

# SAIC Industrial training JavaScript Exam - 1

Total Mark: 40

Time: 1 Hour and 30 Minutes

1. What will be the output of the following code ? (Mark: 3)
  - a. What is the output of `false && 'true'`?
  - b. If `let a = 5`, what is the value of `++a + a--`?
  - c. What is the output of `(true || 'true') && 'true'`?
  - d. What does `null ?? 'default'` evaluate to?
  - e. What is the result of `5 + '2'` and `5 - '2'`?
  - f. What does the expression `true && false || true` evaluate to?
2. What is event bubbling in JavaScript? How does it affect the propagation of events in the DOM? How can you prevent event bubbling? (Mark: 3)
3. Explain the difference between the `indexOf()`, `lastIndexOf()`, and `includes()` methods when used to search for substrings within a string. (Mark: 3)
4. Describe the purpose of the `Math.round()`, `Math.floor()`, and `Math.ceil()` methods in JavaScript. Provide examples of their usage. (Mark: 3)
5. Answer the following question (Mark: 3)
  - a. How can you create an empty array in JavaScript?
  - b. How does the `map()` method differ from the `forEach()` method?
  - c. Can you change the length of an array declared with `const`?

**6. Write a function that takes an array and checks if all elements of that array are positive. (Mark: 5)**

**Example:**

Input: [1, 2, 3, 4, 5]

Outputs: true

Input: [1, -2, 3, 4, 5]

Outputs: false

**7. Write a JavaScript function to remove duplicates from an array. (Mark: 5)**

**Example:**

Input: [1, 2, 2, 3, 4, 4, 5]

Output: [1, 2, 3, 4, 5]

**8. Write a JavaScript function that takes a string and returns the string with each word capitalized. (Mark: 5)**

**Example:**

Input: "We are learning JavaScript"

Output: "We Are Learning JavaScript"

9. You are given a string that contains words separated by spaces. Write a function that takes this string as input and returns an object where the keys are the unique words in the string, and the values are the counts of how many times each word appears. (Mark: 5)

**Example:**

Input: "apple banana apple orange banana apple"

Output: {  
 "apple": 3,  
 "banana": 2,  
 "orange": 1  
}

10. Write a function that counts the number of vowels in a given string. (Mark: 5)

**Example:**

Input: 'I Love JavaScript'

Output: 6