Python DS & String Practicals - 1

1) First test the following: Syntax, BIFs, Methods of lists, tuples, sets, dictionaries, strings (these are mentioned in the bottom of the document)
2) Given a string,
   a) print each character to the monitor using both for each and position access
   b) print each character using splicing
   c) print alternate characters using index & splicing
   d) reverse the string & find out if its a palindrome
   e) return a string with all chars converted to its next char, for eg: if the input is 'abc123z' then the output should be 'bcd234a' (each char is converted to its next char)

3) Given 2 strings, find the number of occurrences of the second one in the first one. Which method would you use? How would you find this out without using any methods?
4) Check the working of ==, <, > wrt strings.
5) Check the immutability of strings:

```
        s1 = 'abc'
        s2 = 'abc'
print the id(s1) & id(s2)
        s1.replace('a','x')
print s1 & the id(s1)
        s1 = s1.replace('a','x')
print s1 & the id(s1)
```

   Do you understand the reason for the output?

6) Create a list of numbers. Pass it to a function. Append a value there. Print the list in the invoking function & check whether the change is present or not. Why so?
7) Given a sentence, print all the words with any duplicates
8) Given a sentence, print the sorted words
9) Given a sentence, print how many occurrences each word has in it
10) Given a sentence, print only the words that do not have digits in it
11) Create a function to return a random OTP with 5 digits
12) Create a function to return a random OTP with 5 characters
13) How to convert a list to a set, a set to a list, a list to a tuple? (try set(), tuple(), list() BIFs)
14) Create a dictionary with digits and its word equivalents. Sort it based on keys.
15) Given a number, print its value in words, for ex: 123 -> one hundred twenty three, 1023 -> one thousand twenty three, 12 -> twelve, etc

BIFs, Methods to test for 'string':

1) BIFs => len(), ord(), chr(), str(), float(), int(), bool()
2) Methods:
    a) replace(), split(), count(), index(), upper(), capitalize(), isalpha(), isdigit(), split(), zfill(), swapcase(), strip(), startswith(), endswith(), islower(), isupper()

BIFs, Methods to test for 'list';:

3) BIFs => len(), sum(), max(), min()
4) Methods:
    a) append(), extend(), remove(), count(), index(), pop(), reverse(), sort(), copy(), clear()

BIFs, Methods to test for 'dictionary':

5) BIFs => len()
6) Methods:
    a) get(), pop(), update(), clear(), keys(), values(), items(), copy(), popitem()

BIFs, Methods to test for 'set':

7) BIFs => len(), sum(), max(), min()
8) Methods:
    a) add(), remove(), clear(), difference(), intersection(), pop(), update()