1.

1 point

Which one of the following is the first gene for this strand of DNA where you want to consider all three of the stop codons?

"AATGCTAACTAGCTGACTAAT"

- ○ ATGCTAACTAG
- ● ATGCTAACTAGCTGA
- ○ ATGCTA
- ○ ATGCTAA
- ○ The empty string
- ○ CTAACTAGC

2.

1 point

Consider the following code segment to count the number of times the string "TG" occurs in the string dna, that does not work correctly.

```
1  String dna = "CTGCCTGCATGATCGTA";
2  int pos = dna.indexOf("TG");
3  int count = 0;
4  while (pos >= 0) {
5      count = count + 1;
6      pos = dna.indexOf("TG",pos);
7  }
8  System.out.println(count);
```

Which of the following best describes the error?

- ○ The variable pos should be initialized to 0 in line 2 and only set with indexOf inside the while loop.
- ○ The count is off by 1. The count should be initialized to 1 to take into account the first "TG" that is found.
- ● Each time pos is reset in the while loop it finds the same "TG".
- ○ The two lines in the body of the while loop should be swapped so the count happens after pos is given a new value.

3.

1 point

Consider the following segment of code from a program.

```
1  while (count < 3) {
2      count += 1;
3      newDna = newDna + dna.substring(startPos,pos);
4      startPos = pos+1;
5      pos = dna.indexOf("T", startPos);
6      if (pos == -1) {
7          break;
8      }
9  }
```

How many different ways are there to break out of this loop?

- ○ 2
- ● 0, it is an infinite loop
- ○ 1
- ○ 3

4.

1 point

Which one of the following conditionals correctly evaluates to true if the integer num is an odd number and to false if it is an even number.

- ●
  ```
  1  if (num % 2 == 1)
  ```
- ○
  ```
  1  if (num % 2 == 0)
  ```
- ○
  ```
  1  if (num % 2 == (num+1) % 2)
  ```
- ○
  ```
  1  if (num % 2 == num % 2)
  ```

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