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TO PASS 70% or higher

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Lecture 6 Quiz

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1. Which of the following is a correct Python program to obtain the Python version you are using? **1 / 1 point**

A.

print(__version__)

B.

import sys

print(sys.version)

C.

print(version)

D.

import sys

print(sys.__version__)

- ○ A, B, C
- ○ B, C, D
- ○ A, B
- ◉ B

Correct

2. What does the following code do? **1 / 1 point**

```
import random
def create_dna(n, alphabet='acgt'):
    return ''.join([random.choice(alphabet) for i in range(n)])
dna = create_dna(1000000)
```

- ○ Creates a dna variable containing a string of length less than 1000000, and with the a,c,g,t characters.
- ◉ Creates a dna variable containing a string of length 1000000, and with the a,c,g,t characters.
- ○ Creates a dna variable containing a string of length 999999, and with the a,c,g,t characters.
- ○ Creates a dna variable containing a string of length 1000000, containing the 'acgt' substring repeated.

Correct

3. The following functions are all supposed to count how many times a certain base (represented as a character variable in Python) appears in a dna sequence (represented as a string variable in Python): **1 / 1 point**

```
def count1(dna, base):
    i = 0
    for c in dna:
        if c == base:
        i += 1
    return i

def count2(dna, base):
    i = 0
    for j in range(len(dna)):
        if dna[j] == base:
        i += 1
    return i

def count3(dna, base):
    match = [c == base for c in dna]
    return sum(match)

def count4(dna, base):
    return dna.count(base)

def count5(dna, base):
    return len([i for i in range(len(dna)) if dna[i] == base])

```

```
25  def count6(dna,base):
26      return sum(c == base for c in dna)
```

Which of them is correct?

- ○ count2, count3 only
- ○ count4, count5 only
- ◉ All of them are correct.
- ○ count1, count2, count3, and count4 only

✓ **Correct**

4. Which of the correct functions defined in the previous exercise is the fastest? **1 / 1 point**

Hint. You will need to generate a very large string to test them on, and the function clock() from the time module to time each function.

- ○ count1
- ○ count3
- ○ count2
- ◉ count4

✓ **Correct**

5. If the PYTHONPATH environment variable is set, which of the following directories are searched for modules? **1 / 1 point**

A) PYTHONPATH directory

B) current directory

C) home directory

D) installation dependent default path

- ○ A, B, and C
- ○ B and D only
- ○ B only
- ◉ A, B, and D

✓ **Correct**

6. A student imports a module called dnautil in Python using the following command: **1 / 1 point**

import dnautil

What does the following call to the dir function do?

dir(dnautil)

- ○ Lists the variables defined in the dnautil module
- ○ Prints the directory where the dnautil module is located
- ○ Lists the gc and has_stop_codon functions
- ◉ Lists all the attributes of the dnautil module

✓ **Correct**