Unit 1 Programming Fundamentals Quiz

Name:

KNOWLEDGE [/ 24]: (If there is an error in the code you will need to explain what the error is and how you would fix it).

1. Trace through the following segment of code. [3 marks]

```
for (int c=-5; c>-11; c = c–2) {
        for (int count = 3; count<= 25; count = count * 2) {
                System.out.println(c);
                System.out.println(count);
        }
}
```

MEMORY	OUTPUT	Mark
c = -5, -7, -9, -11 count = 3, 6, 12, 24, 48	-5 3 -5 6 -5 12 -5 24 -7 3 -7 6 -7 12 -7 24 -9 3 -9 6 -9 12 -9 24	/3 Comments:

2. For the following method headers, **i) public static void sample (int x, int y)**
ii) public static void sample (string x, float y)

State which of the following calls are valid or invalid.
If the call is valid, state which *sample* is called (i or ii).
If the call is invalid, state why it is invalid. (5 marks)

sample (3, 2); Valid (i)

sample (“Hello”, 2.6); Invalid, because 2.6 is not defined as a float (It’s a double→ parameter doesn’t match)

Sample (3, 2); Invalid because method name is sample and not Sample.

sample (‘3’, 2.5); Invalid because of ‘3’ - is a character and not of type string

sample (2.0, ‘Hey’); Invalid, the parameters don’t match

3. Given the code:
Scanner myObj = new Scanner(System.in);
String x = myObj.nextLine();

Assume that at least two characters will be entered. Use String methods to solve this problem. [/ 6]

Unit 1 Programming Fundamentals Quiz

Name:

Determine:	Provide the code here:	Mark

The middle character or characters in the String.	int length= x.length();
	length= length/2;
	System.out.println(x.charAt(length));
	
	if (length % 2 == 0) System.out.println(x.charAt(length-1));
		/2

Move the first character to the end of the String.	System.out.println (x.substring(1) +x.charAt(0));	/1

Find if the letter r exists in the String. If not, output that it does not exist.	String r=x.indexOf("r");
	If (r==-1){
	System.out.println("The letter 'r' does not exist");
	
	} else{
	System.out.println("The letter 'r' exists in the String");
	}
		/1

Find out if the letter M exists starting from the second letter in the String.	Int location = x.indexOf('M', 1);
	if (location != 0)
	{
	System.out.println("M occurs as character number" + (location + 1));
	
	else {
	System.out.println("The character doesn't exist");
		/1

Print only the characters starting from the third character (includes the third character). Use ONLY one string method to do this.	System.out.println(x.substring(2));	/1

3. For the following method, use comments to indicate the scope of the variables x, y, a, b, c, d, e. Indicate where they start and where they end. (6 marks)

```
public static void temp (int x, int y){ // x and y only exist in this method.

    int a; //a exists in this method only.  It doesn't exist outside of this method.

    for (int c=0; c<10; c++){  //variable c exists only in the outer and inner loops

        int b; //b exists in the outer and inner loops only

        for (int d=9; c>4; c--) { // d exists in the inner loop only

            int e; // e only exists in the inner loop
        }
    }
    int d;   // only exists in this method
}
```

4. For a sequence that starts at -5 and decreases by 3 each term, find the value of the 180th term and print it out to the screen. (4 marks)

Write your code here:

Marking Criteria
2 - correct for loop (initializing at -5 and decreasing each term by 3)
1 - keeping track of the term numbers

Unit 1 Programming Fundamentals Quiz

Name:

1 - printing out to the screen

```
int num= -5;
for(int i=0; i < 180; i++){
    num=num-3;
}
System.out.println (“The 180th term is ”+num);
```

APPLICATION (/ 18) (Do not worry about importing libraries. Minor syntax errors will not count against you as you do not have access to eclipse)

1. Write a program that will find and output the arithmetic series for each of the numbers in the following *String x = “2351588796326854348855”;.* Make sure you use String methods to solve for this. (5 marks)

Marking Criteria
1 - correct for loop and condition
1 - looping through each character of the string using charAt
1 - converting each character into an integer
1 - keeping track of the sum
1 - printing out to the screen

```
int sum = 0;
for (int i = 0; i < x.length(); i++)
{
        sum = sum + Integer.parseInt(x.charAt(i));
        System.out.print( x.charAt(i) + “+”);
}
System.out.println(“\nThe sum of all of the integers in the string x is “ + sum);
```