**Assignment-1**

**Q. What are keywords in python? Using the keyword library, print all the python keywords.**

**Ans-**Keywords are a reserved words that have specific meaning and functionality within the language.

**Input:**

import keyword

print(keyword.kwlist)

**Output:**

['False', 'None', 'True', 'and', 'as', 'assert', 'async', 'await', 'break', 'class', 'continue', 'def', 'del', 'elif', 'else', 'except', 'finally', 'for', 'from', 'global', 'if', 'import', 'in', 'is', 'lambda', 'nonlocal', 'not', 'or', 'pass', 'raise', 'return', 'try', 'while', 'with', 'yield']

**Q.2. What are the rules to create variables in python?**

Ans-

1. A Python variable name must start with a letter or the underscore character.
2. A Python variable name cannot start with a number.
3. A Python variable name can only contain alpha-numeric characters and underscores (A-z, 0-9, and Underscore).

**Q3. Q.3. What are the standards and conventions followed for the nomenclature of variables in python to improve code readability and maintainability**?

Ans- Function names should be lowercase, with words separated by underscores as necessary to improve readability.

**Q.4. What will happen if a keyword is used as a variable name?**

**Ans-** when we attempts to use a keyword for a variable or function name, a compilation error will be triggered.

It says invalid syntax.

**Example-**

if="dog"

print(if)

**output:**

```
Cell In[1], line 1
    if="dog"
       ^
SyntaxError: invalid syntax
```

**Q.5. For what purpose def keyword is used?**
**Ans- def** keyword is used to defining a function in python**.**

**Q.6. What is the operation of this special character '\'?**

**Ans-** It is called backslash that separates locations in a file or network path.

**Q.7. Give an example of the following conditions:**

**(i) Homogeneous list**

**(ii) Heterogeneous set**

**(iii) Homogeneous tuple**

**Ans- Example of Homogeneous list**

[12, 24, 99]
["hello", "goodbye"]
[list, dict, int]

**Example of Heterogeneous set**

{True, 10, 'Anu', 52.7, 'for'}

**Example of Homogeneous tuple**

('Banana', 'Apple', 'Grapes', 'Cherry')

**Q.8. Explain the mutable and immutable data types with proper explanation & examples.**

**Ans-** mutable – In mutable are changeable means data can be add, remove, replace, drop.

Mutable data types are list, dictionaries, sets

**Example-**

```
fruits=["banana","apple","grapes","Mausami"]
print(fruits)
a=[1,2,3,3,"anu"]
print(a)
```

**Output:**

['banana', 'apple', 'grapes', 'Mausami']
[1, 2, 3, 3, 'anu']

immutable – In immutable are not changeable Immutable refers to a state in which no change can occur over time. Mutable data types are Numbers (Integer, Float, Complex, Decimal, Rational & Booleans), Tuples, Strings.

**Example**

```
fruits={"banana","apple","grapes","Mausami"}
print(fruits)
```

**Output:**

```
('banana', 'apple', 'grapes', 'Mausami')
```

**Q.9. Write a code to create the given structure using only for loop.**

```
    *
   ***
  *****
 *******
*********
```

**Ans-**

**Code:**

```
rows=9
for i in range (rows):
   for j in range(i+1):
      print("*",end=" ")
   print()
```

**Output:**

```
    *
   ***
  *****
 *******
*********
```

**Q.10. Write a code to create the given structure using while loop.**

```
|||||||||
 |||||||
  |||||
   |||
    |
```

**Ans-**

**Code:**

```
rows=9
for i in range (rows):
   for j in range(9-i):
      print ("|",end=" ")
   print ()
```

**Output:**

```
|||||||||
 |||||||
  |||||
   |||
    |
```

In [ ]: