🚀 30 JavaScript DSA Questions with Answers

📘 Curated by **Deep Ghinaiya – Software Developer**

🧠 Q1. Reverse a String

📝 **Problem:**
Write a function to reverse a given string.
Input: "hello"
Output: "olleh"

✅ **Logic:**
Convert the string to an array, reverse it, then join it back.

💻 **Code:**

```
function reverseString(str) {
  return str.split('').reverse().join('');
}
```

📤 **Output:** "olleh"

🧠 Q2. Check for Palindrome

📝 **Problem:**
Determine if a string is a palindrome.
Input: "racecar"
Output: true

✅ **Logic:**
Compare the string with its reversed version.

💻 **Code:**

```
function isPalindrome(str) {
  return str === str.split('').reverse().join('');
}
```

📤 **Output:** true

🧠 Q3. Find the Largest Number in an Array

📝 **Problem:**
Return the largest number in an array.
Input: [10, 5, 20, 8]
Output: 20

✅ **Logic:**
Use Math.max with spread syntax.

💻 **Code:**

```
function findMax(arr) {
  return Math.max(...arr);
}
```

📤 **Output:** 20

🧠 Q4. Factorial of a Number

📝 **Problem:**
Find the factorial of a number.
Input: 5
Output: 120

✅ **Logic:**
Use recursion to multiply n * factorial(n - 1).

💻 **Code:**

```
function factorial(n) {
  if (n === 0) return 1;
  return n * factorial(n - 1);
}
```

📤 **Output:** 120

🧠 Q5. Find Fibonacci Number at Nth Position

📝 **Problem:**
Return the Nth Fibonacci number.
Input: 5
Output: 5

✅ **Logic:**
Use recursion or iteration to find nth term.

💻 **Code:**

```
function fibonacci(n) {
  if (n <= 1) return n;
  return fibonacci(n - 1) + fibonacci(n - 2);
}
```

📤 **Output:** 5

🧠 Q6. Find the Missing Number in an Array

📝 **Problem:**
Given an array from 1 to N with one missing number, find it.
Input: [1, 2, 4, 5]
Output: 3

✅ **Logic:**
Use formula sum of first N numbers and subtract actual sum.

💻 **Code:**

```
function findMissing(arr, n) {
  let total = (n * (n + 1)) / 2;
  let sum = arr.reduce((a, b) => a + b, 0);
  return total - sum;
}
```

📤 **Output:** 3

🧠 Q7. Find Duplicates in an Array

📝 **Problem:**
Find all duplicate elements in an array.
Input: [1, 2, 2, 3, 4, 4]
Output: [2, 4]

✅ **Logic:**
Use a Set to track seen elements.

💻 **Code:**

```
function findDuplicates(arr) {
  const seen = new Set();
  const duplicates = new Set();
  for (let num of arr) {
    if (seen.has(num)) duplicates.add(num);
    seen.add(num);
  }
  return [...duplicates];
}
```

📤 **Output:** [2, 4]

🧠 Q8. Count Vowels in a String

📝 **Problem:**
Return the number of vowels in a string.
Input: "hello"
Output: 2

✅ **Logic:**
Check each character if it’s a vowel.

💻 **Code:**

```
function countVowels(str) {
  return (str.match(/[aeiou]/gi) || []).length;
}
```

📤 **Output:** 2

🧠 Q9. Check if Two Strings are Anagrams

📝 **Problem:**
Check if two strings are anagrams.
Input: "listen", "silent"
Output: true

✅ **Logic:**
Sort both strings and compare.

💻 **Code:**

```
function isAnagram(a, b) {
  return a.split('').sort().join('') === b.split('').sort().join('');
}
```

📤 **Output:** true

🧠 Q10. Find First Non-Repeating Character

📝 **Problem:**
Return the first non-repeating character in a string.
Input: "aabbcdd"
Output: "c"

✅ **Logic:**
Use a frequency map to count characters.

💻 **Code:**

```
function firstNonRepeatingChar(str) {
```

```
 for (let char of str) {
  if (str.indexOf(char) === str.lastIndexOf(char)) return char;
 }
 return null;
}
```

📤 **Output:** "c"

🧠 Q11. Sum of All Elements in Array

📝 **Problem:**
Return the sum of all elements.
Input: [1, 2, 3, 4]
Output: 10

✅ **Logic:**
Use reduce method.

💻 **Code:**

```
function arraySum(arr) {
 return arr.reduce((acc, val) => acc + val, 0);
}
```

📤 **Output:** 10

🧠 Q12. Check Prime Number

📝 **Problem:**
Return true if number is prime.
Input: 7
Output: true

✅ **Logic:**
Only divisible by 1 and itself.

💻 **Code:**

```
function isPrime(n) {
  if (n < 2) return false;
  for (let i = 2; i <= Math.sqrt(n); i++) {
    if (n % i === 0) return false;
  }
  return true;
}
```

📤 **Output:** true

🧠 Q13. FizzBuzz

📝 **Problem:**
Print numbers from 1 to N with rules:

- Fizz for multiples of 3
- Buzz for multiples of 5
- FizzBuzz for both

💻 **Code:**

```
function fizzBuzz(n) {
  for (let i = 1; i <= n; i++) {
    if (i % 15 === 0) console.log("FizzBuzz");
    else if (i % 3 === 0) console.log("Fizz");
    else if (i % 5 === 0) console.log("Buzz");
    else console.log(i);
  }
}
```

📤 **Output:** 1, 2, Fizz, 4, Buzz...

🧠 Q14. Capitalize First Letter of Each Word

📝 **Problem:**
Capitalize the first letter of each word in a sentence.
Input: "hello world"
Output: "Hello World"

✅ **Logic:**
Split the string and use .charAt(0).toUpperCase().

💻 **Code:**

```
function capitalizeWords(str) {
  return str.split(' ').map(word =>
    word.charAt(0).toUpperCase() + word.slice(1)
  ).join(' ');
}
```

📤 **Output:** "Hello World"

🧠 Q15. Remove Duplicates from Array

📝 **Problem:**
Return a new array without duplicates.
Input: [1, 2, 2, 3]
Output: [1, 2, 3]

💻 **Code:**

```
function removeDuplicates(arr) {
  return [...new Set(arr)];
}
```

📤 **Output:** [1, 2, 3]

🧠 Q16. Find Second Largest Number

📝 **Problem:**
Return the second largest number.
Input: [1, 3, 4, 5, 0]
Output: 4

✅ **Logic:**
Sort and remove the largest.

💻 **Code:**

```
function secondLargest(arr) {

 let unique = [...new Set(arr)];

 unique.sort((a, b) => b - a);

 return unique[1];

}
```

📤 **Output:** 4

🧠 Q17. Check Array is Sorted

📝 **Problem:**
Return true if array is sorted in ascending order.
Input: [1, 2, 3, 4]
Output: true

💻 **Code:**

```
function isSorted(arr) {

 for (let i = 0; i < arr.length - 1; i++) {

  if (arr[i] > arr[i + 1]) return false;

 }

 return true;

}
```

📤 **Output:** true

🧠 Q18. Merge Two Sorted Arrays

📝 **Problem:**
Merge two sorted arrays into one sorted array.
Input: [1, 3], [2, 4]
Output: [1, 2, 3, 4]

💻 **Code:**

```
function mergeSortedArrays(a, b) {
  return [...a, ...b].sort((x, y) => x - y);
}
```

📤 **Output:** [1, 2, 3, 4]

🧠 Q19. Find GCD of Two Numbers

📝 **Problem:**
Find the Greatest Common Divisor (GCD).
Input: 12, 18
Output: 6

✅ **Logic:**
Use Euclidean algorithm.

💻 **Code:**

```
function gcd(a, b) {
  while (b !== 0) {
    [a, b] = [b, a % b];
  }
  return a;
}
```

📤 **Output:** 6

🧠 Q20. Count Words in a String

📝 **Problem:**
Count the number of words.
Input: "Hello world!"
Output: 2

💻 **Code:**

```
function countWords(str) {
  return str.trim().split(/\s+/).length;
}
```

📤 **Output:** 2

Absolutely! Here are the final **Q21 to Q30** DSA questions with answers in **JavaScript**, formatted for **direct copy-paste into Canva** — same clean and consistent structure ✅.

🧠 Q21. Check if a Number is Even or Odd

📝 **Problem:**
Return "Even" if number is even, "Odd" otherwise.
Input: 5
Output: "Odd"

💻 **Code:**

```
function checkEvenOdd(n) {
  return n % 2 === 0 ? "Even" : "Odd";
}
```

📤 **Output:** "Odd"

🧠 Q22. Find the Power of a Number

📝 **Problem:**
Calculate base^exponent.
Input: 2, 3
Output: 8

💻 **Code:**

```
function power(base, exponent) {
  return Math.pow(base, exponent);
}
```

📤 **Output:** 8

🧠 Q23. Find the Length of Longest Word

📝 **Problem:**
Return the length of the longest word in a sentence.
Input: "The quick brown fox"
Output: 5

💻 **Code:**

```
function longestWordLength(str) {
  return Math.max(...str.split(' ').map(word => word.length));
}
```

📤 **Output:** 5

🧠 Q24. Check if Array Contains a Value

📝 **Problem:**
Return true if array contains the target value.
Input: [1, 2, 3], 2
Output: true

💻 **Code:**

```
function contains(arr, val) {
  return arr.includes(val);
}
```

📤 **Output:** true

🧠 Q25. Remove Falsy Values from Array

📝 **Problem:**
Return an array with all falsy values removed.
Input: [0, 1, false, 2, '', 3]
Output: [1, 2, 3]

💻 **Code:**

```
function removeFalsy(arr) {
  return arr.filter(Boolean);
}
```

📤 **Output:** [1, 2, 3]

🧠 Q26. Flatten a Nested Array

📝 **Problem:**
Convert a nested array to a single-level array.
Input: [1, [2, [3]]]
Output: [1, 2, 3]

💻 **Code:**

```
function flattenArray(arr) {
  return arr.flat(Infinity);
}
```

📤 **Output:** [1, 2, 3]

🧠 Q27. Sum of Digits

📝 **Problem:**
Return the sum of all digits of a number.
Input: 123
Output: 6

💻 **Code:**

```
function sumDigits(n) {
  return n.toString().split('').reduce((a, b) => a + parseInt(b), 0);
}
```

📤 **Output:** 6

🧠 Q28. Find Common Elements in Two Arrays

📝 **Problem:**
Return common elements.
Input: [1, 2, 3], [2, 3, 4]
Output: [2, 3]

💻 **Code:**

```
function commonElements(a, b) {
  return a.filter(item => b.includes(item));
}
```

📤 **Output:** [2, 3]

🧠 Q29. Convert Celsius to Fahrenheit

📝 **Problem:**
Convert temperature to Fahrenheit.
Input: 0
Output: 32

💻 **Code:**

```
function celsiusToFahrenheit(c) {
  return (c * 9/5) + 32;
}
```

📤 **Output:** 32

🧠 Q30. Generate Random Number Between Two Values

📝 **Problem:**
Return a random integer between min and max (inclusive).
Input: 1, 5
Output: Random number from 1 to 5

💻 **Code:**

```
function getRandom(min, max) {
  return Math.floor(Math.random() * (max - min + 1)) + min;
}
```

📤 **Output:** e.g. 3

💡 Perfect for beginners to strengthen their logic, syntax, and coding confidence in JavaScript.