**WORKSHEET 2**

**PYTHON**

**Q1 to Q8 have only one correct answer. Choose the correct option to answer your question.**

**1. Which of the following is not a core datatype in python?**

A) list B) struct

C) tuple D) set

**Ans. B) struct**

**2. Which of the following is an invalid variable name in python?**

A) \_init\_ B) no\_1

C) 1\_no D) \_1

**Ans. C) 1\_no**

**3. Which one of the following is a keyword in python?**

A) in B) \_init\_

C) on D) foo

**Ans. A) in**

**4. In which of the following manner are the operators of the same precedence executed in python?**

A) Left to Right B) BODMAS

C) Right to Left D) None of these

**Ans. A) Left to Right**

**5. Arrange the following in decreasing order of the precedence when they appear in an expression in python?**

i) Multiplication ii) Division iii) Exponential iv) Parentheses

A) iii – iv – ii – i B) iii – iv – i – ii

C) iv – iii – ii – i D) iii – ii – i – iv

**Ans. C) iv – iii – ii – i**

**6. (28//6)\*\*3/3%3 = ?**

A) 7.1111… B) 0

C) 0.3333… D) 1

**Ans. C) 0.3333…**

**7. Which of the following is not equal to x16 ?**

A) x\*\*4\*\*4 B) x\*\*16

C) x^16 D) (x\*\*4)\*\*4

**Ans. A) x\*\*4\*\*4**

**8. a = input(“Enter an integer”). What will be the data type of a?**

A) int B) str

C) float D) double

**Ans. B) str**

**Q9 and Q10 have multiple correct answers. Choose all the correct options to answer your question.**

**9. Which of the following statements are correct?**

A) Division and multiplication have same precedence in python

B) Python’s operators’ precedence is based on PEDMAS

C) Python’s operators’ precedence is based on VBODMAS

D) In case of operators’ having same precedence, the one on the left side is executed first.

**Ans. A) Division and multiplication have same precedence in python**,

**D) In case of operators’ having same precedence, the one on the left side is executed first**

**10. Which of the following is(are) valid statement(s) in python?**

A) abc = 1,000,000 B) a b c = 1000 2000 3000

C) a,b,c = 1000, 2000, 3000 D) a\_b\_c = 1,000,000

**Ans. A) abc = 1,000,000, C) a,b,c = 1000, 2000, 3000, D) a\_b\_c = 1,000,000**

**Q11 to Q13 are subjective questions, answer them briefly**

**11. Differentiate between a list, tuple, set and dictionary.**

**Ans.**

**List** are just like the arrays, declared in other languages. Lists need not be homogeneous always which makes it a most powerful tool in Python. In Python, the list is a type of container in Data Structures, which is used to store multiple data at the same time. Lists are a useful tool for preserving a sequence of data and further iterating over it.

**Syntax:**

list\_data = ['an', 'example', 'of', 'a', 'list']

**Tuple** is also a sequence data type that can contain elements of different data types, but these are immutable in nature. In other words, a tuple is a collection of Python objects separated by commas. The tuple is faster than the list because of static in nature.

**Syntax:**

tuple\_data = ('this', 'is', 'an', 'example', 'of', 'tuple')

**Difference Between List and Tuple in Python:**

| **SR.NO.** | **LIST** | **TUPLE** |
| --- | --- | --- |
| 1 | Lists are mutable | Tuple are immutable |
| 2 | Implication of iterations is Time-consuming | Implication of iterations is comparatively Faster |
| 3 | The list is better for performing operations, such as insertion and deletion. | Tuple data type is appropriate for accessing the elements |
| 4 | Lists consume more memory | Tuple consume less memory as compared to the list |
| 5 | Lists have several built-in methods | Tuple does no have must built-in methods. |
| 6 | The unexpected changes and errors are more likely to occur | In tuple, it is hard to take place. |

**Set:**In Python, Setis an unordered collection of data type that is iterable, mutable and has no duplicate elements. The major advantage of using a set, as opposed to a list, is that it has a highly optimized method for checking whether a specific element is contained in the set. The main characterisitcs of set are –

* Sets are unoreder collection of elements or unintended collection of items In python.
* Here the order in which the elements are added into the set is not fixed, it can change frequently.
* It is defined under curly braces{}
* Sets are immutable.i.e it cannot be changed or replaced.

**Dictionary**in Python is an unordered collection of data values, used to store data values like a map, which unlike other Data Types that hold only single value as an element, Dictionary holds **key:value** pair. Key value is provided in the dictionary to make it more optimized.

**Note –**Keys in a dictionary doesn’t allows Polymorphism.

**12. Are strings mutable in python? Suppose you have a string “I+Love+Python”, write a small code to replace ‘+’ with space in python.**

**Ans.**

In python, the **string** data types are immutable. Which means a string value cannot be updated. We can verify this by trying to update a part of the string which will led us to an error.

**code to replace ‘+’ with space from string “I+Love+Python”:-**

string = "I+Love+Python"

print("String is :- ", string)

**Output :- String is :- I+Love+Python**

space=string.replace("+", " ")

print("String after replace space instead of + :- ", space)

**Output :- String after replaced space instead of + :- I Love Python**

**13. What does the function ord() do in python? Explain with example. Also, write down the function for getting the datatype of a variable in python.**

**Ans.**

The **ord() function** in Python accepts a string of length 1 as an argument and returns the unicode code point representation of the passed argument. For example ord('A') returns 65 which is a unicode code point value of character ‘A’.

**The function for getting the datatype of a variable in python:-**

**x = 100.50**

**print(type(x))**

**Output :-** <class 'float'>

**Q14 and Q15 are programming questions. Answer them in Jupyter Notebook.**

**14. Write a python program to solve a quadratic equation of the form 𝑎𝑥2+𝑏𝑥+𝑐=0. Where a, b and c are to be taken by user input. Handle the erroneous input, such as ‘a’ should not be equal to 0.**

**Ans.** Jupyter notepad file uploaded in github.

**15. Write a python program to find the sum of first ‘n’ natural numbers without using any loop. Ask user to input the value of ‘n’.**

**Ans.** Jupyter notepad file uploaded in github.