Module -1

Q1. What is SDLC?

* SDLC is SYSTEM DEVLOPMENT LIFE CYCLE.sdlc is process of developing information system.
* There is six phase.
* 1.requirement analysis
* 2.designing
* 3.devlopment
* 4.testing
* 5.deployment
* 6.maintance

Q2.What is software testing?

* Software testing is the process of evaluating a software application to find and fix bugs and ensure it works correctly, meets requirements, and delivers a quality user experience.

Q3. Write sdlc phase with basic introduction?

1. **Requirement analysis**: accept the basic information. It is the process of identifying, gathering and defining the needs and expectation of stakeholders for a new modified product, system or project.
2. **Designing:** architecture of project, blue print. It is the process of planning and creating and arranging elements to achieve a specific purpose or solve a problem.
3. **Development**: that means selected information created to developer. development refers to the process of growth, progress or improvement over time.
4. **Testing**: testing is the process of examining, evaluating, or verifying something to see if it works correctly meets standarad, or performs as expected.
5. **Deployment**: deployment refers to the act of putting something into use or action, especially after it has been developed or prepared.
6. **Maintance** : **Maintenance** is the process of **preserving, repairing, or regularly checking something** to keep it in good working condition

Q4. What is integration testing?

* **Integration testing** is a type of software testing where **individual modules or components are combined and tested as a group.**

Q5. What is alpha testing?

* **Alpha Testing** is a type of software testing done by the internal team to find bugs before releasing the product to real users.

Q6. what is beta testing?

* like Beta Testing is a type of software testing where the product is given to real users outside the company to use and give feedback before the final .

Q7. What is gul testing?

* Gul testing is that checks the visual elements of an application like.font size,logo,name,layout.

Q8.what is load testing?

* Load testing is a type of software testing that check how a website or application performs when many users access it at the same time.

Q9.what is stress testing?

* Stress testing is a type of software testing that check load decrease or increase.

Q10. What is 7 key principles?Explain in detail?

* 1.Testing shows the presence of defects
* 2. Exhaustive testing is not possible
* 3. Early testing
* 4. Defect culstering
* 5. Pesticide paradox
* 6. Testing is context-dependent
* 7. Absence of errors fallacy

Given below details .

1.TESTING SHOWS THE PRESENCE OF DEFECTS : Testing

helps find bugs or errors in the software. It **does not prove** that the software is perfect or error-free. Even after a lot of testing, **some bugs may still remain**.

2. Exhaustive testing is not possible :

You cannot test **all possible inputs, paths, or scenarios** in any software.There are **too many combinations**. Instead of testing everything, we focus on the **most important parts.**

3. Early testing :

Testing activities should start as early as possible in the software development life cycle (SDLC).Early detection of defects is cheaper and easier to fix.

4. . Defect culstreing :

A small number of modules usually contain most of the defects (80/20 rule or Pareto Principle).Focus testing efforts on areas where defects are concentrated.Most bugs are usually found in **a few specific modules** or areas of the software.

5. Pesticide paradox :

If you keep testing with the **same set of test cases**, you will stop finding new bugs. Test cases need to be regularly reviewed and updated to find new bugs.

6.Testing is context-dependent :

Testing approach should **change depending on the software type**. Different types of software require different testing methods and strategies.

7.Absence of errors fallacy :

Just because a software application is bug-free doesn’t mean it is useful.Software that doesn’t meet user needs is a failure

Q11.diffrence between QA v/s QC v/s tester?

|  |  |  |  |
| --- | --- | --- | --- |
| **Point** | **QA (Quality Assurance)** | **QC (Quality Control)** | **Tester** |
| 1 | Focuses on **process** | Focuses on **product** | Focuses on **testing the product** |
| 2 | **Prevention-based** – makes sure mistakes don’t happen | **Detection-based** – finds mistakes after they happen | Finds **bugs and errors** in the application |
| 3 | Involves planning, documentation, and improving development process | Involves actual checking, reviewing, and validation | Executes **test cases**, reports bugs |
| 4 | Done **before** development/testing starts | Done **after** product is built | Works during and after development |
| 5 | Handled by **QA Engineers** or Managers | Handled by **QC team** | Done by **Testers** or QA Testers |

Q12.difference between smoke and sanity?

|  |  |  |
| --- | --- | --- |
| **Point** | **Smoke Testing** | **Sanity Testing** |
| 1 | Done to **check basic functionality** | Done to **check specific bug fix or feature** |
| 2 | Like "Is app stable enough for further testing?" | Like "Does this new feature or fix work properly?" |
| 3 | It is a **shallow & wide** testing | It is a **deep & narrow** testing |
| 4 | Done on **initial build** | Done on **new build after small changes** |
| 5 | Covers **all major parts** quickly | Focuses only on **affected areas** |
| 6 | Usually **automated** | Usually **manual** (but can be automated too) |
| 7 | Decides if build is **testable** or not | Decides if build is **working correctly** after changes |
| 8 | Example: App opens, login works, main menu shows | Example: Developer fixed login bug, tester checks only login now |

Q13.what is RDBMS?

* **Relational Database Management System**.
* Data is stored in the form of **rows and columns** (like Excel).
* you can create **relationships** between different tables.
* Tubular format row and columns
* **Oracle, SQL Server, PostgreSQL** ,mysql

Q14.What is sql?

* **SQL** stands for **Structured Query Language**.
* **This language ues to communicate with databases**.
* It works with **RDBMS** like MySQL, Oracle, SQL Server, etc

Q15.write sql commands

* 1. **CREATE TABLE**
* 2. **INSERT INTO**
* 3. **SELECT**
* 4. **WHERE**
* 5. **UPDATE**
* 6. **DELETE**
* 7. **DROP TABLE**

**Q16.what is an sql alias?**

* **SQL Alias** is a temporary **name** given to a **table** or a **column** in a query.

👉 It is used to:

* Make column or table names **shorter** or **easier to read**
* Give columns or tables a **custom label** in results

Q17.write a query to create the table in structured query language.

* CREATE TABLE Students (
* StudentID INT PRIMARY KEY,
* FirstName VARCHAR(50),
* LastName VARCHAR(50),
* Age INT,
* Email VARCHAR(100),
* AdmissionDate DATE
* );

Q18.write a query to insert data into table.

* INSERT INTO table\_name (column1, column2, column3)VALUES (value1, value2, value3);

Q19.write a query to update data into table with validations.

* UPDATE table\_name SET column1 = value1, column2 = value2WHERE condition;

Q20.write a query to delete data into table with validaons.

* DELETE FROM table\_name WHERE condition;

Q21.write a query to new column in exsting table.

* ALTER TABLE table\_name ADD column\_name data\_type;

Q22.write a query to drop table database.

* DROP TABLE table\_name;

Q23.what is api testing.

* application programing interface.
* **API Testing** is the process of **testing the communication** between two software systems (backend & frontend) using **API requests and responses**.

Q24.typs of api testing.

* application programing interface.
* There are two types
* 1.soap api
* 2.rest api

Q25.what is responsive testing.

* **Responsive Testing** is the process of checking whether a **website or web application** looks and works correctly on **different screen sizes** and **devices** (mobile, tablet, laptop, desktop).

Q26.what is oops.

* **OOPs** stands for **Object-Oriented Programming System**.
* class , object , encapsulation , inheritance, polymorphism ,abstraction .
* It's a programming paradigm based on the concept of **"objects"**, which can contain data and code

Q.27 what is basic concepts of oops.

* class , object , encapsulation , inheritance, polymorphism ,abstraction .
* its object oriented programming system

Q28.what is class?

* A class is thus a collection of data member and member function.
* accessmodifer  - public , private , protected, default

syntax : accessmodifer classkeyword classname {

  }

Q29.what is object?

* one type of variable which store multiple data
* It's a real-world entity with state and behavior.

Q30.what is encapsulation?

* Encapsulation is the data wraping  class.
* That means data hiding like data or method

public class xyz {  
      data(){  
name="manual testing"

  }  
}

Q31.what is polymorphism?

* - one interface and multiple implementation
* The ability of different classes to respond to the same method call in different ways.
* There are two types polymorphism.
* 1 method over loading
* 2 method overriding
* 1 method over loading - 1 class - multiple method - name same but data diff (parameter)
* 2 method overriding - 1 class - multiple method - name same nd data (parameter)

Q32.what is inheritance?

* child class can use the functinality of parent class using extend keyword
* using a concept called inheritance new class can be built from the old ones.
* There are FIVE types of inheritance.
* 1.single inheritance
* 2.multilevel inheritance
* 3.multipal inheritance
* 4.hybrit inheritance
* 5.hierarchical inheritance

Q33.what is abstraction?

* Hiding complex implementation details and showing only essential features.
* Example: Using an abstract class or interface.

Q34.write sdlc phase with basic introduction?

* 1.requirement analysis
* 2.designing
* 3.devlopment
* 4.testing
* 5.deployment
* 6.maintance
* 1.requirement analysis : It's the **first phase** of the **Software Development Life Cycle (SDLC)** where the development team and stakeholders gather and analyze **what the client wants**.
* 2.designing : Plan how the software will look and work.Design UI, database, and system architecture.Prepare technical specifications.
* 3.devlopment : Start writing the actual code.Develop the software based on the design.  
  Each module is coded by developers.
* 4.testing : Check if the software works correctly.Find bugs or errors.  
  Make sure the software meets all requirements.
* 5.deployment : Release the software to the user or client.Install it on the live environment.  
  Users start using the product.

* 6.maintance : Fix any issues after release.Provide updates or add new features.  
  Ensure smooth working of the software.

Q35.what is joion?

* One type of Marge in two table .
* Use for data is often stored in **multiple tables**, JOIN helps you bring it together to get full information

Q36.write a jion typs?

* There is four fo join.
* 1.inner join
* 2.left join
* 3.right join
* 4.full join