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

Keywords in Python are reserved words that cannot be used as ordinary identifiers. They are used to define the syntax and structure of the Python language.

import keyword

print(keyword.kwlist)

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

1. A variable name must start with a letter or the underscore character.
2. A variable name cannot start with a number.
3. A variable name can only contain alpha-numeric characters and underscores (A-z, 0-9, and \_ )
4. Variable names are case-sensitive

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

1. Instance variable names should follow the lowercase convention.
2. Have the underscore as a separator while naming a multi-word instance variable.
3. Begin a non-public instance variable name with a single underscore.
4. Use two consecutive underscores at the beginning of an instance variable.

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

We will get SyntaxError error.

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

They are used to define the syntax and structure of the Python language.

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

‘\’ is called "escape" character.

Q.7. Give an example of the following conditions: (i) Homogeneous list (ii) Heterogeneous set (iii) Homogeneous tuple

mixed\_list = [1, 5, 6, 7]

het\_set = {1, 2, 3.5, "Tom"}

my\_tuple = (1, 2, 3)

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

immutable data type can’t be changed after it is created.

example : Strings and tuples

mutable data type can be changed after it is created.

example : lists, dictionaries, and sets

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

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n = 5

for i in range(n,0,-1):

    for j in range(n-i):

        print(' ', end='')

    for j in range(2\*i-1):

        print('\*',end='')

    print()

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

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i = n = 5

while i>=1:

    print(" "\*(n-i) + "|" \* (i\*2-1))

    i-=1