Q1: Collect information about 5 different libraries we use with Python in Advance Programming.

**Python Library:**

Python library is a collection of functions and methods that allows you to perform many actions without writing your code.

Some Libaries of python are listed below;

**1.**[**Requests**](http://www.python-requests.org/)**:**

The most famous http library written by kenneth reitz. It’s a must have for every python developer. This library is the de facto standard for making HTTP requests in Python

**2. TensorFlow:**

This library was developed by Google in collaboration with Brain Team. TensorFlow is used in almost every Google application for machine learning.

TensorFlow works like a computational library for writing new algorithms that involve a large number of tensor operations, since neural networks can be easily expressed as computational graphs they can be implemented using TensorFlow as a series of operations on Tensors. Plus, tensors are N-dimensional matrices which represent your data.

**3. SQLAlchemy:**

SQLAlchemy provides a nice “Pythonic” way of interacting with databases. So rather than dealing with the differences between specific dialects of traditional SQL such as MySQL or PostgreSQL or Oracle, you can leverage the Pythonic framework of SQLAlchemy to streamline your workflow and more efficiently query your data.

**4. [NumPy](http://numpy.scipy.org/):**

Numpy is a general-purpose array-processing package. It provides a high-performance multidimensional array object, and tools for working with these arrays. It is the fundamental package for scientific computing with Python.  
Besides its obvious scientific uses, Numpy can also be used as an efficient multi-dimensional container of generic data.

**5. Pandas:**

Pandas is a machine learning library in Python that provides data structures of high-level and a wide variety of tools for analysis. One of the great feature of this library is the ability to translate complex operations with data using one or two commands. Pandas have so many inbuilt methods for grouping, combining data, and filtering, as well as time-series functionality.

Q2: What you understand by pip command? When and where do we use it? Give example

Pip is one of the most famous and widely used package management system to install and manage software packages written in Python and found in Python Package Index (PyPI). Pip is a recursive acronym that can stand for either "Pip Installs Packages" or "Pip Installs Python". Alternatively, pip stands for "preferred installer program".

From Python version 3.4, PIP command is pre-installed. Before ,we had to install it first with python. It is used when we are in need to install/manage different Python Packages and modules.

**Example:**

pip uninstall camelcase : Removes CamelCase Module

Q3: Can you write an algorithm for finding area of trapezoid?

**Algorithm:**

Input a = “Enter Base 1 of Trapizoid”

Input b = “Enter Base 2 of Trapizoid”

Input h = “Enter height of Trapizoid”

A = ((a+b)/2)\*h

Print ” Area of Trapizoid is “ = A

Q4: What you understand by data types? How they are helpful in doing programming?

Data types are the classification or categorization of data items. It represents the kind of value that tells what operations can be performed on a particular data. Since everything is an object in Python programming, data types are actually classes.

They are helpful in distinguishing different values, calculation, understanding and working is also easier when there are Data Types mentioned.

Q5: Consider you are opening a bank account, for this you need some data to submit to bank. Write each data with its data type by writing a small program.

**Program:**

name = input("Enter Your name:")  
age = input("Enter Your Age:")  
phone\_no = input("Enter Your Phone Number:")  
address = input("Enter your Address:")  
city = input("Enter your city:")  
postal\_code = int(input("Enter Postal Code:"))  
money\_with= input("Enter Total Received amount:")  
money\_dep = input("Enter Total doposited amount:")  
print("Name:",name)  
print("age",age)  
print("phone number:",phone\_no)  
print("address:",address)  
print("city",city)  
print("Postal Code",postal\_code)  
print("Total Amount Withdrawn",money\_with)  
print("Total Amount Deposted",money\_dep)  
print("Current Account Balance",str(int(money\_dep)-int(money\_with)))