaluates to ____.
- a. 13
 - b. 14
 - c. 14.8
 - d. 15

ANS: A PTS: 1 REF: 51

12. The length of the string "computer science" is ____.
- a. 14
 - b. 15
 - c. 16
 - d. 18

ANS: C PTS: 1 REF: 54

13. In a C++ program, one and two are double variables and input values are 10.5 and 30.6. After the statement `cin >> one >> two;` executes, ____.
- a. one = 10.5, two = 10.5
 - b. one = 10.5, two = 30.6
 - c. one = 30.6, two = 30.6
 - d. one = 11, two = 31

ANS: B PTS: 1 REF: 64

14. Suppose that count is an int variable and `count = 1`. After the statement `count++;` executes, the value of count is ____.
- a. 1
 - b. 2
 - c. 3
 - d. 4

ANS: B PTS: 1 REF: 70

15. Suppose that alpha and beta are int variables. The statement `alpha = --beta;` is equivalent to the statement(s) ____.
- a. `alpha = 1 - beta;`
 - b. `alpha = beta - 1;`
 - c. `beta = beta - 1;`
`alpha = beta;`
 - d. `alpha = beta;`
`beta = beta - 1;`

ANS: C PTS: 1 REF: 70-71

16. Suppose that alpha and beta are int variables. The statement `alpha = beta--;` is equivalent to the statement(s) ____.
- a. `alpha = 1 - beta;`
 - b. `alpha = beta - 1;`
 - c. `beta = beta - 1;`
`alpha = beta;`
 - d. `alpha = beta;`
`beta = beta - 1;`

ANS: D PTS: 1 REF: 70-71

17. Suppose that alpha and beta are int variables. The statement `alpha = beta++;` is equivalent to the statement(s) ____.
- a. `alpha = 1 + beta;`
 - b. `alpha = alpha + beta;`
 - c. `alpha = beta;`
`beta = beta + 1;`
 - d. `beta = beta + 1;`

```
alpha = beta;
```

ANS: C PTS: 1 REF: 70-71

18. Suppose that alpha and beta are int variables. The statement `alpha = ++beta;` is equivalent to the statement(s) ____.
- a. `beta = beta + 1;`
`alpha = beta;`
 - b. `alpha = beta;`
`beta = beta + 1;`
 - c. `alpha = alpha + beta;`
 - d. `alpha = beta + 1;`

ANS: A PTS: 1 REF: 70-71

19. Choose the output of the following C++ statement:
`cout << "Sunny " << '\n' << "Day " << endl;`
- a. Sunny \nDay
 - b. Sunny \nDay endl
 - c. Sunn
y
Day
 - d. Sunny
\n Day

ANS: C PTS: 1 REF: 73

20. Which of the following is the newline character?
- a. `\r`
 - b. `\n`
 - c. `\l`
 - d. `\b`

ANS: B PTS: 1 REF: 73

21. Consider the following code.

```
// Insertion Point 1

using namespace std;
const float PI = 3.14;

int main()
{
    //Insertion Point 2

    float r = 2.0;
    float area;
    area = PI * r * r;

    cout << "Area = " << area <<endl;
    return 0;
}
// Insertion Point 3
```

In this code, where does the include statement belong?

- a. Insertion Point 1
- b. Insertion Point 2
- c. Insertion Point 3
- d. Anywhere in the program

ANS: A PTS: 1 REF: 80

22. ____ are executable statements that inform the user what to do.
- a. Variables
 - b. Prompt lines
 - c. Named constants
 - d. Expressions

ANS: B PTS: 1 REF: 91

23. The declaration `int a, b, c;` is equivalent to which of the following?
- a. `inta , b, c;`
 - b. `int a,b,c;`
 - c. `int abc;`
 - d. `int a b c;`

ANS: B PTS: 1 REF: 92

24. Suppose that `alpha` and `beta` are `int` variables and `alpha = 5` and `beta = 10`. After the statement `alpha *= beta;` executes, ____.
- a. `alpha = 5`
 - b. `alpha = 10`
 - c. `alpha = 50`
 - d. `alpha = 50.0`

ANS: C PTS: 1 REF: 94

25. Suppose that `sum` and `num` are `int` variables and `sum = 5` and `num = 10`. After the statement `sum += num` executes, ____.
- a. `sum = 0`
 - b. `sum = 5`
 - c. `sum = 10`
 - d. `sum = 15`

ANS: D PTS: 1 REF: 95

COMPLETION

1. _____ is the process of planning and creating a program.

ANS:
Programming
programming

PTS: 1 REF: 28

2. A(n) _____ is a memory location whose contents can be changed. ANS: variable

PTS: 1 REF: 33

3. A(n) _____ is a collection of statements, and when it is activated, or executed, it accomplishes something.

ANS:
subprogram
sub program
sub-program
function
modlue

PTS: 1 REF: 34

4. _____ functions are those that have already been written and are provided as part of the system.

ANS:
Predefined
predefined
Standard
standard

PTS: 1 REF: 34

5. _____ rules determine the meaning of instructions.

ANS:
Semantic
semantic

PTS: 1 REF: 34

6. _____ can be used to identify the authors of the program, give the date when the program is written or modified, give a brief explanation of the program, and explain the meaning of key statements in a program.

ANS:
Comments
comments

PTS: 1 REF: 34

7. The smallest individual unit of a program written in any language is called a(n) _____.

ANS: token

PTS: 1 REF: 35

8. In a C++ program, _____ are used to separate special symbols, reserved words, and identifiers.

ANS:
whitespaces
whitespace
white spaces
white space

PTS: 1 REF: 37

9. The _____ type is C++ 's method for allowing programmers to create their own simple data types.

ANS: enumeration

PTS: 1 REF: 38

10. The memory space for a(n) _____ data value is 64 bytes.

ANS: long long

PTS: 1 REF: 39

11. The maximum number of significant digits is called the

_____. ANS: precision

PTS: 1 REF: 42

12. When a value of one data type is automatically changed to another data type, a(n) _____ type coercion is said to have occurred.

ANS: implicit

PTS: 1 REF: 51

13. A(n) _____ is a sequence of zero or more characters. ANS: string

PTS: 1 REF: 53

14. In C++, you can use a(n) _____ to instruct a program to mark those memory locations in which data is fixed throughout program execution.

ANS:
named constant
constant

PTS: 1 REF: 55

15. A data type is called _____ if the variable or named constant of that type can store only one value at a time.

ANS: simple

PTS: 1 REF: 57