Quiz 2

Total Marks 100

Time: 4 hours

Section I – MCQs

Encircle the correct answer out of the given options. Cutting or overwriting will result in no marks. [Mark: 10]

1. **Javascript is an_____language?**

a) Object Oriented
b) Object Based
c) Procedural
d) None of the above

2. **Which of the following keywords is used to define a variable in Javascript?**

a) var
b) let
c) Both A and B
d) None of the above

3. **How the objects are passed in JavaScript?**

a) By value
b) By reference
c) Both by value and reference
d) None of the above

4. **Which of the following methods is used to access HTML elements using Javascript?**

a) getElementById()
b) getElementsByClass()
c) Both A and B
d) None of the above

5. **How can a datatype be declared to be a constant type?**

a) const
b) var
c) let
d) constant

6. **What will be the output of the following code snippet?**

```
var a = "Scaler";
var result = a.substring(2, 4);
document.write(result);
```

a) al
b) ale
c) cal
d) caler

7. What will be the output of the following code snippet?

```
var x=12;
var y=8;
var res=eval("x+y");
document.write(res);
```

a) 20
b) x+y
c) 128
d) None of the above

8. AJAX is about updating_____, without reloading the full-page.

a) parts of a web page
b) parts of a database records
c) parts of a HTML tags dynamically
d) parts of a CSS classes dynamically

9. In Github After you add a file, it becomes

a) Modified
b) Staged
c) Untracked
d) Commited

10. What command lets you create a connection between a local and remote repository?

a) Git remote add origin
b) Git remote add new
c) Git remote new origin
d) Git remote origin

Section – II

Quiz 3 – Introduction to JavaScript, Programming fundamentals, Advance Programming fundaments, Git hub

1. **Write a JavaScript program that convert Age into days. You can give hard code value of the number. [Marks: 15]**

Ans:
```
const ageInYears = 24;
const ageInDays = ageInYears * 365;
console.log(`Age in days: ${ageInDays}`);
```

2. **Write a java script function program check whether a string is palindrome or not. [Marks: 15]**

Ans:
```
function isPalindrome(str) {
    let string = str.toLowerCase().replace(/[\W_]/g, '');
    let reverseString = string.split('').reverse().join('');
    if (reverseString === string) {
      console.log(`"${str}" is a palindrome.`);
      return true;
    } else {
      console.log(`"${str}" is not a palindrome.`);
      return false;
    }
  }

  let testString = "madam";
  isPalindrome(testString);
```

3. **Write a JavaScript function to format a number up to specified decimal places [Marks: 15]**

Ans:
```
function decimals(n, d) {
    if ((typeof n !== 'number') || (typeof d !== 'number'))
      return false;
           n = parseFloat(n) || 0;
       return n.toFixed(d);
       }
   console.log(decimals(2.100212, 2));
   console.log(decimals(2.100212, 3));
   console.log(decimals(2100, 2));
```

Section – III

1. **Differentiate arrow functions and regular functions.** **[Marks:5]**

Ans: Arrow functions and regular functions in JavaScript have some differences in terms of their syntax, lexical this binding, and argument handling:
Syntax: Arrow functions have a more concise syntax than regular functions, using the "=>" operator instead of the "function" keyword.
Lexical this binding: Arrow functions do not have their own "this" value, they inherit the "this" value of the surrounding scope. Regular functions, on the other hand, have their own "this" value which can be dynamically assigned.
Argument handling: Arrow functions do not have the "arguments" object like regular functions. Instead, they use the normal function parameter syntax.
In general, arrow functions are best suited for small, non-method functions, while regular functions are better suited for more complex logic and object methods.

2. **Write a program that takes a number of greater than 5 digits from input field and shows sum of all odd numbers. For example, if the input is 196783, the sum would be 1 + 9 + 7 + 3 = 20.** **[Marks: 5]**

Ans:
```
<html>
  <head>
    <title>Odd Number Sum</title>
  </head>
  <body>
    <div>
      <label for="inputNumber">Enter a number:</label>
      <input type="text" id="inputNumber" />
    </div>
    <button id="calculateBtn">Calculate</button>
    <div id="output"></div>
    <script>
      const input = document.getElementById("inputNumber");
      const btn = document.getElementById("calculateBtn");
      const output = document.getElementById("output");

      btn.addEventListener("click", function() {
        let num = input.value;
        if (num.length <= 5) {
          output.innerHTML = "Please enter a number with more than 5 digits.";
          return;
        }
```

```
        let sum = 0;
        for (let i = 0; i < num.length; i++) {
          let digit = parseInt(num[i]);
          if (digit % 2 !== 0) {
            sum += digit;
          }
        }

        output.innerHTML = "Sum of all odd numbers: " + sum;
      });
    </script>
  </body>
</html>
```

3. **Given an integer N, the task is to find the sum of interior angles of an N-sided polygon.** **[Marks: 5]**

Ans:
```
function sumOfInteriorAngles(N) {
    return (N - 2) * 180;
  }

  console.log(sumOfInteriorAngles(3));
  console.log(sumOfInteriorAngles(4));
  console.log(sumOfInteriorAngles(5));
```

4. **Create a age calculator that takes date of birth of user and shows age in years, months and days.** **[Marks: 5]**

Ans:
```
function calculateAge(dob) {
    const now = new Date();
    const birthDate = new Date(dob);
    let ageInMilliseconds = now - birthDate;
    let ageInSeconds = ageInMilliseconds / 1000;
    let ageInMinutes = ageInSeconds / 60;
    let ageInHours = ageInMinutes / 60;
    let ageInDays = ageInHours / 24;
    let ageInMonths = ageInDays / 30.44;
    let ageInYears = ageInMonths / 12;

    return {
        years: Math.floor(ageInYears),
        months: Math.floor(ageInMonths % 12),
        days: Math.floor(ageInDays % 30.44),
    };
  }

  console.log(calculateAge("1998-12-21"));
```

Section – IV

1. **In this question you must multiply two matrices A and B and store the answer in matrix C. For multiplying matrices, you must take care of the matrix multiplication rule i.e the column number of matrix A should be equal to matrix B.**
   Step 1: Get matrix size from the user for both matrices and compare them. If it don't follow the matrix multiplication rule, ask user again for the correct values.
   Step 2: Store values in list for each matrix by prompting user to enter the values.
   Step 3: Calculate the product of matrix A and matrix B.
   Step 4: Display the out in proper format. **[Marks: 25]**

Ans:
```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <script src="https://cdnjs.cloudflare.com/ajax/libs/mathjs/11.5.1/math.js"
integrity="sha512-
gIaHF8pKynuRYPvDDLkS6Gj6dS+tpE4khy3CwBIwyKxK3rOJ+LXFGM97BoZh5xtGnGSIky6TJqxfAZcGA8D
N3Q==" crossorigin="anonymous" referrerpolicy="no-referrer"></script>
    <title>Matrix Multiply</title>
</head>
<body>
    <script type="text/javascript">
        A = [[1,2],
             [3,4]];
        B = [[5,6],
             [7,8]];
        result = math.multiply(A,B);
        result.forEach((n) => document.write(n, '<br>'));
    </script>
</body>
</html>
```