**Module-1**

**SE- Overview of IT Industry**

**Q.1.) What is software? What is software Engineering?**

Ans.) Software is a collection of instructions, data, or computer programs that are used to run machines and carry out particular activities

It is a branch of engineering that deals with the development of software products.

It operates within a set of principles, best practices and methods that have been carefully honed throughout the years, changing as software and technology change.

**Q.2.) Explain types of software**

Ans.) Types of Software are:-

* Application Software
* System Software
* Programming Software
* Driver Software

1.)Application Software:-

Software that perform special functions or provides function that are much more than the basic operation of the computer is known as application software.

Application software is designed to perform a specific task for end-users.

Examples are:- Microsoft Paint, Word, Excel and Powerpoint

2.) System Software:-

System software is software that directly operates the computer hardware and provides the basic functionality to the users as well as to the other software to operate smoothly.

Example:-

Calculator, notepad,etc.

3.) Programming Software

Programming software is a tool for creating computer code that allows computer software to operate. The computer technology field frequently uses overlapping terminology, which can be perplexing.

Examples of Programming software are:- Sublime, VSCode, Eclipse, IntelliJ IDEA, Turbo C,etc..

4.) Driver Software:-

Driver software, often simply referred to as a "driver," is a type of computer program that facilitates communication between a computer's operating system (OS) and a hardware device.

These hardware devices can include components like printers, graphics cards, network adapters, sound cards, and many others.

Examples:- Audio Driver, Video Driver

**Q.3) What is SDLC? Explain each phase of SDLC**

Ans.) Software Development Life Cycle(SDLC) is a process that defines the various stages involved in the development of software for delivering a high-quality product.

SDLC Phases:-

* Requirement gathering and analysis
* Design
* Implementation or coding
* Testing
* Deployment
* Maintenance

1.) Requirement gathering and analysis

During this phase, all the relevant information is collected from the customer to develop a product as per their expectation. Any ambiguities must be resolved in this phase only.

Business analyst and Project Manager set up a meeting with the customer to gather all the information like what the customer wants to build, who will be the end-user, what is the purpose of the product. Before building a product a core understanding or knowledge of the product is very important.

2.) Design

In this phase, the requirement gathered in the SRS document is used as an input and software architecture that is used for implementing system development is derived.

3.) Implementation or Coding

Implementation/Coding starts once the developer gets the Design document.

The Software design is translated into source code. All the components of the software are implemented in this phase.

4.) Testing

Testing starts once the coding is complete and the modules are released for testing.

In this phase, the developed software is tested thoroughly and any defects found are assigned to developers to get them fixed.

Retesting, regression testing is done until the point at which the software is as per the customer’s expectation. Testers refer SRS document to make sure that the software is as per the customer’s standard.

5.) Deployment

Once the product is tested, it is deployed in the production environment is done depending on the customer expectation.

6.) Maintenance

After the deployment of a product on the production environment, maintenance of the product.

i.e. if any issue comes up and needs to be fixed or any enhancement is to be done is taken care by the developers.