ProminentPixel Interview Questions and Answers (A to Z, Easy English)

Round 1 (Technical)

1. Tell me about yourself. I am [Your Name], a recent graduate in [Your Branch] from [Your College]. I am passionate about web development and have built projects using HTML, CSS, JavaScript, and React. I enjoy learning new technologies and solving coding problems.

2. Questions related to projects. Explain your project goal, tools used, challenges faced, and your contribution. Example: I made a Food Delivery App using React for frontend and Firebase for backend. I handled login, cart, and payment UI.

3. Difference between let, const, and var?

- var: function-scoped, can be redeclared and updated.
- let: block-scoped, can be updated but not redeclared.
- const: block-scoped, cannot be updated or redeclared.

4. What is hoisting? Hoisting means JavaScript moves declarations to the top of the scope. Only var and function declarations are hoisted.

5. What are higher-order functions? A function that takes another function as argument or returns a function. Example: map, filter, reduce.

6. What is a promise? A Promise handles async code. It has 3 states: pending, fulfilled, rejected.

7. Synchronous vs Asynchronous Programming?

- Synchronous: Tasks run one by one.
- Asynchronous: Tasks run without waiting, using callbacks/promises.

8. useState and useEffect in React?

- useState: Adds state to functional component.
- useEffect: Runs side effects like API calls.

9. Print sum of diagonal elements in matrix

```
function diagonalSum(mat) {
  let sum = 0;
  for (let i = 0; i < mat.length; i++) {
    sum += mat[i][i];
    if (i !== mat.length - 1 - i) sum += mat[i][mat.length - 1 - i];
  }
```

```
  return sum;
}
```

10. Swap two numbers without third variable

```
let a = 5, b = 10;
a = a + b;
b = a - b;
a = a - b;
```

11. Fibonacci series

```
function fibonacci(n) {
  let a = 0, b = 1;
  console.log(a, b);
  for (let i = 2; i < n; i++) {
    let c = a + b;
    console.log(c);
    a = b;
    b = c;
  }
}
```

Round 2 (Technical)

1. What is JSX? JSX is JavaScript XML. It allows writing HTML inside JavaScript. Used in React.

2. What is React and its use? React is a JavaScript library for building fast and reusable UI components.

3. What is map, filter, reduce?

- map: returns a new array after applying a function.
- filter: returns array elements that meet a condition.
- reduce: reduces array to a single value.

4. What are hooks in React? Explain any two.

- useState: for state
- useEffect: for lifecycle methods (like componentDidMount)

5. 4 pillars of OOP?

1. Encapsulation

2. Inheritance
3. Abstraction
4. Polymorphism

6. What is polymorphism? Same function behaves differently based on input.

7. What is inheritance and types? Child class gets properties of parent class. Types: Single, Multi-level, Hierarchical.

8. Why is string immutable? Because changing string creates a new one. This improves performance and security.

9. Print pattern

```
for (let i = 1; i <= 5; i++) {
  console.log('*'.repeat(i));
}
```

10. Prime numbers 1 to n

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

11. Factorial of number

```
function factorial(n) {
  let fact = 1;
  for (let i = 2; i <= n; i++) fact *= i;
  return fact;
}
```

Round 3 (Technical)

1. What are objects in JavaScript? Objects store key-value pairs. Example:

```
const person = {name: 'John', age: 25};
```

2. Callback A function passed to another function to run later.

3. async/await Async simplifies promise handling. Await waits for result.

4. What is API? API = Application Programming Interface. It connects software.

5. Spread vs Rest operator

- Spread (`...`) expands items.
- Rest (`...`) collects items.

6. Props in React Props pass data from parent to child component.

7. What is useContext and need for it? useContext shares data globally without props drilling.

8. What is Redux and how different from useContext? Redux is a state manager with actions and reducers. Better for complex apps.

9. What is routing and how in React? Use `react-router-dom` to create pages.

10. What is interface? Interface is a blueprint (TypeScript) that defines structure of class.

11. Check if linked list is circular

```
function isCircular(head) {
  let slow = head, fast = head;
  while (fast && fast.next) {
    slow = slow.next;
    fast = fast.next.next;
    if (slow === fast) return true;
  }
  return false;
}
```

Round 4 (Technical)

1. Tell me about yourself. (Same as Round 1, Q1)

2. Family background Answer honestly. Example: "My father is a teacher and my mother is a homemaker. I have one younger brother."

3. How was your interview experience? Example: "It was a great experience. I learned new things and felt comfortable."

4. Describe this year's election in 15–20 lines

- This year's election had many phases.
- Major parties campaigned heavily.
- Voters showed high interest.
- Youth turnout was high.
- Main issues were jobs and inflation.
- The Election Commission ensured smooth process.
- EVMs were used.
- Counting was done transparently.
- Social media played a big role.
- Results were accepted peacefully.
- Some states saw major changes.
- Leaders gave speeches after results.
- New policies were promised.
- It showed strong democratic spirit.

5. How to solve climate change problem?

- Use renewable energy.
- Plant trees.
- Reduce car use.
- Save electricity and water.
- Reduce plastic.
- Educate people.
- Use public transport.

6. Repeated character more than n/k times

```
function frequentChars(str, k) {
  let n = str.length, count = {};
  for (let ch of str) count[ch] = (count[ch] || 0) + 1;
  for (let key in count) {
    if (count[key] > n / k) console.log(key);
  }
}
```

7. Second largest element in array (without sort)

```
function secondLargest(arr) {
  let first = -Infinity, second = -Infinity;
  for (let num of arr) {
    if (num > first) {
```

```
      second = first;
      first = num;
    } else if (num > second && num < first) {
      second = num;
    }
  }
  return second;
}
```

Web Developer – Technical Rounds

ES6 Changes:

- let/const
- arrow functions
- template strings
- spread/rest
- destructuring

Palindrome check

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

Debug const in for loop You can't reassign a const variable. Use `let` inside loops.

Difference between string and StringBuilder (Java):

- String is immutable
- StringBuilder is mutable (can change without creating new object)

String methods (JavaScript)

- length
- toUpperCase
- toLowerCase
- slice
- includes

Linked List using object and pointer logic

```
function ListNode(val) {
  this.val = val;
```

```
  this.next = null;
}
```

Convert string to number without built-in method

```
function toNumber(str) {
  let num = 0;
  for (let i = 0; i < str.length; i++) {
    num = num * 10 + (str.charCodeAt(i) - 48);
  }
  return num;
}
```

Merge arrays without duplicates (no built-in)

```
function mergeUnique(a, b) {
  let res = [];
  for (let i of a.concat(b)) {
    if (!res.includes(i)) res.push(i);
  }
  return res;
}
```

Pythagorean Triplets 1 to 1000

```
function findTriplets() {
  for (let a = 1; a <= 1000; a++) {
    for (let b = a; b <= 1000; b++) {
      let c = Math.sqrt(a * a + b * b);
      if (c <= 1000 && Number.isInteger(c)) console.log(a, b, c);
    }
  }
}
```

Minimum coin for amount

```
function minCoins(coins, amount) {
  coins.sort((a, b) => b - a);
  let count = 0;
  for (let coin of coins) {
    while (amount >= coin) {
      amount -= coin;
      count++;
```

```
    }
  }
  return count;
}
```