Q1) How does a computer Program Works ?

A computer program is a collection of instructions that can be executed by a computer to perform a specific task.

A computer program is usually written by a computer programmer in programming language. Form the program in its human readable form of source code, a compiler or assembler can derive machine code a form consisting of instructions that the computer can directly execute. Alternatively, a computer program may be executed with the aid of an interpreter.

Q2) Can we compare natural vs Programming Language?

The difference in the grammar of programming language and natural language (English) is that natural language may be informal in speaking but not in written communication while the grammar of programming language follows specific syntax.

Q3) What is Compilation Vs Interpretation?

|  |  |
| --- | --- |
| Complier | Interpreter |
| Scans the entire program and translates it as a whole machine code. | Translates program one statement at a time. |
| Compilers usually take a large amount of time to analyze the source code. However, the overall execution time is comparatively faster than interpreters. | Interpreters usually take less amount of time to analyze the source code. However, the overall execution time is comparatively slower than compilers. |
| Generates intermediate object code which further requires linking, hence requires more memory efficient. | No intermediate object code is generated, hence are memory efficient. |
| Programming languages like C, C++, Java use compliers. | Programming languages like JavaScript, Python, Ruby use interpreters. |

Q4) What Does Interpreter actually Do ?

An interpreter is a computer program, which coverts each high-level program statement into the machine code. This includes source code, pre-compiled code, and scripts. Interpreters convert code into machine code when the program is run.

Q5) What is Python ?

Python is an interpreted, object-oriented, high level programming language.

Q6) What are Characteristics of Python ?

* A programming language must be simple, easy to learn and use, have good readability and human recognizable.
* Abstraction is a must-have Characteristics for a programming language in which ability to define the complex structure and then its degree of usability comes.
* A portable programming language is always preferred.
* Programming language’s efficiency must be high so that it can be easily converted into a machine code and executed consumes little space in memory.
* A programming language should be well structured and documented so that it is suitable for application development.
* Necessary tools for development, debugging, testing, maintenance of a program must be provided by a programming language.
* A programming language should provide single environment known as Integrated Development Environment(IDE).
* A programming language must be consistent in terms of syntax and semantics.

Q7) What are features of Python ?

**1. Easy to Code**

**2. Free and Open Source**

**3. Object-Oriented Language**

**4. High level language**

**5. GUI programming support.**

Q8) What are different flavours of Python ?

**1. Cpython**

**2. Jpython**

**3. IronPython**

**4. Pypy**

**5. Stackless Python**.