1.What is the primary goal of manual testing?

a)To find defects in software

b)To automate the testing process

c)To reduce the time required for testing

d)To increase the efficiency of developers

2.Which of the following is NOT a phase of the manual testing process?

a)Test Planning

b)Test Execution

c)Test Automation

d)Test Closure

3.Which type of testing involves testing the software as a whole to ensure that all components work together?

a)Unit Testing

b)Integration Testing

c)System Testing

d)Acceptance Testing

4.Which testing technique involves testing a system's functionality without knowing its internal code structure?

a)White-box testing

b)Black-box testing

c)Gray-box testing

d)Glass-box testing

5.What is exploratory testing?

a)Testing based on pre-defined test cases

b)Testing without any specific test cases or plans

c)Testing only the critical functionalities

d)Testing performed by an external team

6.What is the result of my\_list[2] if my\_list = [10, 20, 30, 40]?

A) 10

B) 20

C) 30

D) 40

7.Which method is used to add an element to the end of a list in Python?

A) append()

B) insert()

C) extend()

D) add()

8.What does my\_list[::-1] do in Python?

A) Reverses the list

B) Returns the last element of the list

C) Sorts the list in descending order

D) Returns a copy of the list

9.Which data structure is used to store unique elements in Python?

A) List

B) Tuple

C) Set

D) Dictionary

10.How do you check if an element is present in a set?

A) Using contains()

B) Using in keyword

C) Using has()

D) Using exists()

11.What is the data type of the result in the following expression: 10 / 2?

a)int  
b)float  
c)str  
d)bool

12.Which data type is used to represent a sequence of characters in Python?

a)int  
 b) float  
 c)str  
 d)list

13.What is the output of bool("False")?

a) False

b)True  
c)TypeError  
d )None

14.In Python, which data type is used to store an ordered collection of elements with no duplicate values?

a) tuple  
b) list  
c) set  
d) dictionary

15.What is the result of the expression 3 \*\* 2?

a) 5  
b) 6

c)9

d) 27

16.What command is used to initialize a Git repository locally?

a) git clone

b) git init

c) git commit

d) git push

17.How can you check the status of your changes in a Git repository?

a) git status

b) git check

c) git diff

d) git log

18.What command is used to stage files for a commit in Git?

a) git add

b) git stage

c) git commit

d) git push

19.What is the purpose of forking a repository on GitHub?

a) To create a new branch in the original repository

b) To merge changes from one repository to another

c) To copy a repository under your GitHub account

d) To revert changes in a repository

20.What is a Pull Request used for in GitHub?

a) Requesting changes to be pulled into a repository

b) Submitting changes for approval and merging

c) Deleting branches in a repository

d) Checking the status of commits in a repository

1.**What is git and github?**

Sol: Git is Genral information Tracker and also version control system It is also called as version control system.

It is central repository is using which we can manage our project source code.

It maintains all modifications happening to a specified file.

Because of versions troubleshooting & fixing bugs is easy

If something goes wrong in current version we can roolback to previous.

* It is mainly used for collaborative work.
* Easy way to the fixing Bugs .
* Easy way to communicating.

**2.What is CVCS and DVCS ?**

Types of VCS:

Two types: **CVCS AND DVCS:**

1. CVCS: centralized version control system

SVN-bub version control system.

CVCS stands for Centralized Version Control System. It is a type of version control system where the version history of files is stored on a single central server, and clients access this server to check out and commit changes.

Centralized Repository:

All version control data is stored on a central server.

Developers work on local copies and sync with the central server.

* Examples:

Subversion (SVN)

1. DVCS: Distributed VCS /Decentralized

VCS Git

DVCS, especially Git, is widely adopted in modern software development due to its flexibility and efficiency in collaborative environments.

DVCS stands for Distributed Version Control System. Unlike CVCS, where all version control data is stored on a central server, DVCS allows each developer to have a complete copy of the entire repository, including the full history of changes.

**3.Create a project of any and push the project:**

**Sol:**

Git init

Git add file name

Git commit -m main

Git remote add origin URL

Git push-u origin main

**4.Define Software Development Life Cycle (SDLC) and briefly explain its primary**

**phases.**

**Sol:**

Software Development Life Cycle, and it s a structured process that is used to design, develop, and test good-quality software, and maintain software. The goal of SDLC is to create high-quality software that meets customer expectations in a cost-effective and timely manner.

Thre are 6 phases arein SDLC :

1.planining

2.Design

3.Development

4.Testing

5.deployment

6.maintainance

1.Planning: Defining the project scope, goals, and objectives..

Creating a detailed project plan, including timelines, resource allocation, and risk management.

2.Design: Designing the overall architecture of the software system, including its components and their interactions.

Software Design: Designing the detailed specifications of each software component, including data structures, algorithms, and user interfaces.

3.Development: Writing the actual code for the software components based on the design specifications.

4.Testing: Testing the interaction and integration of different software components.

5.Deployment: Deploying the software to the production environment.

Planning the deployment process, including rollback strategies and contingency plans.

6.Maintenance: Fixing bugs and errors identified in the software.software development life cycle it is the part of software development

**5.What are the main objectives of the Requirements Gathering phase in SDLC?**

Sol: Requirements gathering is the second phase of SDLC that is followed by three steps

1.Gathering reqirements

2.Requirement Analysis

3.Requirement specification

Requirements Analysis:

Identifying and documenting the specific needs and expectations of the end users.

Analyzing and refining the gathered requirements to ensure clarity and completeness.

Creating a formal document outlining the detailed functional and non-functional requirements.

**6.Explain the significance of the Design phase in the SDLC process.**

**Sol:** Design is the second phase of SDLC to designing the overall architechture of the software system all the components and interactions.

Designing the detailed specifications of each software component, including data structures, algorithms, and user interfaces.

**7.Discuss the importance of thorough Testing during the SDLC.**

Sol:

Software Testing is a part of software development processes.Software Testing is an activity to detect and identify the defects in the softwareThe main objective is in the software Testing is to release the quality product to the clients.

Testing the interaction and integration of different software components.

Testing the entire software system to ensure it meets the specified requirements.

Testing the software by end-users to verify its usability and suitability for their needs.that may contain all the bugs and to fixed it in the form of to reduce the

**8.Differentiate between Waterfall and Agile methodologies in SDLC. Highlight the** **advantages and disadvantages of each.**

**Sol:**

Water fall and agil are the models of SDLC

Water fall model linear and sequential approach to software development. Each phase in the development process must be completed before moving on to the next one, resembling the downward flow of a waterfall. The model is highly structured, making it easy to understand and use.

**Adavantages of Waterfall model:**

* It is easy to understand the user.
* It is step by step process.

**Disadvantages of Waterfall model:**

* Once the waterfall is down they did not go for up.
* The water fall model is only suits for small project.
* The waterfall model is it takes more Time to compare the other models.

**Agile model:** The agile model is the updated and fast grow and rapid updated model when compare to waterfall model that is if in case any updates in the future that is easily updated and quickly respond to the user it is the best model to develop an software .

**Adavantages of Agile:**

* It is a updated version of other.
* Agile model is updated in during the development.
* The agile model is takes less time.

**Disadvantages of Agile:**

* In the Agile During the big projects communication will be difficult.
* It is used only Big project

9.Write a Python program to calculate the area of a rectangle using user input forit is the length and width.

**10.What is devops ?**

Sol:

DevOps the process of Delivering the product or project by ensuring automation in place ensuring the quality with continuous Monitoring and continuous testing.

Devops is a basically Software development it is the combination of Between the (Development) and (Operation) of the company. So devops is basically a term for a group of concepts that while not all half catalyse into a movement and a rapidly. Devops is a methodology to study of building evolving &operating rapidly changing system at scale.

**11.What is need of devOps?**

Sol: DevOps the process of Delivering the product or project by ensuring automation in place ensuring the quality with continuous Monitoring and continuous testing.

* Faster Software Delivery
* Improved Collaboration and Communication
* Enhanced Software Quality
* Increased Reliability
* Scalability
* Cost Efficiency
* Better Security
* Adaptability to Market Changes
* Reduced Risk

**12.What are the devOps tools?**

**Sol:** we can use 7 tools in the devops :

1. Planning: Git
2. Building code: Maven
3. Testing: Selenium testing with python
4. Integration: Jenkins (CI/CD)
5. Deployment: Dockers
6. Operations: Ansible (Managing)
7. Monitoring: Teraform

13.Difference b/w break continue and pass ?

In Python, break, continue, and pass are control flow statements used to influence the execution of loops or blocks of code.

**1. break:**

The break statement in python is used to terminate the loop or statement in which it is present.

Example:

for i in range(5):

if i = =3:

break

print(i)

# Output: 0 1 2

2.**continue:**

Continue is also a loop control statement just like the break statement. continue statement is opposite to that of the break statement, instead of terminating the loop, it forces to execute the next iteration of the loop.

Example:

for i in range(5):

if i == 3:

continue

print(i)

# Output: 0 1 2 4

**3.pass:**

The pass statement in Python is used when a statement is required syntactically but you do not want any command or code to execute.

Example:

for i in range(5):

if i == 3:

pass

print(i)

# Output: 0 1 2 3 4

**14. d/w remove , delete, pop and write an example program in**

**python to demonstrate 3 of them.?**

**1.Remove:** Removes the first occurrence of a specified value in a list.

list=["archana", "Rachana", "Madhu", "Chaithu", "Thrisha"]  
list.remove("archana")  
print(list)

output: ['Rachana', 'Madhu', 'Chaithu', 'Thrisha']

**2.Delete:** Deletes an element at a specific index or the entire object.

list=["archana", "Rachana", "Madhu", "Chaithu", "Thrisha"]  
del list [1]  
print(list)

output: ['archana', 'Madhu', 'Chaithu', 'Thrisha']

**3.pop():** Removes and returns an element at a specific index (default is the last item).

list = ["archana", "Rachana", "Madhu", "Chaithu", "Thrisha"]  
item = list.pop(1)   
print(list)

output: ['archana', 'Madhu', 'Chaithu', 'Thrisha']

**15. D/w append and extend..?**

**1.append() :** Adds a single element (object) to the end of the list.

Example:

list = ["archana", "Rachana", "Madhu", "Chaithu", "Thrishan"]  
list.append("Chikky")  
print(list)

output: ['archana', 'Rachana', 'Madhu', 'Chaithu', 'Thrishan', 'Chikky']

**2.Extend()** : Adds all elements of an iterable to the end of the list.

Example:

list1=["archana", "Rachana", "Madhu", "Chaithu", "Thrishan"]  
list2=["Harsha","Bablu"]  
list.extend(list2)  
print(list)

output: ['archana', 'Rachana', 'Madhu', 'Chaithu', 'Thrishan', 'Chikky', 'Harsha', 'Bablu']