**Software Testing Assignment**

Module–1(Fundamental)

1 What is SDLC?

Software Development Life Cycle (SDLC) is a process used by the software industry to design, develop and test high quality software. The SDLC aims to produce high-quality software that meets or exceeds customer expectations, reaches completion within times and cost estimates.

2 What is software testing?

**Software Testing is Important** because if there are any bugs or errors in the software, it can be identified early and can be solved before delivery of the software product. Properly tested software product ensures reliability, security and high performance which further results in time saving, cost effectiveness and customer satisfaction.

3 What is agile methodology?

The Agile methodology is a way to manage a project by breaking it up into several phases. It involves constant collaboration with stakeholders and continuous improvement at every stage. Once the work begins, teams cycle through a process of planning, executing, and evaluating. Continuous collaboration is vital, both with team members and project stakeholders.

4 What is SRS

A software requirements specification (SRS) is a document that captures complete description about how the system is expected to perform. It is usually signed off at the end of requirements engineering phase.

5 What is oops

Object-oriented programming (OOP) is a computer programming model that organizes software design around data, or objects, rather than functions and logic. An object can be defined as a data field that has unique attributes and behavior.

6 Write Basic Concepts of oops

Now, there are four fundamental concepts of Object-oriented programming – Inheritance, Encapsulation, Polymorphism, and Data abstraction. It is very important to know about all of these in order to understand OOPs.

7 What is object

An object is a software bundle of variables and related methods.

8 What is class

In [object-oriented programming](https://www.javatpoint.com/what-is-object-oriented-programming), a **class** is a basic building block. It can be defined as template that describes the data and behaviour associated with the class instantiation. Instantiating is a class is to create an object (variable) of that class that can be used to access the member variables and methods of the class.

9 What is encapsulation

 In object-oriented computer programming (OOP) languages, the notion of encapsulation (or OOP Encapsulation) refers to the bundling of data, along with the methods that operate on that data, into a single unit. Many programming languages use encapsulation frequently in the form of classes. A class is a program-code-template that allows developers to create an object that has both variables (data) and behaviors (functions or methods). A class is an example of encapsulation in computer science in that it consists of data and methods that have been bundled into a single unit.

10 What is inheritance

Inheritance is a term used in Object Orientated programming that allows one class to inherit properties from another class. The class being inherited is often referred to a super class. The class that inherits a super class is a subclass. Inheritance is great for increasing code reuse.

11 What is polymorphism

**Polymorphism** is an object-oriented programming concept that refers to the ability of a variable, function, or object to take on multiple forms. In a programming language exhibiting polymorphism, class objects belonging to the same hierarchical tree (inherited from a common parent class) may have functions with the same name, but with different behaviors.

12 What is RDBMS

The software used to store, manage, query, and retrieve data stored in a relational database is called a relational database management system (RDBMS). The RDBMS provides an interface between users and applications and the database, as well as administrative functions for managing data storage, access, and performance.

13 What is SQL

SQL stands for Structured Query Language. It is a programming language that is used to request information from a database. SQL can be used to manage and share data in a relational database management system. Moreover, users can perform actions like insertion, deletion, selection, etc on the database

14 Write SQL Commands

SELECT - extracts data from a database

UPDATE - updates data in a database

DELETE - deletes data from a database

INSERT INTO - inserts new data into a database

CREATE DATABASE - creates a new database

ALTER DATABASE - modifies a database

CREATE TABLE - creates a new table

ALTER TABLE - modifies a table

DROP TABLE - deletes a table

CREATE INDEX - creates an index (search key)

DROP INDEX - deletes an index

15 Write SDLC phases with basic introduction

Software Development Life Cycle is the application of standard business practices to building software applications. It’s typically divided into six to eight steps: Planning, Requirements, Design, Build, Document, Test, Deploy, Maintain. Some project managers will combine, split, or omit steps, depending on the project’s scope. These are the core components recommended for all software development projects.

16 Explain Phases of the waterfall model

The five-stage waterfall model, which is based on the requirements of Winston W. Royce, divides development processes into the following project phases: analysis, design, implementation, testing, and operation. The diagram already shows an extension of the model required by Royce: the verification of the results of each phase, taking into account the previously elaborated requirements and specifications.

17 Write phases of spiral model

The spiral model has four phases: Planning, Design, Construct and Evaluation. A software project repeatedly passes through these phases in iterations (called Spirals in this model).

18 Write agile manifesto principles

The four core values of Agile software development as stated by the Agile Manifesto are:

individuals and interactions over processes and tools;

working software over comprehensive documentation;

customer collaboration over contract negotiation; and.

responding to change over following a plan.

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

Agile methodology is a project management strategy that divides the project into multiple phases, encouraging continuous improvement for each phase. In the beginning of the project, the team cycles through planning, evaluation and execution stages to collaborate toward multiple project goals. As a methodology, the agile project strategy contains four fundamental values, including: