1. Given dict = {“Abc”:6, “Def”:8, “Ghi”:11, “Jkl”: 7, “Mno”:3}, what values will be printed by the following codes:

   a. for x in dict:
      print(x)

   b. for i in dict:
      print(dict[i])

   c. for i in dict:
      print(dict[dict[i]])

2. Consider the following functions:

   def func1(a):
       x = a + b
       return x

   def func2(a,b):
       y = a*a + b*b
       return y

What will the following code segments print?

(a) a = b = 1
    x = y = 2
    func1(a)

(b) a = b = 2
    x = y = 3
    func1(b)

(c) a = b = 3
    x = y = 4
    func1(x)

(d) a = b = 4
    x = y = 5
    func2(a,b)

(e) a = b = 5
    x = y = 6
    func2(a,y)

(f) a = b = 6
    x = y = 7
func2(y, y)

(g)  \[ a = b = 7 \]
    \[ x = y = 8 \]
    \[ \text{func1(func2(a, b))} \]

3. Consider the following functions:
   \[
   \text{def func1}(a):
   \hspace{1em} x = a^2 + a + 1
   \hspace{1em} \text{return } x
   \]
   \[
   \text{def func2}(a, \text{func}):
   \hspace{1em} x = a^2 - a + 1
   \hspace{1em} y = \text{func}(x)
   \hspace{1em} z = x + y
   \hspace{1em} \text{return } z
   \]
   \[
   \text{def func3}(a, b, \text{func}):
   \hspace{1em} x = a^2 + b^2
   \hspace{1em} y = \text{func}(x)
   \hspace{1em} z = x - y
   \hspace{1em} \text{return } z
   \]

What will the following code segments compute?
(a)  \[ a = 2 \]
    \[ \text{func1}(a) \]
(b)  \[ a = 3 \]
    \[ \text{func2}(a, \text{func1}) \]
(c)  \[ a = 4 \]
    \[ b = 5 \]
    \[ \text{func3}(a, b, \text{func1}) \]
(d)  \[ a = 6 \]
    \[ b = 7 \]
    \[ \text{func3}(a, a, \text{func1}) \]
(e)  \[ a = 8 \]
    \[ b = 9 \]
    \[ \text{func3}(a, b, \text{func1}) \]

4. Write the definition of a Python function called \texttt{isNeg} which takes a single parameter \texttt{myList}, which is a list of integers. The function \texttt{isNeg} should return \texttt{True} if \texttt{myList} consists entirely of negative integers and should return \texttt{False} otherwise.
5. Below is a transcript of a shell session in Python. Write what the Python shell would print out after each line.

```python
>>> 'Hello Dolly'.split()
['Hello', 'Dolly']
>>> 'Hello Dolly\n'.strip()
'Hello Dolly'
>>> 'Hello'*2
'HelloHello'
>>> list('Hello')
['H', 'e', 'l', 'l', 'o']
>>> print('Hello')
Hello
```

6. What do we mean when we say that a dictionary is *mutable*, but a string is *immutable*?

7. Write statements in Python assigning to the three variables `eString`, `eList` and `eDict` the empty string, the empty list and the empty dictionary, respectively.

8. Consider the list `dist = [555, 30, 30, 51, 45]`. What would the output be if you type the following instructions at the Python prompt?

   a) `dist[-2]`
   b) `dist[:3]`
   c) `dist[1:3]`
   d) `dist*3`
   e) `type(dist) == dict`
   f) `type(dist[0]) == int`
   g) `min(dist)`

9. You have been given the following two lists of stars and their distances to us in light years:

   ```python
   stars = ['Aludra', 'Zosma', 'Deneb', 'Aldebaran', 'Spicka', 'Castor']
   distances = [320, 58, 1425, 67, 250, 51]
   ```

   Write a function called `makeDic`, that takes the two lists and returns a dictionary with the names as the keys and distances as the values. Assign the result of `makeDic` to `disDict`.

   a) Using `disDict`, write a Python instruction that would give the distance of ‘Aldebaran’.
   b) Write a Python instruction that would add the distance of 20 for ‘Menkar’ to `disDict`.
   c) Write a Python instruction that would update the score of ‘Aludra’ to 3200 in `disDict`.
   d) Delete ‘Castor’ and its distance from `disDict`. 