Q.1. What are keywords in python? Using the keyword library, print all the python keywords.

Ans. Keywords in python:-

* Value Keywords: True, False, None.

* Operator Keywords: and, or, not, in, is.

* Control Flow Keywords: if, elif, else.

* Iteration Keywords: for, while, break, continue, else.

* Structure Keywords: def, class, with, as, pass, lambda.

* Returning Keywords: return, yield.

* Import Keywords: import, from, as.

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

Ans. Rules for Python variables:

* A variable name must start with a letter or the underscore character.

* A variable name cannot start with a number.

* A variable name can only contain alpha-numeric characters and underscores (A-z, 0-9, and _)

* Variable names are case-sensitive (age, Age and AGE are three different variables).

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

Ans. Using meaningful and descriptive variable names is one of the most important best practices for writing efficient and maintainable Python code. In programming, variable names serve as a means of communication between the programmer and the computer, and also between programmers working on the same codebase.

* PEP style guide.

* DRY principle.

* Modular code.

* List comprehension and generators.

* Global variables.

* Exceptions.

* Context managers.

* Comments.

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

Ans. Keywords define the language's syntax rules and structure, and they cannot be used as variable names. Programmers generally choose names for their variables that are meaningful to the human readers of the program to remember what the variable is used for.

Q.5. For what purpose def keyword is used?

Ans. The def keyword is used to create, (or define) a function.

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

Ans. In Python strings, the backslash "\" is a special character, also called the "escape" character. It is used in representing certain whitespace characters: "\t" is a tab, "\n" is a newline, and "\r" is a carriage return. Conversely, prefixing a special character with "\" turns it into an ordinary character.

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

(i) Homogeneous list : a list of Person objects, a list of String objects, a list of Book objects.

(ii) Heterogeneous set : numeric, string, boolean, objects.

(iii) Homogeneous tuple : a list that contains different fruits.

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

Ans.

Mutable Objects	Immutable Objects
A mutable object can be changed after it is created	An immutable object cannot be changed after it is created
Examples : List, Set, Dictionary	Example: tuples, int, float, bool, frozenset.

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

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Ans. Code to create:-

```
#include<stdio.h>
Int main()
{
  Int I,j,a;
  Printf("\nEnter the value:");
  Scanf("%d",&a);
  For(i=1;i<=a;i++)
  {
    Printf("\n");
    For(j=1;j<=I;j++)
    {
      Printf("%d",i);
    }
  }
  Return 0;
}
```

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

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Ans. Code to create:-

```
#include<stdio.h>
Int main()
{
```

```
Int I,j,a;

Printf("\nEnter the value:");

Scanf("%d",&a);

For(i=1;i<=a;i++)

{

   Printf("\n");

   For(j=a-i+1;j>0;j--)

   {

     Printf("%d",j);

   }

}

Return 0;

}
```