

**MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.**

Given the nested if-else structure below, answer the question(s) below.

```

if (a > 0)
    if (b < 0)
        x = x + 5;
    else
        if (a > 5)
            x = x + 4;
        else
            x = x + 3;
else
    x = x + 2;

```

1) If x is currently 0, a = 5 and b = 5, what will x become after the above statement is executed? 1) \_\_\_\_\_  
 A) 0                      B) 2                      C) 3                      D) 4                      E) 5

2) Consider the following code that will assign a letter grade of 'A', 'B', 'C', 'D', or 'F' depending on a student's test score. 2) \_\_\_\_\_

```

if(score >= 90) grade = 'A';
if(score >= 80) grade = 'B';
if(score >= 70) grade = 'C';
if(score >= 60) grade = 'D';
else grade = 'F';

```

- A) This code will work correctly only if grade < 60
- B) This code will not work correctly under any circumstances
- C) This code will work correctly in all cases
- D) This code will work correctly only if grade >= 60
- E) This code will work correctly only if grade < 70

3) Given that s is a String, what does the following loop do? 3) \_\_\_\_\_

```

for(int j = s.length( ); j > 0; j--)
    System.out.print(s.charAt(j-1));

```

- A) it prints s out forwards
- B) it prints s out backwards but does not print the 0<sup>th</sup> character
- C) it prints s out backwards
- D) it yields a run-time error because there is no character at s.charAt(j-1) for j = 0
- E) it prints s out backwards after skipping the last character

4) Which character below is not allowed in an identifier? 4) \_\_\_\_\_

- A) ^                      B) 0 (zero)                      C) \$                      D) q                      E) \_

5) Given the following code, where x = 0, what is the resulting value of x after the for-loop terminates? 5) \_\_\_\_\_

```

for(int i=0;i<5;i++)
    x += i;

```

- A) 0                      B) 10                      C) 4                      D) 5                      E) 15

- 6) Which of the sets of statements below will add 1 to x if x is positive and subtract 1 from x if x is negative but leave x alone if x is 0? 6) \_\_\_\_\_
- A) if (x > 0) x++;  
else x--;
  - B) if (x > 0) x++;  
else if (x < 0) x--;
  - C) if (x > 0) x++;  
if (x < 0) x--;  
else x = 0;
  - D) if (x == 0) x = 0;  
else x++;  
x--;
  - E) x++;  
x--;
- 7) Which of the following would be a legal Java identifier? 7) \_\_\_\_\_
- A) i
  - B) for
  - C) ilikeclass!
  - D) idon'tlikeclass
  - E) i-like-class
- 8) If x is an int where x = 1, what will x be after the following loop terminates? 8) \_\_\_\_\_
- ```
while (x < 100)
    x *= 2;
```
- A) 64
  - B) 100
  - C) 2
  - D) 128
  - E) none of the above, this is an infinite loop
- 9) What is output with the statement `System.out.println(""+x+y);` if x and y are int values where x=10 and y=5? 9) \_\_\_\_\_
- A) 15
  - B) x+y
  - C) 105
  - D) 10 5
  - E) An error since neither x nor y is a String
- 10) Assume that x, y and z are all ints equal to 50, 20 and 6 respectively. What is the result of `x / y / z`? 10) \_\_\_\_\_
- A) A syntax error as this is syntactically invalid
  - B) 0
  - C) 12
  - D) A run-time error because this is a division by 0
  - E) 16

- 11) A cast (ie saying (int)x/y is required in which of the following situations? 11) \_\_\_\_\_
- A) using charAt to take an element of a String and store it in a char
  - B) storing an int in a double
  - C) storing a double in a double
  - D) storing a double in an int
  - E) all of the above require casts
- 12) What value will z have if we execute the following assignment statement? 12) \_\_\_\_\_
- ```
double z = 5 / 10;
```
- A) z will equal 0.5
  - B) z will equal 5.0
  - C) z will equal 0.0
  - D) z will equal 0.05
  - E) none of the above, a run-time error arises because z is a double and 5 / 10 is an int
- 13) The following nested loop structure will execute the inner most statement (x++) how many times? 13) \_\_\_\_\_
- ```
for(int j = 0; j < 100; j++)
    for(int k = 100; k > 0; k--)
        x++;
```
- A) 1,000,000
  - B) 20,000
  - C) 200
  - D) 100
  - E) 10,000
- 14) Assume that count is 0, total is 20 and max is 1. The following statement will do which of the following? 14) \_\_\_\_\_
- ```
if (count != 0 && total / count > max) max = total / count;
```
- A) The condition short circuits and the assignment statement is executed without problem
  - B) The condition will not compile because it uses improper syntax
  - C) The condition short circuits and the assignment statement is not executed
  - D) The condition does not short circuit causing a division by zero error
  - E) The condition short circuits so that there is no division by zero error when evaluating the condition, but the assignment statement causes a division by zero error
- 15) Which of the following would be a good variable name for the current value of a stock? 15) \_\_\_\_\_
- A) curstoval
  - B) theCurrentValueOfThisStockIs
  - C) currentStockVal
  - D) csv
  - E) current
- 16) 6 bits can be used to represent \_\_\_\_\_ distinct items or values. 16) \_\_\_\_\_
- A) 24
  - B) 20
  - C) 6
  - D) 32
  - E) 64
- 17) What will be the result of the following assignment statement? Assume b = 5 and c = 10. 17) \_\_\_\_\_
- ```
int a = b * (-c + 2) / 2;
```
- A) 20
  - B) -6
  - C) -20
  - D) 30
  - E) -30

- 18) An error in a program that results in the program outputting \$100 instead of the correct answer, \$250 is 18) \_\_\_\_\_
- A) a compile time error
  - B) a syntax error
  - C) a logical error
  - D) a run-time error
  - E) a snafu
- 19) In the String major = "Computer Science", what is returned by major.substring(1,2)? 19) \_\_\_\_\_
- A) "o"
  - B) "m"
  - C) 'mputer Science'
  - D) "C"
  - E) "Computer"
- 20) Once we have implemented the solution, we are not done with the problem because 20) \_\_\_\_\_
- A) the solution may have errors and need testing and fixing before we are done
  - B) the solution may, at a later date, need revising to handle new specifications
  - C) the solution may, at a later date, need revising because of new programming language features
  - D) the solution may not be the best (most efficient)
  - E) all of the above