**Assignment – Module 1**

**( Fundamental )**

Answer the Following questions:

1. What is SDLC ?

Ans: SDLC stands for Software Development Life Cycle which comprise of steps or phrases such as (Requirement Gathering, Analysis, design, implementation, Testing, Maintenance) that provide a model or process for the development of Software product and lifecycle management of software.

2. What is software Testing?

Ans: Software testing is not only restricted to execution of software as test execution only part of testing, not all of the testing activates. Software testing is the task or process of evaluating the software and its components with intent to find that whether it satisfy the specified requirements or not.

3. What is Agile Methodology ?

Ans: Agile Methodologies within SDLC is a combinations of iterative and incremental process model with focus on adaptability and customer satisfaction by rapid delivery of working software. Agile methodologies works on four manifesto A) interaction over process B) Working software C) customer collaboration D) Responding to Change.

4. What is SRS ?

Ans: A software requirements specifications is roadmap or description of the behaviour of the software system to be developed. It comprises of four elements: A) Define product’s purpose B) Describe what you are building C) Details the requirements D) deliver it for approval.

5. What is OOPS ?

Ans: OOP is an object-oriented programming technique that combines data and instructions for processing that data into an object that can be used within the program. It can help modelling complicated systems of real world into manageable software solutions.

6. Write Basic Concepts of oops.

Ans: Object-Oriented Programming (OOP) is a programming paradigm in computer science that relies on the concept of **classes** and **objects.** The basic concepts of oops are the following:

A) Class

B) Objects

C) Encapsulation

D) Polymorphism

E) Inheritance

F) Abstraction

7. What is object?

Ans: Collection of objects*is called class.* It is a logical entity. It is the collection of data member (variables) and member function( Process, methods ) with its behaviour. I.e.: Classroom, House.

8. What is encapsulation?

### Ans: Encapsulation is wrapping up of data and code together into single unite, for example: House, it is wrapped with furniture, Rooms, Kitchen etc.

### 9. What is inheritance?

### Ans: inheritance is an important part of OOPS where we can expand the properties and behavior of a parent object into child class. When you inherit from an existing class, you can reuse methods and fields of the parent class. Moreover, you can add new methods and fields in your current class also.

### There are 5 types of inheritance.

### A) Single B) Multiple C) Multilevel D) Hybrid E) Hierarchical

### 10. What is polymorphism?

### Ans: **Polymorphism** is a concept in OOPS by which we can perform a single action in different ways*.* So it has an ability to take one name having many forms. There are two types: A) Method Overloading B) Method Overwriting.

### 11. Write SDLC phases with basic introduction.

### Ans: A software development life cycle is essentially a series of steps or phases that provide a model for development and lifecycle management of software product. The methodology within SDLC is vary across industry and organization but standards of it represent process that establish a lifecycle of software and provide a mode for development, acquisition and configuration of software product. The phases of SDLC are following.

A) Requirements Gathering

B) Analysis

C) Design

D) Implementation

E) Testing

F) Maintenance

### 12. Explain Phases of the waterfall model.

### Ans: The Waterfall Model was the first Process Model within SDLC to be introduced. It is also referred to as liner-sequential life cycle model which is very simple and easy to understand. In this model each phase is not begin until the previous phase has completed and there is not overlapping in the phases. It was widely used first SDLC model in software engineering to ensure the success of the project. In this model whole process of software development is divided into separate phases.

### Requirement Gatherings

Analysis

Implementation

Testing

Maintenance

1. Requirement Gatherings: In this phase all possible requirements such as Functional, Non-Functional, External system Requirements to be developed are captured and documented in SRS( software requirements Specification Document).
2. Analysis: This phase explains how these requirements will be accomplished and this documents stats clear and precise fashion what is to be built.
3. Design: The design team prepare the design of test case, test plan, system architecture, implementation plan documents by using or studying the requirement document. The architecture team also converts typical scenarios into a test plan.
4. Implementation: The implementation phase executes your project plan and prepared design to produce the desired product. In this phase construction of software product and integration of its components is happening and there is still a room for change and innovation.
5. Testing: Testing validates that the developed software product in the implementation phase fulfil the requirements of Clients. If not then Project team must review the project from scratch to identify where they went wrong.
6. Maintenance: This phase involves making modifications and adopting new changes on existing developed software to improve it and keeps it relevant on market.

13. Write phases of spiral model.

Ans: It is the combination of waterfall and iterative model but more emphasis on risk analysis. This model has four phases: A) Planning B) Design c) construct D) Evaluation A software project repeatedly passes through these phases in iteration called spiral.

14. Write agile manifesto principles.

Ans: Agile methodologies works on 4 manifesto principles:

1. Individual interaction over the process.
2. Working software
3. Customer collaboration over contract negotiation
4. Responding to change over following a plan

15. Explain working methodology of agile model and also write pros and cons.

Ans: Agile methodology is the combination of iterative and incremental model with more focus on process adaptability and customer satisfaction by delivering working software product in quick manner.

* This methodology develop the software product in small incremental builds.
* This builds work in iteration base.
* Every iteration Involves various area like planning, Requirement gathering, analysis, design, implementation, UT/IT/UAT, performance testing, load testing, deployment.
* At the end of every iteration working product is displayed to the customer and stakeholders.

Pros:

* Realistic approach
* Resource requirements are minimum
* Suitable for fixed and changing requirements
* Deliver working software
* Little or no planning required that gives flexibility to developers
* Functionality can be developed rapidly

Cons:

* Not appropriate for dealing with complex dependencies.
* Agile leader and agile PM practise is must without which it will not work
* Depends heavily on customer interaction so that if customer is not clear then all team can be driven in the wrong direction.
* Transfer of technology to new team member is quite challenging due to lack of documentation and use-case.

16. Draw Usecase on online bill payment system (paytm).

Ans: 1. Open an application 2. Enter the pin or fingerprint if this is enabled on 3. Find the payment option using search box or under payment lists 4. Click on electricity 5, Enter the service provider name and customer number 5. Click on processed to pay 6. Select the payment mode 7. Click on confirm to pay 8, Getting the message of transaction successful 9. Get the payment receipt by clicking on Print Button 10. Click on The Back button to Go To Home page.

17. Draw Usecase on Online book shopping.

Ans: 1. Open an app by signing in or using Mobile no with an OTP.

2. Search the book name you want to purchase on the search box or going into shopping categories.

3. click on the Book Image or Purchase button.

4. Review the images of books

5. check the pincode to get the delivery

6. click on Add to cart

7. Add the quantity you need to buy

8. Apply the discount coupen you are eligible to

9. add the delivery address where you want the book to delivered

10. Click on the payment mode

11. Click on processed to pay

12. get the messege of order confirmed

13. Get the invoice or payment receipt by clicking on Print Button

14. click on the track button to track the delivery

15. go to home page to Buy other product.