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

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

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

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

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

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

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

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

A) 7.1111…
B) 0
C) 0.3333…
D) 1

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

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

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

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

10. Which of the following is not equal to x16 ?

A) x**4**4

B) x**16

C) x^16

D) (x**4)**4

Q11 to Q13 are subjective questions, answer them briefly

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

Lists: are just like dynamic sized arrays, declared in other languages (vector in C++ and ArrayList in Java). Lists need not be homogeneous always which makes it a most powerful tool in Python.

Tuple: A Tuple is a collection of Python objects separated by commas. In someways a tuple is similar to a list in terms of indexing, nested objects and repetition but a tuple is immutable unlike lists that are mutable.

Set: A Set is an unordered collection data type that is iterable, mutable and has no duplicate elements. Python's set class represents the mathematical notion of a set.

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.

12. Are strings mutable in python? Suppose you have a string "I+Love+Python", write a small code to replace '+' with space in python.

Strings are immutable so we can't change its value. But the contents of the list can change. The tuple itself isn't mutable but contain items that are mutable.

print("I"," ","am"," ","Nipam")

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.

The ord() method in Python converts a character into its Unicode code value. This method accepts a single character. You will receive the numerical Unicode value of the character as a response. The ord() method is useful if you want to check whether a string contains special characters.

Def type_variable(x)

result=type(x)

print(result)

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.

```
# importing complex math module
import cmath

a = float(input('Enter the value of a:\t'))
b = float(input('Enter the value of b:\t'))
c = float(input('Enter the value of c:\t'))
# calculate the discriminant
d = (b**2) - (4*a*c)
# find two solutions
sol1 = (-b-cmath.sqrt(d))/(2*a)
sol2 = (-b+cmath.sqrt(d))/(2*a)

print('The solution are {0} and {1}'.format(sol1,sol2))
print('The solution are {0} and {1}'.format(sol1,sol2))
if d<0:
    print('The roots are unreal ')
elif d==0:
```

```
    print('One is real and one is imaginary ')
elif d>0:
    print('Roots are real')
```

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.

```
n = int(input("Enter a limit: "))
sum_of_natural_number=n * (n+1) / 2
print(f"Sum of first {n} natural numbers is:" , sum_of_natural_number)
```