

Name: _____

Working on the review questions will help you prepare for the test.

1. (5 points) True or False? Every C++ program must have a function named main.
 - A. True
 - B. False
2. (5 points) True or False? A C++ identifier cannot start with a digit.
 - A. True
 - B. False
3. (5 points) True or False? The C++ compiler considers the identifier `CanOfWorms` to be the same as the identifier `canofworms`.
 - A. True
 - B. False
4. (5 points) True or False? Some C++ reserved words can also be used as programmer-defined identifiers.
 - A. True
 - B. False
5. (5 points) True or False? If a program compiles successfully, it is guaranteed to execute correctly.
 - A. True
 - B. False
6. (5 points) Which of the following statements about the C++ main function is false?
 - A. Every program must have a function named main.
 - B. Program execution begins with the first executable statement in the main function.
 - C. The main function must call (invoke) at least one other function.
 - D. The word `int` in the function heading means that the main function returns an integer value (to the operating system).
7. (5 points) Which one of the following is not a valid identifier in C++?
 - A. `Hi_There`
 - B. `top40`
 - C. `UpAnDdOwN`
 - D. `3BlindMice`
 - E. `CAPS`
8. (5 points) Which of the following statements prints `HappyBirthday` on one output line?
 - A. `cout << "Happy" << endl; cout << "Birthday" << endl;`

- B. `cout << "Happy"; cout << "Birthday" << endl;`
 - C. `cout << "HappyBirthday" << endl;`
 - D. b and c above
 - E. a, b, and c above
9. (5 points) A programming language is said to be _____ if it considers uppercase letters to be different from lowercase letters.
10. (5 points) In C++, subprograms are referred to as _____ .
11. (5 points) True or False? In a C++ expression, all additions are performed before any subtractions.
- A. True
 - B. False
12. (5 points) True or False? In C++, the value of the expression $3 + 2 * 6$ is 15
- A. True
 - B. False
13. (5 points) True or False? To use a C++ library function, you must use an `#include` directive to include the appropriate header file.
- A. True
 - B. False
14. (5 points) Among the C++ operators `+`, `-`, `*`, `/`, and `%`, which ones have the lowest precedence?
- A. `+` and `-`
 - B. `*` and `/`
 - C. `*`, `/`, and `%`
 - D. `+`, `-`, and `%`
 - E. `+`, `-`, and `*`
15. (5 points) The value of the C++ expression $3 / 4 * 5$ is:
- A. 0.0
 - B. 0
 - C. 3.75
 - D. 3
 - E. 0.15
16. (5 points) Assuming all variables are of type float, the C++ expression for $(a + b) c / d + e$ is:
- A. `a + b * c / d + e`
 - B. `(a + b) * c / d + e`

- C. $(a + b) * c / (d + e)$
D. $(a + b * c) / d + e$
E. $(a + b) c / (d + e)$
17. (5 points) The value of the C++ expression $11 + 22 \% 4$ is:
A. 13
B. 1
C. 8
D. 16
E. none of the above
18. (5 points) Given that `x` is a float variable and `num` is an int variable containing the value 38, what will `x` contain after execution of the following statement:
- ```
x = num / 4 + 3.0
```
- A. 12.5  
B. 13  
C. 12  
D. 12.0  
E. nothing; a compile-time error occurs
19. (5 points) If the int variables `int1` and `int2` contain the values 4 and 5, respectively, then the value of the expression `float(int1 / int2)` is:  
A. 0.8  
B. 0  
C. 0.0  
D. 1.0  
E. 1
20. (5 points) Which expression does not correctly compute the mathematical average of the int variables `int1`, `int2`, and `int3`?  
A. `float(int1 + int2 + int3) / 3.0`  
B. `(int1 + int2 + int3) / 3.0`  
C. `float((int1 + int2 + int3) / 3)`  
D. `float(int1 + int2 + int3) / 3`  
E. b and d above
21. (5 points) What is the output of the following program fragment?

```
age = 29;
cout << "Are you" << age << "years old?" << endl;
```

- A. Are you29years old?
  - B. Are you 29 years old?
  - C. Are you29 years old?
  - D. Are you 29years old?
  - E. Are you age years old?
22. (5 points) What is the output of the following program fragment? (alpha and beta are int variables.)

```
alpha = 2463;
beta = 72;
cout << "123456789" << endl
<< setw(5) << alpha << endl
<< setw(5) << beta << endl;
```

- A. 123456789  
24630  
72000
  - B. 123456789  
└2463  
└72
  - C. 123456789  
└2463  
└└└72
  - D. 123456789  
└└└└└2463  
└└└└└72
  - E. none of the above
23. (5 points) What is the output of the following program fragment? (x is a float variable.)

```
x = 25.6284;
cout << "**" << setw(6) << setprecision(1) << x << endl;
```

- A. \*\*25.6284
  - B. \*\*└25.628400
  - C. \*\*25.628
  - D. \*\*└└25.6
  - E. \*\*└└└└25.6
24. (5 points) Formatting a program in a consistent, readable style is valuable to
- A. the person who writes the program.
  - B. other people who need to understand and work with the program.
  - C. the C++ compiler.

D. a and b above

E. a, b, and c above

25. (5 points) Given the following program fragment, determine the value of the following expression.

```
int one = 4;
int two = 17;
```

Expression: `one + two % one`

26. (5 points) Write an assignment statement to calculate the sum of the numbers from 1 through `n` using Gauss's formula:

$$sum = \frac{n(n+1)}{2}$$

27. (5 points) Write an assignment statement to calculate the root of quadratic equation  $ax^2 + bx + c = 0$  using the formula:

$$x = \frac{-b + \sqrt{b^2 - 4ac}}{2a}$$