**Theory Questions.**

**1. What is PHP?**

PHP (Hypertext Preprocessor) is a server-side scripting language designed primarily for web development. It is embedded in HTML and executes on the server, generating dynamic web pages. PHP is open-source and widely used to create websites and applications.

**2. Features of PHP Language:**

* **Open-source:** PHP is free to download and use.
* **Server-side scripting:** PHP runs on the server, providing dynamic content.
* **Cross-platform compatibility:** Works on different operating systems (Windows, Linux, Mac).
* **Database integration:** PHP can easily connect to databases like MySQL, PostgreSQL, SQLite, etc.
* **Embedded in HTML:** PHP can be mixed with HTML for ease in web development.
* **Simple and easy to learn:** PHP is easy for beginners, especially for those familiar with C-like languages.
* **Extensive libraries and frameworks:** PHP has many libraries and frameworks like Laravel, Symfony, etc., to speed up development.

**3. Most Common Web Servers:**

* **Apache HTTP Server**
* **Nginx**
* **Microsoft IIS (Internet Information Services)**
* **LiteSpeed**
* **Caddy**
* **Tomcat (Java-based server)**

**4. Reasons Behind the Development of PHP Language:**

* **Dynamic Web Content:** PHP was developed to make dynamic web page generation easier.
* **Efficient Server-Side Scripting:** It was created to handle server-side tasks such as processing forms and interacting with databases.
* **Simplicity:** PHP was intended to be a simple and accessible language for web developers.

**5. Why Learn PHP Programming? (My Opinion):**

* **Widely used:** PHP powers a large portion of websites on the internet (including platforms like WordPress).
* **Full-stack capabilities:** PHP allows you to handle both front-end and back-end development.
* **Fast and efficient:** PHP has evolved to become faster with modern versions, and it can handle high traffic efficiently.
* **Huge community support:** Learning PHP means you'll have access to many resources, tutorials, and solutions.
* **Job Opportunities:** PHP is in demand in many small to medium-scale companies due to its cost-effectiveness and ease of use.

**6. What is a Web Server?**

A web server is software or hardware responsible for serving websites or web applications to users. It processes incoming requests (HTTP or HTTPS), retrieves the requested web page or resource, and sends it back to the client (browser). The web server typically handles requests, hosts websites, and manages traffic.

**7. What is XAMPP?**

XAMPP is a free and open-source cross-platform web server package. It includes:

* **Apache (Web server)**
* **MySQL (Database server)**
* **PHP and Perl (Programming languages)**

XAMPP is used for developing and testing web applications locally before deploying them to a live server.

**8. Define Protocols:**

Protocols are a set of rules or standards used for communication between devices in a network. They ensure proper data transmission and interpretation between systems.

**9. What are HTTP and IP Protocols?**

* **HTTP (Hypertext Transfer Protocol):** A protocol used for transmitting web pages on the internet. It handles requests between clients (browsers) and servers.
* **IP (Internet Protocol):** A network protocol responsible for addressing and routing data packets across networks. It ensures data is sent to the correct destination using IP addresses.

**10. Why Don’t You See PHP Code in Browser Source Code?**

PHP code is executed on the server before the resulting HTML is sent to the client. When you view the source code in the browser, you're only seeing the HTML output that PHP generated, not the PHP code itself.

**11. What is an Embedded Language?**

An embedded language is a programming or scripting language that is embedded within another language or platform. PHP, for example, is embedded in HTML to add dynamic functionality to web pages.

**12. What are Scripting Languages?**

Scripting languages are programming languages that automate the execution of tasks and are typically interpreted rather than compiled. They are often used for writing small programs or scripts to control another application. Examples include PHP, JavaScript, Python, and Ruby. Scripting languages are used for tasks like server-side web development, automation, and process control.