TYPE-B:INTRODUCTION TO PYTHON MODULE:CH-8

1) Consider the module tempCoryversion.py as given in Fig. 8.2 in the chapter
   If you invoke the module with two different types of import statements, how would the function call
   statement for imported module's functions be affected?

   sol:
   When the module tempCoryversion.py is imported using the statement import
   tempCoryversion, the functions defined in the module must be called using the module name
   as a prefix, for example tempCoryversion.function_name().

   If the module is imported using the statement from tempCoryversion import function_name,
   the function can be called directly without using the module name, for example
   function_name().

   Therefore, the function call statement depends on the type of import used.

2) Suppose that after we import the random module, we define the following function called diff in
   a python session:

   ```
   def diff():
       x=random.random() - random.random()
       return(x)
   ```
   what would be the result if you now evaluate:
   ```
       y=diff()
       print(y)
   ```
   at the python prompt? give reason for your solution

   sol:
   After importing the random module, the function diff() is defined. Inside this function, two random
   numbers are generated using random.random(). Each call to random.random() produces a floating-point
   number between 0 and 1. The function subtracts the second random number from the first one and
   returns the result.

   When the statement y = diff() is executed, the function is called and a random difference value is stored
   in the variable y. Since both random values lie between 0 and 1, their difference will always be a number
   between −1 and 1.

   When print(y) is executed, it displays a different random value each time the program runs. The exact
   value cannot be predicted because the numbers are generated randomly.

   Therefore, the output will be a random floating-point number between −1 and 1.

3) What are the possible outcome(s) executed from the following code ? also specify the maximum and minimum values that can be assigned to variable NUMBER.

```
STRING= 'CBSEONLINE'
NUMBER=random.randint(0,3)
N=9
while STRING[N] != 'L':
    print(STRING[N] + STRING[NUMBER] + '#', end= ' ')
    NUMBER=NUMBER+1
    N=N-1
```

sol:
(i) ES#NE#IO#
(iv)EC#NB#IS#

4) Consider the following code:

```
import random
print(int(20+random.random()*5), end = '')
print(int(20+ random.random()*5), end = '')
print(int(20+ random.random()*5), end = '')
print(int(20+ random.random()*5))
```

Find the suggested output options (i) to (iv). Also, write the least value and highest value that can be generated.

(i) 20 22 24 25
(ii) 22 23 24 25
(iii) 23 24 23 24
(iv) 21 21 21 21

sol:
(iii) 23 24 23 24
(iv) 21 21 21 21

Least value that can be generated: 20
Highest value that can be generated: 24

5) Consider the following code:

```
import random
print(100+ random.randint(5, 10), end = '')
print(100+ random.randint(5, 10), end = '')
print(100 + random.randint(5, 10), end = '')
print(100+ random.randint(5, 10)).
```

Find the suggested output options (i) to (io). Also, write the least value and highest value that can be generated.

(i) 102 105 104 105
(ii) 110 103 104 105
(iii) 105 107 105 110
(iv) 110 105 105 110

sol:
   (iii) 105 107 105 110
   (iv) 110 105 105 110

Least value that can be generated: 105
Highest value that can be generated: 110

6) What are the possible outcome(s) executed from the following code ? Also specify the maximum and minimum values that can be assigned to variable PICKER

```
import random
PICK-random, randint(0, 3)
CITY-["DELHI", "MUMBAI", "CHENNAI", "KOLKATA"];
for I in CITY:
for 3 in range(1, PICK):
print(I, end"")
print()
```

sol:
   Minimum value of PICKER: 0
   Maximum value of PICKER: 3

   (iii) DELHI
      MUMBAI
      CHENNAI
      KOLKATA

7) Consider the code given below :

```
import random
r = random.randrange (100, 999, 5)
print(r, end = ' ')
r = random.randrange (100, 999, 5)
print(r, end = ' ')
r = random.randrange (100, 999, 5)
print(r)
```

Which of the following are the possible outcomes of the above code? Also, what can be the maximum and minimum number generated by line 2?

(a) 655, 705, 220
(b) 380, 382, 505
(c) 100, 500, 999
(d) 345, 650, 110

sol:
  Minimum number: 100
  Maximum number: 995 (because 999 is exclusive and numbers must be multiples of 5)

  (a) 655, 705, 220
  (d) 345, 650, 110

8) Consider the code given below:

```
import random
r = random.randint(10, 100) 10
print(r, end = ' ')
r = random.randint(10, 100) 10
print(r, end = ' ')
r =   random.randint(10, 100)- 10
print(r)
```

Which of the following are the possible outcomes of the above code ? Also, what can be the maximum and minimum number generated by line 2?

(a) 12 45 22
(b) 100 80 84
(c) 101 12 43
(d) 100 12 10

    sol:
      Minimum number: 10 – 10 = 0
      Maximum number: 100 – 10 = 90

      (a) 12 45 22

9) Consider the code given below:

```
import random
r=random.random()*10
print(r, end= '')
r=random.random()*10
print(r, end= '')
r=random.random()*10
print(r)
```

Which of the following are the possible outcomes of the above code? Also, what can be the maximum and minimum number generated by line 2?

(a) 0.5 1.6 9.8
(b) 10.0 1.0 0.0
(c) 0.0 5.6 8.7
(d) 0.0 7.9 10.0

sol:
Minimum number: 0.0
Maximum number: slightly less than 10.0 (e.g., 9.999...)
Note: 10.0 is not actually possible, because random.random() never produces 1.

(a) 0.5 1.6 9.8
(c) 0.0 5.6 8.7

10) Consider the code given below :

```
import statistics as st
v = [7, 8, 8, 11, 7, 7]
m1 = st.mean(v)
m2 = st.mode (v)
m3 = st.median(v)
print(m1, m2, m3)
```

Which of the following is the correct output of the above code ?

(a) 7 8 7.5
(b) 8 7 7
(c) 8 7 7.5
(d) 8.5 7 7.5

sol:
(c) 8 7 7.5