1. Explain SDLC at a high level

Software Development Life Cycle (SDLC) is a process used by the software industry to design, develop and test high quality software’s.  It consists of a detailed plan describing how to develop, maintain, replace and alter or enhance specific software.

SDLC consist of 6 steps

1. Planning and Requirement Analysis - Requirement analysis is the most important and fundamental stage in SDLC This information is then used to plan the basic project approach and to conduct product feasibility study in the economical, operational and technical areas.

Planning for the quality assurance requirements and identification of the risks associated with the project is also done in the planning stage

1. **Defining Requirements -** Once the requirement analysis is done the next step is to clearly define and document the product requirements and get them approved from the customer or the market analysts. This is done through an SRS (Software Requirement Specification) document which consists of all the product requirements to be designed and developed during the project life cycle.
2. **Designing the Product Architecture** – SRS is the reference for product architects to come out with the best architecture for the product to be developed. Based on the requirements specified in SRS,
3. **Building or Developing the Product –** The programming code is generated as per DDS during this stage. If the design is performed in a detailed and organized manner, code generation can be accomplished Developers must follow the coding guidelines defined by their organization and programming tools like compilers, interpreters, debuggers, etc. are used to generate the code. Different high level programming languages such as C, C++, Pascal, Java and PHP are used for coding. The programming language is chosen with respect to the type of software being developed

1. **Testing the Product** – The only stage of the product where product defects are reported, tracked, fixed and retested, until the product reaches the quality standards defined in the SRS.
2. **Deployment and Maintenance - Once** the product is tested and ready to be deployed it is released formally in the appropriate market. Then based on the feedback, the product may be released as it is or with suggested enhancements in the targeting market segment. After the product is released in the market, its maintenance is done for the existing customer base

2 .What is waterfall model and its revlence

The Waterfall model is the earliest SDLC approach that was used for software development.

The waterfall Model illustrates the software development process in a linear sequential flow. This means that any phase in the development process begins only if the previous phase is complete. In this waterfall model, the phases do not overlap

The advantages of waterfall model are that it allows for departmentalization and control. A schedule can be set with deadlines for each stage of development and a product can proceed through the development process model phases one by one.

The disadvantage of waterfall development is that it does not allow much reflection or revision. Once an application is in the testing stage, it is very difficult to go back and change something that was not well-documented

**Consist of 6 steps**

1. **Requirement Gathering and analysis** − All possible requirements of the system to be developed are captured in this phase
2. **System Design** − The requirement specifications from first phase are studied in this phase and the system design is prepared. This system design helps in specifying hardware and system requirements and helps in defining the overall system architecture
3. **Implementation** − with inputs from the system design, the system is first developed in small programs called units, which are integrated in the next phase. Each unit is developed and tested for its functionality, which is referred to as Unit Testing
4. **Integration and Testing** − All the units developed in the implementation phase are integrated into a system after testing of each unit. Post integration the entire system is tested for any faults and failures
5. **Deployment of system** − Once the functional and non-functional testing is done; the product is deployed in the customer environment or released into the market.
6. **Maintenance** − There are some issues which come up in the client environment. To fix those issues, patches are released. Also to enhance the product some better versions are released. Maintenance is done to deliver these changes in the customer environment.

3. Explain Agile Model with a use case and the role of SCRUM in that

**Agile Model** - Agile methodology is a practice that helps continuous iteration of development and testing in the SDLC process. Agile breaks the product into smaller builds.

In this methodology, development and testing activities are concurrent, unlike other software development methodologies. It also encourages teamwork and face-to-face communication. Business, stakeholders, and developers and clients must work together to develop a product.

Scrum - we’re developing a project, and the project is divided into 10 units. All the 10 units are processed in each iterations and each iteration is set to last for four weeks. And the developer team was not able to complete some units processing, that’ll be taken care in the next iteration. This is also how SCRUM works (SCRUM follows Agile methodology). In SCRUM each iteration is called a SPRINT and at the end of each SPRINT, we’ll have a potentially deliverable software

4. Who is Scrum Master

Allows a team to self-organize and make changes quickly, in accordance with agile principles. The scrum master manages the process for how information is exchanged

5. Differentiate between Product/Sprint Backlog

**Product Backlog** - is a to-do list for the team – a list of all of a product’s features in priority order. The product owner collects backlog from customers and assigns to the team. And the product backlog will be maintained until the entire project completion.

**Sprint Backlog** - It is the list of items that need to be completed in the Sprint .The team collects the backlog from the Product Owner and decide the time frame to complete it during each sprint

6. What is Epic & Story

An Epic is a large body of work that can be broken down into many smaller pieces of work – Stories

7. What is called Velocity in SCRUM

It is the capacity of a team to complete one Sprint

8. Explain the SCRUM ceremonies

* **Organizing backlog:** - Here we’ll be listing all the stories of the product and with the help of Scrum master we’ll be organizing it as a backlog.
* **Sprint planning** :- Here we’ll be assigning the stories which need to be processed in each Sprint
* **Daily Scrum**: - Here scrum master organizes daily meetings with the team for discussing their progress, issues they face etc.
* **Sprint Review** :- This is a meeting that takes place at the end of the sprint were product owner ,scrum master, stakeholders, developers etc will be discussing/analysing just completed features of a particular sprint
* **Sprint Retrospective**: - This is another meeting where the scrum master go for an overall analysis to check what are the failures happened, what were the methodologies that they didn’t follow etc.

9 . What is grooming

Grooming is an open discussion between the development team and client The user stories are discussed to help the team gain a better understanding of the functionality that is needed to fulfill a story. This includes design considerations, integrations, and expected user interactions

10 . How Jira board is effective in SCRUM

Jira is used for issue tracking and project management  Developers can use jira board for planning their work in sprint. And it includes backlog

11 .Differentiate between SCRUM and waterfall

**Waterfall**: The waterfall development model or traditional software development life cycle. Its working approach is linear and sequential; it completes one activity before starting the other activity. Waterfall’s working style break up the work into the requirement, analysis, design, coding and testing, and term that phases.

**Scrum**: This is a member of the agile family. Scrum puts the focus on the management and development of the project. The scrum process is used to manage, develop, and deliver the project on time. Scrum works best for complex projects and innovative solutions are delivered.

12 . Explain the responsibilities of Product Owner

The agile product owner is the point person on the product development team, using their high-level perspective to define goals and create a vision for development projects. One of the most important responsibilities for a scrum product owner is managing the product backlog. This is the development team’s project to-do list. Product owner should spend a significant amount of time overseeing the actual development of the product.