WORKSHEET 2 PYTHON

Q1 to Q7 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
   C) set

   Ans:-(B)

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

   A) _init_
   B) no_1
   C) 1_no
   D) _1

   Ans:-(C)

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

   A) in
   B) _init_
   C) on
   D) foo

   Ans:-(A)

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)

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:-(A)

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

   A) 7.1111…
   B) 0
   C) 0.3333…
   D) 1

   Ans:-(C)

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

   A) int
   B) str
   C) float
   D) double

   Ans:-(B)

Q8 and Q10 have multiple correct answers. Choose all the correct options to answer your question.

8. 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 the same precedence, the one on the left side is executed first.

   Ans:-(A,D)

9. 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:-(C,D)

10. Which of the following is not equal to x^{16} in python?

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

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

Ans:-(C)

Q11 to Q13 are subjective questions, answer them briefly

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

Ans:- In Python, there are four built-in data structures: list, tuple, set, and dictionary. Here's how they differ:

1. List: A list is an ordered collection of elements, which can be of any type. Lists are mutable, which means you can change their content by adding, removing, or modifying elements. Lists are created using square brackets [] or by using the list() constructor.

Example:

```
fruits = ['apple', 'banana', 'orange']
```

2. Tuple: A tuple is also an ordered collection of elements, but unlike lists, tuples are immutable. Once you create a tuple, you can't change its content. Tuples are created using parentheses () or the tuple() constructor.

Example:

```
numbers = (1, 2, 3, 4)
```

3. Set: A set is an unordered collection of unique elements. Sets are mutable, which means you can add or remove elements from them, but you can't modify individual elements. Sets are created using curly braces {} or the set() constructor.

Example:

```
letters = {'a', 'b', 'c'}
```

4. Dictionary: A dictionary is an unordered collection of key-value pairs. The keys in a dictionary must be unique and immutable, and the values can be of any type. Dictionaries are mutable, which means you can add, remove, or modify key-value pairs. Dictionaries are created using curly braces {} or the dict() constructor.

Example:

```
scores = {'Alice': 90, 'Bob': 85, 'Charlie': 80}
```

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:- No, strings are immutable in Python. Once a string is created, it cannot be modified. However, a new string can be created by using parts of the original string.

Here is a small code snippet to replace '+' with space in the given string:

```
s = "I+Love+Python"
s = s.replace("+", " ")
print(s)
```

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

Ans:- The ord() function in Python returns an integer representing the Unicode character. It takes a single character string as argument.

Example:

```
ord('A')
65
ord('a')
97
ord('#')
35
```

The type() function is used to get the data type of a variable in Python. It takes a single argument and returns the data type of that argument.

Example:

```
a = 5
type(a)
<class 'int'>
b = "hello"
type(b)
<class 'str'>
c = [1, 2, 3]
type(c)
<class 'list'>
```


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

14. Write a python program to solve a quadratic equation of the form ax^2+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.
15. Write a python program to find the sum of first ‘n’ natural numbers without using any loop. Ask users to input the value of ‘n’