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?

Ans:

* a github is a store the source code in a repository by using the git (global information tracker).
* .github are helping to developers to change the code or remove the code or update any minor changes then will be pushed on the github through the git.
* It helps to the monitoring our code what changes are done before commit or after commit of the code
* The github will help to clone the repository from remote to local using clone with repository url.

2.What is CVCS and DVCS ?

Ans :

CVCS:

* the cvs means centralized version control system it will working (currently) only when we develop the code , then commit and push the code at a time to the centralized version control system
* the cvcs are only store the code copy on a remote repository it will not store on the local repository

Example : SVN

DVCS:

* the dvcs means decentralized version control system it will working any time we can push code from local repository to remote repository at any time
* the dvcs are store the code copy on remote repository and also local repository

Example: Git

3.Create a project of any and push the project

Ans:

Commands:

1. git init
2. git add .
3. git commit -m “firstproject”
4. git branch -M main
5. git remote add origin github(url)
6. git push -u origin main

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

Ans: the software development life cycle are basically follow the process here mentioned the below :

1. requirement planning and analysis
2. system design
3. development
4. testing
5. deployment
6. maintenance

1.requiremment planning and analysis : the planning is designed based on the client requirements and also analyze the cost and resources for develop the software product

2.system design: the system design is designed the architecture blueprint based on the requirements of business needs.

3.development : to develop (programming) the software application by using the system design blue print.

4.Testing: after develop the software application to it comes under testing phase this phase check the functionality the application will give outputs as we expected or not.

5.Deployment : the deployment phase the software application will be ready after testing phase it will deployed on the production environment (server).

6.Monitor : the deployment will done from previous stage now we monitor our application everything will be working or not after deployment

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

Ans:

* the requirement gathering phase the main objectives are to take the requirements based on the client
* after take the requirements will analysed the cost for build a software application
* then we take business analytics our application will meet the expectations on the market.
* Prepared the documentation for the project and then follows to the next phases

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

Ans:

* The design phase we need to follow our previous phase requirement and analysis because we design our application based on the documents
* In design phase we create the blue print for system architecture we cover all the aspects what client will expect from the end product (software application)
* We follow the algorithms and data flow diagrams for better product functional working.
* These are main things we follow our design phase in software development life cycle process.

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

Ans:

* The importance of the testing in a software development life cycle is to identify the defects or bugs of a software application.
* The product will develop on the development phase the we need to compulsory to test the product and to check the outputs as we expected or not
* The testing will help the product will working without defects it gives the quality of the product from the end users
* The testing are mainly using in software development like manual testing or automation testing based on the requirements but the ultimate goal is to find the bugs or defects and fix them then release the product to the deployement.

8.Differentiate between Waterfall and Agile methodologies in SDLC. Highlight the

advantages and disadvantages of each.

Water fall :

* the waterfall model will follows linear sequential approach it will goes step by step process without any iteration.
* the water fall methodology will follow process that are namely 1. Planning 2.system design 3. Implementation 4.demployement 5. Monitor

Advantages;

* the cost is very low
* small business organizations and startup companies will use this methodology

Dis Advantages:

* we can’t update new features to the software application after developed the software
* time consuming the product will deliver on time

Agile:

* the agile means ability to change means it repeated the tasks in a iterative mode every one or two weeks the its release the new version and the product will update continuously based on the client requirements
* the agile methodology will follow the process are namely 1. Requirement and analysis 2. System design 3. Development 4. Testing 5. Review 6. Release 7.delployement 8.monitor
* after monitor any update is there it will come from the system design stage so the loop will continued.

Advantages:

* the cost is low
* we customized our software application easily based on the requirements
* delivery the product on time

Dis advantages:

* the development phases the system design and code quality will not check properly
* so it not follows some standards because we develop the code continuously so many defects are there on the product

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

Ans:

rect\_len = int(input(“Enter the length of a rectangle: “))

rect\_width = int(input(“Enter the width of a rectangle: “))

area=rect\_len\*rect\_width

print(f“the area of the reactangel is : {area}”)

10.What is devops ?

* the devops means it is a combination of development and operations. We create the bridge from development and operational team for collaboration it helps to release the better quality product to given the end user.
* The devops is follows the agile methodology to continuing the process from planning to monitoring
* And the devops create automation process for the software development using Continues integration and Continues delivery (CI/CD) these pipelines are helped to automatate the process from both development team and infra team.

11.What is need of devOps?

* The devops are necessary for developing the software development because it will deliver the product on time
* And the devops process will release the quality of the product (99.99%) because we do automation process and also follow the agile methodology in a software development life cycle so every week or two weeks it like (sprint) we release the new version after development and testing so it gives the quality product
* So most of the companies are follow devops for faster delivery of the product

12.What are the devOps tools?

Ans: the devops tools are using based on the company requirements so every company will follow their needs. Our company will follow the these tools only I mentioned below here:

1. Git – for source code management
2. Maven – for build the software application after development
3. Selenium – the selenium are used for testing
4. Jenkins – for ci/cd
5. Docker, Kubernetes – for containerization and deployment
6. Ansible – for configuration
7. Terraform – monitoring
8. AWS - cloud services

13.Difference b/w break continue and pass ?

The break statement is used in loops to terminate the loop if the given condition is satisfied

The continue statement is used in loops if the given condition is satisfied its skip the condition and remaining statements are executed

Pass statement is used in mainly in classes and loops methods it represent the empty statements if the condition is satisfied or not satisfied it will execute the statements

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

python to demonstrate 3 of them.?

The remove statement is remove the element what we are mention inside the function on a remove

l=[435,5,2,3]

l.remove(3)

print(l)

Delete the delete statement is delete the list of the elements it will show empty

l=[143,25,66,24]

del list

print(l)

The pop will remove the last item of the list

l=[143,435,35,35]

l.pop()

print(l)

15. D/w append and extend..?

The append is add the new element to the list from last

l=[435,53,53,53,6]

l.append(5)

print(l)

the extend is extend the list to add another list

l=[4353,5,36,36]

add=l.extend([535,535,24])

print(add)