# Module 1 – Foundation

## 1. What is a HTTP?

Ans. **HTTP** Stand For HyperText Transfar Protocol.HTTP is the communication protocol used by web browsers and servers to transfer data over the internet. It Allow User to access websites,image,video etc.

## 2. What is a Browsers? How they works?

Ans.

A web browsers is a software application that lets you access, view, and interact with websites and online content on the internet
Example: Google Chrome, Firefox, Opera

## 3.What is Domain Name?

Ans

A domain name is the human-readable address of a website on the internet.
example:When you visit a website like
👉 `www.google.com`
That's a **domain name.**

## 4. What is hosting?

**Ans**

Hosting is a service that stores your website's files.(like HTML, CSS, images, etc)

# Module 2 – Fundamentals of World Wide Web

## 5.Difference between Web Designer and Web Developer.

**Ans**

1.Web Designer: Designs how the website **l**ooks, Focuses on layout, colors, UI/UX,
2.Web Developer: Builds how the website works ,Focuses on coding, features, functions,Uses languages like **HTML, CSS, JS, PHP.**

## 6.What is a W3C?

**Ans**

W3C stands for World Wide Web Consortium.

## 7.What is Domain

**Ans**

A domain (or domain name) is the address of a website that people type in a browser to visit a site**.**

### 8.What SEO?

**Ans:** Search Engine Optimization.

### 9.What is SDLC life cycle?

**Ans**

SDLC stands for Software Development Life Cycle

## Module 3 – Fundamentals of IT

### 10.: Explain in your own words what a program is and how it functions

**Ans**

A program is a set of instructions written in a programming language (like Python, C, Java, etc.)
How Does a Program Function?: Writing the Instructions:

### 12. : What are the key steps involved in the programming process?

**Ans**

1) Understanding the problem and defining its requirements, 2) Designing a solution, 3) Coding the solution, 4) Testing and debugging the code, 5) Documenting the program, and 6) Maintaining the program.

### 13.What are the main differences between high-level and low-level programminglanguages?

**Ans**

High-level programming languages prioritize programmer productivity and ease of use, offering high abstraction from the underlying hardware. Low-level languages, in contrast, provide greater control over hardware but require more complex code and are less portable.

### 14. Describe the roles of the client and server in web communication

**Ans**

the client (typically a web browser) initiates requests for resources, while the server (which hosts the website and its resources) processes those requests and sends back the requested information

## 15.: Explain the function of the TCP/IP model and its layers.

TCP/IP model is a framework that standardizes how data is transmitted over networks. It divides the process into four layers: Application, Transport, Internet, and Network Access

## 16.: Explain Client Server Communication

## Ans

Client-server communication is a fundamental networking model where a client (like a web browser or mobile app) requests services or resources from a server (like a web server or database server)

## 17.: How does broadband differ from fiber-optic internet?

**Ans :**Broadband is a general term for high-speed internet access, while fiber optic internet is a specific type of broadband technology that uses thin glass or plastic fibers to transmit data

## 18.: What are the differences between HTTP and HTTPS protocols?

**Ans:** The primary difference between HTTP and HTTPS is security. HTTP is the standard protocol for transmitting hypertext over the internet, but it transmits data in plain text, making it vulnerable to interception and manipulation. HTTPS, on the other hand, is HTTP with a layer of security provided by SSL/TLS encryption, ensuring data transmitted between the client and server is encrypted and protected

## 19. : What is the role of encryption in securing application, Software Applications and Its Types?

## Ans

Encryption is the process of converting data into a secret code so that only authorized users can read it. It plays a critical role in protecting sensitive information in software and applications.

**Types.1** Desktop Applications 2.. **Web Applications 3.Mobile Applications 4.. Enterprise Applications**

## 20.: What is the difference between system software and application software?

**Ans:** System software manages the computer's hardware and provides a platform for other software, while application software is designed to perform specific tasks for the user

## 21.: What is the significance of modularity in software architecture?

ans:enables breaking down complex systems into smaller, manageable, and independent components (modules)

## 22.: Why are layers important in software architecture?

## Ans

Layers in software architecture are crucial because they promote modularity, separation of concerns, and maintainability

## 23. Explain the importance of a development environment in software production

## Ans

Layers in software architecture are crucial because they promote modularity, separation of concerns, and maintainability

## 24.: What is the difference between source code and machine code?

## Ans

Source code is human-readable code written in programming languages like Python or Java, while machine code is the low-level, binary code that a computer's processor directly understands and executes

## 25.: Why is version control important in software development?

## Ans

Version control is a system that records changes to code over time. It helps developers track, manage, and collaborate on software projects more effectively.

## 26: What are the benefits of using Github for students?

**Ans** a powerful platform for collaboration, version control, and access to valuable resources.

## 27.: What are the differences between open-source and proprietary software?

## Ans

Open-source and proprietary software differ primarily in their source code accessibility and licensing terms

## 28.: How does GIT improve collaboration in a software development team?

Ans

Git is a powerful version control system that makes it easy for multiple developers to work together on the same project without conflicts or confusion.

## 29.: What is the role of application software in businesses?

## Ans

Application software plays a crucial role in businesses by automating tasks, improving efficiency, and enabling better decision-making

## 30.: What are the main stages of the software development process?

## Ans

**:** Planning, Analysis, Design, Development, Testing, Deployment, and Maintenance

## 31.: Why is the requirement analysis phase critical in software development?

## Ans

it ensures that the software being built aligns with the needs and expectations of its users and stakeholders

## 32.: What is the role of software analysis in the development process?

**Ans : s** Software analysis plays a crucial role in defining project scope, understanding requirements, and designing solutions in software development**.**

## 33. What are the key elements of system design?

## Ans

Key elements of system design include scalability, security, performance, reliability, maintainability, and data management

## 34.Why is software testing important?

## Ans

Software testing is crucial for ensuring that software functions correctly, meets user requirements, and is reliable before release

## 35.: What types of software maintenance are there?

## Ans

Software maintenance can be categorized into four main types: corrective, adaptive, perfective, and preventive

## 36.What are the key differences between web and desktop applications?

## Ans

Web applications are accessed through a web browser and typically require an internet connection, while desktop applications are installed directly on a user's computer and can often function offline

## 37.: What are the advantages of using web applications over desktop applications?

## Ans

accessibility, cost-effectiveness, and ease of maintenance

## 38.: What role does UI/UX design play in application development?

## Ans

UI/UX design is crucial in application development as it directly impacts user satisfaction, engagement, and ultimately, the success of the application

## 39. What are the differences between native and hybrid mobile apps?

## Ans

development approach, performance, user experience, and cost

## 40.: What is the significance of DFDs in system analysis?

**ans.**visualizing and understanding how data moves through a system.

## 41.: What are the pros and cons of desktop applications compared to webapplications?

## Ans

Desktop applications generally offer better performance and offline functionality, but web applications are more accessible and easier to update

## 42.: How do flowcharts help in programming and system design?

## Ans

Flowcharts are visual diagrams that represent the sequence of steps and decisions within a process or algorithm. In programming and system design, they offer several key benefits