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| Name: _____<br>(50 minutes) | CSCI 2490 C++ Programming<br>Armstrong Atlantic State University<br>Instructor: Y. Daniel Liang |
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**Part I: Multiple Choice Questions:**

1. C
2. B
3. A
4. C
5. D
6. A
7. D
8. D
9. A
10. D
11. B
12. BC
13. ADE
14. ABC
15. B

**Part II: Find and correct errors in the following code:****(5 pts)**

```
#include <iostream>
using namespace std;

int main()
{
    int j = i + 1;
    int k = 5.5;

    cout << "j is " << j << "and
    k is " << k;

    return 0;
}
```

**Part III: Show the output of the following code:****(5 pts)**

```
x1 is 0

x2 is 2

i is 2

j is 5

k is 12
```

y is 6

z is 7

f is 0

#### Part IV:

```
#include <iostream>
#include <cmath>
using namespace std;

int main()
{
    // Enter the first point with two double values
    cout << "Enter x1 and y1: ";
    double x1, y1;
    cin >> x1 >> y1;

    // Enter the second point with two double values
    cout << "Enter x2 and y2: ";
    double x2, y2;
    cin >> x2 >> y2;

    // Compute the distance
    double distance = pow((x1 - x2) * (x1 - x2) +
        (y1 - y2) * (y1 - y2), 0.5);

    cout << "The distance of the two points is " << distance;

    return 0;
}
```

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(Open book test, you can only bring the textbook)

### Part I: Multiple Choice Questions:

5 quizzes for Chapter 1

1 Why do computers use zeros and ones?

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

2 A block is enclosed inside \_\_\_\_\_.

- A. Brackets
- B. Braces
- C. Parentheses
- D. Quotes

3 The following program displays \_\_\_\_\_.

```
#include <iostream>
using namespace std;
```

```
int main()
{
    cout << "A";
    cout << "B";
```

```
    return 0;
```

```
}
```

- A. AB
- B. BA
- C. B A
- D. A B

4 \_\_\_\_\_ is the brain of a computer.

- A. Hardware
- B. Memory
- C. CPU
- D. Disk

5 The extension name of a C++ source code file is

- A. .class
- B. .java
- C. .exe
- D. .cpp
- E. .obj

10 quizzes for Chapter 2

6 To improve readability and maintainability, you should declare \_\_\_\_\_ instead of using literal values such as 3.14159.

- A. constants
- B. variables
- C. classes
- D. functions

7 To assign a value 1 to variable x, you write

- A. `x := 1;`
- B. `1 := x;`
- C. `1 = x;`
- D. `x = 1;`
- E. `x == 1;`

8 The ASCII of 'a' is 97. What is the ASCII for 'c'?

- A. 97
- B. 98
- C. 96
- D. 99

9 Which of the following statement prints `smith\exam1\test.txt`?

- A. `cout << "smith\\exam1\\test.txt";`
- B. `cout << "smith"\exam1\test.txt";`
- C. `cout << "smith\"exam1\"test.txt";`
- D. `cout << "smith\exam1\test.txt";`

10 A character is stored in \_\_\_\_\_.

- A. three bytes
- B. two bytes
- C. four bytes
- D. one byte

11 Suppose x is 1. What is x after `x -= 1`?

- A. -1
- B. 0
- C. 1
- D. 2
- E. -2

12 Programming style is important, because \_\_\_\_\_.

- A. a program may not compile if it has a bad style
- B. good programming style makes a program more readable
- C. good programming style helps reduce programming errors
- D. good programming style can make a program run faster

13 To add a value 1 to variable x, you write

- A. `x = x + 1;`
- B. `x := 1;`
- C. `1 + x = x;`
- D. `x += 1;`
- E. `x = 1 + x;`

14 Which of the following expression will yield 0.5?

- A. `1.0 / 2`
- B. `1 / 2.0`
- C. `(double) 1 / 2`
- D. `(double) (1 / 2)`
- E. `1 / 2`

15 Note that the ASCII for character A is 65. The expression `'A' + 1` evaluates to \_\_\_\_\_.

- A. B
- B. 66
- C. A1
- D. Illegal expression

Part II: Find and correct errors in the following code:

(5 pts)

```
#include <iostream>
using namespace std;

int main()
{
    int j = i + 1;
    int k = 5.5;

    cout << "j is " << j << "and
    k is " << k;
```

```
    return 0;
}
```

Part III: Show the output of the following code:  
(8 pts)

```
#include <iostream>
using namespace std;

int main()
{
    int x1, x2, i, j, k, y, z;
    float f;
    x1 = 1;
    x2 = 1;
    y = 5 + x1--;
    z = 5 + ++x2;
    i = 6 % 4;
    j = 1;
    j += j + 3;
    k = 25 / 2;
    f = (float)((2 / 5) * k);

    cout << "x1 is " << x1 << endl;
    cout << "x2 is " << x2 << endl;
    cout << "i is " << i << endl;
    cout << "j is " << j << endl;
    cout << "k is " << k << endl;
    cout << "y is " << y << endl;
    cout << "z is " << z << endl;
    cout << "f is " << f;

    return 0;
}
```

Part IV: (10 pts) Write a program that prompts the user to enter two points (x1, y1) and (x2, y2) and displays their distances. The formula for computing the distance is

$\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ . Note you can use pow(a, 0.5) to compute  $\sqrt{a}$ . Here is a sample run.

### <Output>

```
Enter x1 and y1: 1.5 -3.4
Enter x2 and y2: 4 5
The distance of the two points is 8.764131445842194
```

### <End Output>