

## 1. JavaScript Introduction

### Q1. What is JavaScript? Explain the role of JavaScript in web development.

JavaScript is a high-level, interpreted programming language used to make web pages interactive and dynamic. It runs directly in the browser and allows developers to add features like animations, pop-ups, and form validation.

In web development, JavaScript plays a key role in enhancing user experience by enabling real-time updates, controlling multimedia, and connecting the front-end with back-end services. It works together with HTML (structure) and CSS (style) to build complete web applications.

### Q2. How is JavaScript different from other programming languages like Python or Java?

JavaScript is mainly used for client-side web development, while Python and Java are often used for server-side or application-level programming.

- **Execution:** JavaScript runs in web browsers, while Python and Java need separate environments.
- **Syntax:** JavaScript syntax is simpler and loosely typed, while Java and Python are more structured.
- **Usage:** JavaScript handles front-end tasks like user interaction, while Java and Python are used for backend processing and complex computation.

### Q3. Discuss the use of <script> tag in HTML. How can you link an external JavaScript file to an HTML document?

The <script> tag in HTML is used to insert or link JavaScript code into a webpage.

To write JavaScript directly inside HTML, you can use:

**Example :**

```
<script>  
  
alert("Hello from JavaScript!");  
  
</script>
```

To link an external JavaScript file, you can use the **src** attribute:

**Example:**

```
<script src="script.js"></script>
```

This method keeps the code organized and reusable.