**Q1: Define Object oriented programming language?**

**Ans:** Object-oriented programming (OOP) is a programming language model in which programs are organized around data, or objects, rather than functions and logic. An object can be defined as a data field that has unique attributes and behavior. Examples of an object can range from physical entities, such as a human being that is described by properties like name and address, down to small computer programs, such as widgets. This opposes the historical approach to programming where emphasis was placed on how the logic was written rather than how to define the data within the logic.

**Q2: List Down The benefits of OOP?**

1. It provides a clear modular structure for programs which makes it good for defining abstract datatypes in which implementation details are hidden
2. Objects can also be reused within an across applications. The reuse of software also lowers the cost of development. More effort is put into the object-oriented analysis and design, which lowers the overall cost of development.
3. It makes software easier to maintain. Since the design is modular, part of the system can be updated in case of issues without a need to make large-scale changes
4. Reuse also enables faster development. Object-oriented programming languages come with rich libraries of objects, and code developed during projects is also reusable in future projects.
5. It provides a good framework for code libraries where the supplied software components can be easily adapted and modified by the programmer. This is particularly useful for developing graphical user interfaces.
6. Better Productivity as OOP techniques enforce rules on a programmer that, in the long run, help her get more work done; finished programs work better, have more features and are easier to read and maintain.

**Q3: Difference between function and method?**

**Ans:** A function is a piece of code that is called by name. It can be passed data to operate on (i.e. the parameters) and can optionally return data (the return value). All data that is passed to a function is explicitly passed.

A method is a piece of code that is called by a name that is associated with an object. In most respects it is identical to a function except for two key differences:

A method is implicitly passed the object on which it was called.

A method can operate on data that is contained within the class (remembering that an object is an instance of a class - the class is the definition; the object is an instance of that data).

**Q4**: **Define the following terms:**

1. **Class:** Classes (OOP) In object-oriented programming, a class is a blueprint for creating objects a data structure providing initial values for state member variables or attributes and implementations of behavior (member functions or methods).
2. **Object:** An object is a instance of the class through which we can access the data members and functions of another class.
3. **Attribute:** Attribute is a property of a class it can be anything (e.g.: age , height, phon\_number) it depends upon the class.
4. **Behavior: .** A class's behavior determines how an instance of that class operates; for example, how it will "react" if asked to do something by another class or object or if its internal state changes. Behavior is the only way objects can do anything to themselves or have anything done to them.

Q6

