**MODULE: 4 (JavaScript Basic & DOM)**

**1. What is JavaScript?**

JavaScript is a high-level, versatile programming language primarily used for enhancing the interactivity and functionality of web pages. It is a client-side language that enables dynamic content updates, interactive features, and complex user interfaces by manipulating the Document Object Model (DOM) and handling user events.

**2. What is the use of the isNaN function?**

The isNaN function is used to check whether a value is NaN (Not-a-Number). It helps in validating data to ensure that numerical operations are performed on valid numbers. It returns true if the value is NaN and false otherwise.

**3. What is negative Infinity?**

Negative Infinity represents a value less than any finite number in JavaScript. It results from operations like dividing a negative number by zero. It is used to denote values that are infinitely large in the negative direction.

**4. Which company developed JavaScript?**

JavaScript was developed by Netscape Communications Corporation. Brendan Eich created the language in 1995 for use in the Netscape Navigator web browser.

**5. What are undeclared and undefined variables?**

* **Undeclared Variables**: Variables that have not been explicitly declared using var, let, or const. Accessing such variables results in a ReferenceError.
* **Undefined Variables**: Variables that have been declared but not assigned a value. They have an initial value of undefined.

**6. Write the code for adding new elements dynamically.**

In JavaScript, new HTML elements can be added to a page dynamically using methods like document.createElement() and appendChild(). This allows for the creation and insertion of elements into the DOM during runtime.

**7. What is the difference between ViewState and SessionState?**

* **ViewState**: Maintains the state of a web page's controls between postbacks. It is stored in a hidden field on the page and is specific to that page.
* **SessionState**: Stores user data across multiple pages and requests within a single session. It is maintained on the server and can persist for the duration of a user's session.

**8. What is the === operator?**

The === operator is the strict equality operator in JavaScript. It compares both the value and type of two operands, returning true only if both are identical, thus avoiding type coercion.

**9. How can the style/class of an element be changed?**

To modify the style of an element, JavaScript can manipulate the style property directly. To change or add a class, the className or classList property can be used to manage CSS classes applied to an element.

**10. How to read and write a file using JavaScript?**

In a browser, JavaScript cannot directly read or write files due to security restrictions. However, in a server-side environment like Node.js, the fs (file system) module allows for reading from and writing to files.

**11. What are all the looping structures in JavaScript?**

JavaScript provides several looping structures for iterating over data:

* **for**: Executes a block of code a set number of times.
* **while**: Repeats code while a specified condition is true.
* **do...while**: Executes code once before checking a condition and repeats while the condition is true.
* **for...in**: Iterates over enumerable properties of an object.
* **for...of**: Iterates over iterable objects such as arrays.

**12. How can you convert the string of any base to an integer in JavaScript?**

The parseInt function in JavaScript can convert strings representing numbers in different bases (e.g., binary, octal) to integers by specifying the base (radix) as the second argument.

**13. What is the function of the delete operator?**

The delete operator is used to remove a property from an object. It affects the object structure by removing the specified property, and the operation returns true if successful.

**14. What are all the types of pop-up boxes available in JavaScript?**

JavaScript provides three types of pop-up boxes:

* **alert**: Displays a simple message to the user.
* **confirm**: Presents a dialog box with OK and Cancel buttons and returns a boolean indicating the user's choice.
* **prompt**: Prompts the user to input a value and returns the input as a string or null if canceled.

**15. What is the use of void(0)?**

The void(0) expression is used to evaluate an expression and return undefined. It is commonly used in URLs to prevent the default action of a hyperlink from executing.

**16. How can a page be forced to load another page in JavaScript?**

JavaScript can navigate to another page by setting the window.location property to the desired URL. This action causes the browser to load the new page.

**17. What are the disadvantages of using innerHTML in JavaScript?**

Using innerHTML can lead to:

* **Security Vulnerabilities**: It may expose the site to Cross-Site Scripting (XSS) attacks if user input is not properly sanitized.
* **Performance Issues**: Updating innerHTML can be inefficient as it requires re-rendering of the entire content and can affect performance.
* **Loss of Event Listeners**: Replacing innerHTML causes removal of existing event listeners attached to elements, potentially leading to a loss of functionality.