

1- Write a single C++ statement that:

A. Calculates the sum of the two integers 11 and 12 and outputs the sum to the console.

B. Outputs to the console a floating point number f1 in scientific format with 5 decimal points?

C. Outputs to the console the value of a float identifier f1 after converting its value to an integer and then to a character.

D. Open input file called prog. Out on floppy disk in drive A:

E. Is a compound arithmetic statement which is equivalent to $a = a \% b / 2$

2. Write and run a program prints the minimum of the three integers entered by the user.

3. What is the output of the following program:

```
Int main ()
```

```
Int a, b;
```

```
Float x, y, z.
```

```
Cout << fixed << showpoint,
```

```
A = (5 + 8 / 3-2*3) % 2.
```

```
B = ++ a + static cast <int> (15/2)* 2.
```

```
X = a + b ++ /static - cast <float> (2).
```

```
Cout << setprecision (2) <<x << endl
```

```
Y = x -3 /2 +3. 5,
```

```
Cout <<
```

```
Z = 2.
```

```
Z + = static- cast < int> 5.5+ static - cast <double> (10) / 2);
```

```
Cout << t<< z.
```

```
Return 0,
```

4. Correct the following program, find the sum from one to five, add it to a value entered from the keyboard, Put your corrections in the corresponding block.

```
# include < iostream>.
```

```
Using std namespace.
```

```
Void main ( )
```

```
Integer count = 0.
```

```
Double sum = 0.
```

```
Cin << num.
```

```
Sum = = 1 + 3 + 4 + 5.
```

```
Count = sum + num.
```

```
Return 1,  
}
```

True/false

Indicate whether the sentence or statement is true or false, place your answer in the space next to the question number.

1. A user- defined value returning function with four parameters can only be called four times in a program.
2. A value returning function can return two values via the return statement.
3. A c++ program with user- defined functions wit no prototypes will terminate in an error.
4. The return statement `return x + 1`, first return the value of x and then increments the value of x.
5. The following function heading in a C++ program will cause a syntax error because the function return type is int and so the first parameter, u must of the type int.

`Int func Alpha (float u, char v, int g).`

6. Given the function prototype.

`Int test Beta (int 5, char, v, int y).`

The following statement is legal.

`Cout << testBeta (int 5, char, A, int 2).`

7. Suppose $x = 6.7$ the output of the statement `cout << static- cast Mint> (x + 0.5)`, is 7.0.
8. If $a = 4$ and $b = 3$ then after the statement `a = b`, the value of b is erased.
9. The following two statements are equivalent.
 - a. $x * = y + 2.$
 - b. $x = X * y + 2.$

10. The output of the C++ code.

Num = 20.

If (num <= 10).

Cout << num is between 0 and 10".

Else.

Cout << num is greater 0 and 10.

Cout << num is greater than 10.

Is: num is greater than 10.

11. It is possible that the body of a while loop may not execute at all, but the body of a for loop executes at least once.

12. Parameters allow the programmer to use different values each time the function is called.

Multiple choice (1 point each).

Identify the letter of the choice that best competes the statement or answers the questions. Place your answer in the space next to the question number.

13. What is the value of counter after the following statements executes>

Counter = 0.

While (counter <= 50)

Counter = counter + 3.

a. 48.

b. 50.

c. 51.

d. None of these.

14. Suppose sun, num and j are int variables, and the input is: 4, 7, 12, 9, -1

What is the output of the following code?

```
Cin >> sum';
```

```
Cin >> num.
```

```
For (j = 1, J, <= 3, J++).
```

```
Cin >> num.
```

```
Sum = sum + sum.
```

```
Cout << sum<< endl.
```

a. 24.

b. 25.

c. 41.

c. 41.

d. 42.

15. Suppose input is: 5 3 4 - 6 8 what is the value printed by the following C++ code?

```
Int sum = 0, int num, int J:
```

```
For (j + 1, J <= 5, J++).
```

```
Cin >> num,
```

```
If (num < 0 ) continue.
```

```
Sum = sum + num.
```

```
Count << sum << endl.
```

a. 20.

b. 14.

c. 12.

d. None of these.

16. what is the output of the following C++ code?

```
Int x = 7, bool found = false.
```

```
Do
```

```
Cout << x << ""
```

```
If (x = < 2) found = true.
```

```
Else x = x - 5.
```

```
} while (x > 0 & & found).
```

```
Cout << endl.
```

- a. 7.
- b. 27.
- c. 72.
- d. None of these.

17. Given the following function

```
Int mystery (int u, int v).
```

```
Int a;
```

```
A = u - v.
```

```
U = a.
```

```
V = u,
```

```
Return u + v.
```

What is the output of the following statement?

```
Cout << mystery (9, 7).
```

- a. 2
- b. 4
- c. 7.
- d. 9.

18. given the following function.

```
Int strange (int x, int y).
```

```
{  
If (x > y).  
Return x + y,  
Return x + y.  
Else  
Return x - y.  
}
```

What is the output of the following statement?

```
Cout << strange (4, 5),
```

- a. 1.
- b. - 1.
- c. 9.
- d. None of these.

19. Given the following function.

```
Int next (int x )  
{  
Return (x + 1);  
}
```

What is the output of the following statement?

```
Cout << next (next (5))'
```

- a. 5
- b. 6
- c. 7.
- d. none of these.

20. The value of the expression 44/5.0 is

- a. 8.
- b. 8.0

c. 8.8.

d. none of these.

21. the value of the expression $26 - 14 \% 3 + 1$ is:

a. 0.

b. 1

c. 24.

d. 25.

22. Suppose that alpha is a double variable, what is the value of alpha after the following statement executes:

Alpha = 14.0 + static cast <double> (15/2).

a. alpha = 21.0.

b. Alpha = 21.0.

c. Alpha = 22.0.

d. None of these.

23. given: int one, double two, bool four. Which of the following assignment statement are valid.

(i) one = 7 * 3% 4;

(ii) 2.3 + 3.5 = two.

(iii) four = (2 <= 3),

a. only (i) is valid.

b. (ii) and (iii) are valid.

c. (ii) and (iii) are valid.

d. (i) and (iii) are valid.

24. Suppose that x is an int variable. Which of the following expression always evaluates to true?

- a. $(X > 0) \parallel (x \leq 0)$.
- b. $(X > 0) \parallel (x == 0)$.
- c. $(X > 0) \& \& (x \leq 0)$.
- d. $(X > 0) \& \& (x == 0)$.

25. What is the output of the following code fragment if the input value is 4?

```
Int num, int alpha = 10.  
Cin >> num;  
Switch (num).  
{  
Case 3: alpha ++ , break,  
Case 4:  
Case 6: alpha = alpha + 3.  
Case 8: alpha + 4 break.  
Default: alpha = alpha + 5;  
}
```

```
Cout << alpha << endl>>
```

- a. 13.
- b. 14.
- c. 15.
- d. 17.

26. (5 points) write a program that read two integer numbers, x and y and then prints a rectangle of stars the screen, the rectangle is y lines and x starts on each line. Use two nested for - loops to do this. Your program must be complete and syntax errors free. Pay attention to end of lines.
