Q.1) Write the data types in Python? Explain

Ans) The different data types that are used in Python are int, float, complex, list, tuple, string, set, dictionary and boolean.

① Integers, floating point and complex numbers fall under Python Numbers category. Since everything is an object in Python, data types are actually classes and variables are instances of these classes.

int examples: 2, 3, 4, 5 etc

float examples: 2.0, 3.0, 4.0 etc

Complex examples: 2+3j, 4+5j etc.

In python integers can be of any length and floating point number is allowed up to 15 decimal places.

② List is an ordered sequence of items that is most used data type in Python. All the items in a list do not need to be of same type.

example: a = [1, 2.2, 'python']

③ Tuple is same as list but the only difference is that tuple is immutable, i.e., they can not be modified.

ex: t = (5, 'program', 1+3j)

(iv) Strings are a sequence of unicode characters which can be written in single or double quotes.

example: S: 'This is a string'

(v) Dictionary is an unordered collection of key-value pairs.

example: d: {1: 'value', 'key': 2}

(vi) Boolean returns only true or false values.

ex: a = 2 > 2

print(type(a)) # False

Q.2) Briefly explain history of Python.

Ans) Python is widely used general purpose, high level programming language. It was initially designed by Guido Van Rossum in 1991 and developed by Python Software Foundation. Its main objective is to provide code readability and advanced developer productivity. For various purposes such as developing, scripting, generation and software testing this language is utilized. Python was named after "Monty Python's Flying Circus", a BBC comedy series from the 1970's.

Q.3) Explain all the operators in Python?

Ans) There are 7 categories of operators in Python.

- Python Arithmetic Operator
- Python Relational Operator
- Python Assignment Operator
- Python Logical Operator.
- Python Membership Operator
- Python Identity Operator
- Python Bitwise Operator

→ Arithmetic Operators

These include operators ~~included~~ for basic mathematical operations.

Example: +, -, *, /, //, %, **

→ Relational Operator

These carries out the comparision between operands.

Example: <, ==, >, >=, <=, !=

→ Assignment Operators

These are used to assign a value to a variable.

Examples: =, +=, -=, *=, /=, **=, %=, //=

→ Logical Operators

These are used to combine more than one condition.

Examples: and, or, not

→ Identity Operators

These operators test if the two operands share an identity.

Examples: is, is not.

→ Bitwise Operators

These operators operate bit by bit on the operands.

Examples: AND(&), OR(|), XOR(^), <<, >>

Q.4) Explain the features of Python?

Ans) Python is a dynamic, high level, interpreted programming language. Some of its features are:

① Python is easy to code compared to other languages like C, C++, Java etc.

② Python is an object oriented language

③ Python supports GUI programming.

④ Python is a high level language

⑤ It is also an extensible language.

⑥ Python has large standard library which provides rich set of module and functions so you dont have to write your own code for every single thing.

⑦ It is a dynamically typed language.

Q.5) Justify why Python is interactive interpreted language

Ans) Python is an interactive interpreted language because python code is executed line by line at a time. Like other languages C, C++, java etc there is no need to compile python code, this makes it easier to debug our code. The source code of python is converted into an ~~intermed~~ immediate form called bytecode.