**Test**

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&#39;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(&quot;False&quot;)?

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?**

**GIT: Global information Tracking**

* It is central repository using which we can manage our project source code.
* Git is known as version control system.
* Git is a tool that helps coders to track the changes in their code.
* It manages the source code, track changes, and facilitates collaboration between development team and operation teams.
* It is also known as local server.
* It is used because of versions troubleshooting the errors and fixing bugs is easy.
* In this process anything goes wrong in the current version we can rollbacks to the previous version.
* It records the modification when someone modified and why they modified that files.

Git is used for two reasons:

1. VCS 🡪 For version control System
2. For collaboration with all we will use the git

**GitHub:** we will create an code or program or any project we have save in one file we will save or we will push the code into the git repository.By using the commands.

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

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

First we have to take one code then by using the git commands we have to push the code into the git repository.

1. Git –version
2. Git config
3. Git config –global –list
4. Git init
5. Git add.
6. Git commit -m “first commit”
7. Git branch -m main
8. Git remote add origin URL
9. Git push -u origin main

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

**It is a step by step process in the SDLC:**

1. **We have gather the information**: It will gather the information for the client based requriments.
2. **Analysis:** We have to do analysis the document what we have we done.
3. **Design: we have draw the blue print to the project**
4. **Coding:** we have to do the coding and we have analysis the whether it is correct or wrong.
5. **Testing: we have check whether the doctement is wright or wrong.**
6. **Deployment & Maintenance:**
7. we release the final product

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

**Gathering phase in SDLC:** It is the collect the information.

* It is collection of all the requirements what should we want to a program and want the requirements did the client want to that project.
* This all document is done for the business requirements specification (BRS). And it will send to the client to analysis the document.

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

**Design phase in the SDLC process:** It is a process used by the software industry to design, develop and test software.

SDLC aims is to produce the high-quality software that meets the customers expectation, reaches completely within time and with reasonable cost.

* Design is the second phase of SDLC.
* The input for this phase is SRS (software requirements specification) document which was prepared in requirement gathering phase and it is prepared on the bases of SRS document.
* In this phase multiple design documents are prepared which are documented in a SDD (software design document).
* SDD contains information like: Date design, Architecture design, Interface design
* There are two phases:

1. HLD (High level or System design)
2. LLD (Low level or program design)

* In design there will be prepare the blue print for the application.
* There are seven steps to design process

1. We have gather the information
2. Analysis
3. Design
4. Coding
5. Testing
6. Deployment & Maintenance
7. we release the final product

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

Testing: in this there will be

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

**Waterfall model:** It is a sequential project management methodology in it where it will one phase is completely finished then it will goes to the another phase and it being then.

* It is also called as “Linear Sequential Development Model”
* This model does not allow the developers to go back to the previous steps.
* It is non-iterative process.

life cycle model:

Requirement analysis 🡪 System design 🡪 Implementation 🡪

Deployment 🡪 Maintenance.

**Requirement analysis:** we will collect the all information about the product or project from the client. After gathering the requirements will prepare the document Business Requirements Specifications(BRS). After sending requirements to forward to analysis**.** After complete the understanding they will prepare the document is Software Requirement Specification(SRS). And also planning the team, schedules, strategy etc...

**System Design:** Then we will prepare the blue print for the application. And the work or the tasks will be assig to them. In this there are two terms

1. High level
2. Low level

**Implementation**: In this they will start the coding what the clients need.

**Deployment:** They will check the all the coding and document whether all are ok or not. And they will test the coding also.

**Maintenance:** At last we have to hand over that all project to the client.

**Agile model:**

* It is mean the ability to respond to the changes from the requirements, technology & people.
* In each & every s/w directly (or) indirectly will linked with the Agile model.

Ex: For shopping ----- Amazon, Flipkart, Myntra, Ajio etc…

For social media ------ FB, WhatsApp, Instagram, Twitter etc…

* It is an incremental model and it will deliver the output very fast compares to the waterfall model
* It is an iterative process to develop a s/w or application. And it is a re-cycling model.
* Here we can release the product at any stage. And we can remodel the changes b/w the process also.

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

def calculate\_area(length, width):  
 return length \* width  
length = float(input("Enter the length of the rectangle: "))  
width = float(input("Enter the width of the rectangle: "))  
  
area = calculate\_area(length, width)  
  
print(f"The area of the rectangle is: {area}")

Output:

Enter the length of the rectangle: 15

Enter the width of the rectangle: 7

The area of the rectangle is: 105.0

**10.What is DevOps?**

**DevOps**

**Dev + Ops------ Development + Operations**

It is used culture that improves Deliver applications

* It is combination of developer team and operation team.
* It is also known as methodology. And it is time saving process also
* In DevOps there is a set of tools in this.

It is the process of delivering the product/project by ensuring the automation in the place. Ensuring the quality with continuous monitoring and continuous testing.

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

* It is fast collaboration between development team and operation teams.
* For time saving we use DevOps.
* It is used to time savings.
* It will delivery fast into the market.
* It has scalability and flexibility and it will improve collaboration
* It has the higher efficiency through.
* It will used for to reduces costs.

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

There are seven tools we are used:

We will use this tools in DevOps they are

1. Planning/Coding -------- Git, Jira
2. Building ---------- Maven, Gradle, Apache, ANT
3. Testing --------- Selenium testing with python
4. Integration ---------- Jenkins (CI/CD)
5. Deployment --------------Dockers, Kubernetes
6. Operation ------------- Ansible (managing)
7. Monitoring -------------- Terraform

**13.Difference b/w break continue and pass?**

**Break:** Break means when we the condition it will print that for that range only then it is called break condition.

It will check the range in that condition.

**Continue**: It will check the condition when we give the any condition it will not excute that value it will skip that condition.

It will skip that condition and print the remaining all.

**Pass:** Pass means when we give any values to that then we give the pass condition then it will pass the values**.**

It will pass the values to the condition.

**14. d/w remove, delete, pop and write an example program in python to demonstrate 3 of them.?**

**Remove:** It will remove a specific element from the set if the element is present or not.

a = {1, 2, 3}  
a.remove(2)  
print(a)

Output: {1,3}

**Delete ():** It will delete theelements from the set when we give the element.

a = {1, 2, 3}  
a.delete(2)  
print(a)

Output: {1,3}

**Pop ():** it will remove the element which placed as first element.

a = {1, 2, 3,4}  
element = a.pop()  
print(element)  
  
print(a)

Output:

1

{2, 3, 4}

15. D/w append and extend.?

**Append:** In append we will add or remove only one element that means one number.

**Extend:** In this we can add two or more numbers in this and any numbers in this