**Question 1: What is JavaScript? Explain the role of JavaScript in web development.**

JavaScript is a high-level, interpreted programming language that conforms to the ECMAScript specification. It is a versatile language that enables interactive web pages and is an essential part of web applications.

Role in web development:

* Adds interactivity to web pages (e.g., form validation, animations)
* Enables dynamic content updates without page reloads (AJAX)
* Allows client-side processing reducing server load
* Works with HTML (structure) and CSS (styling) to create complete web experiences
* Powers modern web frameworks like React, Angular, and Vue.js

**Question 2: How is JavaScript different from other programming languages like Python or Java?**

* **Execution environment**: JavaScript primarily runs in browsers, while Python and Java typically run on servers or as standalone applications
* **Typing**: JavaScript is dynamically typed (no type declarations), Java is statically typed
* **Compilation**: JavaScript is interpreted (JIT compiled in modern engines), Java is compiled to bytecode
* **Concurrency**: JavaScript uses an event-driven, non-blocking model (single-threaded), while Java and Python support multi-threading
* **Syntax**: JavaScript's syntax is C-like (similar to Java), while Python uses significant whitespace
* **Use cases**: JavaScript is mainly for web, Python for scripting/data science, Java for enterprise applications

#### Question 3: Discuss the use of <script> tag in HTML. How can you link an external JavaScript file to an HTML document?

The <script> tag is used to embed or reference JavaScript code in an HTML document. It can be placed in the <head> or <body> section.

To embed JavaScript directly:

<script>

alert("Hello World!");

</script>

To link an external JavaScript file:

<script src="path/to/script.js"></script>