**Module (JAVASCRIPT BASIC & DOM) – 4**

**(Basic logic Questions and answers).**

**Q-1. What is JavaScript. How to use it?**

* Javascript is a server-side and client-side scripting language.
* Javascript is asynchronous language.
* Javascript letest verison is ES14.

How to use :

* There are two types to use javascript :

1. External javascript : We can create a new file of javascript and write the javascript code in there.

2. Internal javascript : We can easily write a code in our html file.

**Q-2. How many types of variable in javascript ?**

* There are three types of variables.

1. Let.
2. Var.
3. Const.

**Q-3. Define a Data Type in JS ?**

1. Primitive Data Type :

* Null.
* Number.
* Boolean.
* Bigint.
* String.
* Symbol().
* Undefined.

1. Non-Primitive Data Type :

* Object : Object is return keys and values.
* Array : Array is return index and length.

**Q.4 Write a mul Function Which will Work Properly When invoked With Following Syntax.**

function mul(x, y) {

                return x\*y;

            };

            console.log(mul(4, 2));

            // ans = 8;

**Q.5 What the deference between undefined and undeclare in JavaScript?**

* Undefined variable means a variable has been declared but does not have a value. Undeclared variable means that the variable does not exist in the program at all.

**Q.6 Using console.log() print out the following statement: The quote 'There is no exercise better for the heart than reaching down and lifting people up.' by John Holmes teaches us to help one another. Using console.log() print out the following quote by Mother Teresa:**

console.log("The quote 'There is no exercise better for the heart than reaching down and lifting people up.' by John Holmes teaches us to help one another.");

console.log("Spread love everywhere you go. Let no one ever come to you without leaving happier. - Mother Teresa");

**Q.7 Check if typeof '10' is exactly equal to 10. If not make it exactly equal?**

let a = 10;

            let b = "10";   //10

            console.log(typeof a);

            console.log(typeof b);

            if(typeof a === typeof b){

                console.log("True");

            }

            else{

                console.log("False");

            }

            // Ans : False because datatype is not same, if b = 10 then answer is true.

**Q.8 Write a JavaScript Program to find the area of a triangle?**

let base = prompt("Enter the triangle base size : ");

let height = prompt("Enter the triangle height : ");

let area = (base\*height)/2;

console.log(`base size : ${base}`);

console.log(`height is : ${height}`);

console.log("Area of triangle is : ",area);

**Q.9 Write a JavaScript program to calculate days left until next Christmas?**

let today = new Date();

let Year\_2023 = today.getFullYear();

let christmas = new Date(Year\_2023, 11, 25);

if (today.getMonth() === 11 && today.getDate() > 25) {

        christmas.setFullYear(Year\_2023 + 1);

    }

let Time = christmas.getTime() - today.getTime();

let DayCount = Math.ceil(Time / (1000 \* 60 \* 60 \* 24));

console.log("Days left until next Christmas: " + DayCount);

// Ans: Days left until next Christmas : 350.

**Q.10 What is Condition Statement?**

* Use if to specify a block of code to be executed, if a specified condition is true. Use else to specify a block of code to be executed**.**
* There are some types of conditional statements **:**

1. if...else...
2. nested if...else...
3. switch...case...
4. nested switch...case...

**Q.11 Find circumference of Rectangle formula : C = 4 \* a ?**

let length = 20;

let width = 10;

let circumference;

function rect(l, w) {

    return 2 \* (l + w);

}

circumference = rect(length, width);

console.log("length = ",length ,"width = ",width ,"circumference = ",circumference);

// Ans : 60

**Q.12 WAP to convert years into days and days into years?**

let year = prompt("Enter the years : ");

let day = prompt("Enter the days : ");

year = year\*365;

day = day/365;

console.log(year);

console.log(day);

**Q.13 Convert temperature Fahrenheit to Celsius? (Conditional logic Question).**

function Celsius(fahrenheit) {

    if (typeof fahrenheit !== 'number') {

      return 'Input  a number';

    }

    var celsius = (fahrenheit - 32) \* 5 / 9;

    if (celsius < 0) {

      return ' cold';

    } else if (celsius > 0 && celsius < 15) {

      return 'cool';

    } else {

      return 'warm';

    }

  }

  // Example usage:

  var Temperature = 68;

  console.log(Celsius(Temperature));

**Q.14 Write a JavaScript exercise to get the extension of a filename.?**

// Assign the string "system.php" to the variable filename

filename = "system.php";

console.log(filename.split('.').pop());

filename = "abc.js";

console.log(filename.split('.').pop());

**Q.15 What is the result of the expression (5 > 3 && 2 < 4)?**

console.log(5>3 && 2<4);

Ans : true

**Q.16 What is the result of the expression (true && 1 && "hello")?**

console.log(true && 1 && "hello");

Ans : hello

**Q.17 What is the result of the expression true && false || false && true?**

console.log(true && false || false && true);

Ans : false

**Q.18 What is a Loop and Switch Case in JavaScript define that ?**

**Loop :**

* loop is used in JavaScript to perform repeated tasks based on a condition

**Switch Case :**

* The switch statement is used to perform different actions based on different conditions.

**Q.19 What is the use of isNan function?**

* Nan means Not-a-number.
* When the value is NaN than isNaN is return the true and when the value is not NaN than isNaN is return the false.
* **Exp:**

let str = "Hyy";

let int = 123;

console.log(isNaN(str));    Ans : true.

console.log(isNaN(int));    Ans : false.

**Q.20 What is the difference between && and || in JavaScript?**

**&&(And) :**

* && is the logical AND operator, which returns true only if both of its operands are true. On the other hand.

**||(Or) :**

* || is the logical OR operator, which returns true if at least one of its operands is true.

**Q.21 What is the use of Void (0)?**

* Void(0) stops pages from refreshing, and "zero" is used to pass the parameter while calling.
* Void(0) is used to call another method without refreshing the page.

**Q.22 Check Number Is Positive or Negative in JavaScript?**

let num = prompt("Enter the number : ");

if(num >= 0){

console.log("Number is positive : ",num);

}

else if(num < 0) {

console.log("Number is nagative : ",num);

}

else{

console.log("You entered number is invalid.");

}

**Q.23 Find the Character Is Vowel or Not ?**

let Vovels = prompt("Enter any alphabates : ");

Vovels = Vovels.toUpperCase();

switch (Vovels){

case 'A':

console.log("You enatered alphabate is vovel");

break;

case 'E':

console.log("You enatered alphabate is vovel");

break;

case 'I':

console.log("You enatered alphabate is vovel");

break;

case 'O':

console.log("You enatered alphabate is vovel");

break;

case 'U':

console.log("You enatered alphabate is vovel");

break;

default:

console.log("You enatered alphabate is not vovel");

}

**Q.24 Write to check whether a number is negative, positive or zero?**

let Whether = prompt("Enter the number : ");

if(Whether = 0){

console.log("Whether is zero : ",Whether);

}

else if(Whether > 0) {

console.log("Whether is positive : ",Whether);

}

else if(Whether < 0){

console.log("Whether is nagative : ",Whether);

}

else {

console.log("You entered number is invalid");

}

**Q.25 Write to find number is even or odd using ternary operator in JS?**

let EvenOdd = prompt("Enter the number : ");

let Operat = EvenOdd % 2 === 0 ? "Number is Even" : "Number is Odd";

console.log(Operat);

**Q.26 Write find maximum number among 3 numbers using ternary operator in JS?**

let num1 = prompt("Enter the num 1 : ");

let num2 = prompt("Enter the num 2 : ");

let num3 = prompt("Enter the num 3 : ");

let max = num1>num2 ? (num1>num3 ? num1 : num3): (num2>num3 ? num2 : num3);

console.log(`${max} is max.`);

**Q.27 Write to find minimum number among 3 numbers using ternary operator in JS?**

let num1 = prompt("Enter the num 1 : ");

let num2 = prompt("Enter the num 2 : ");

let num3 = prompt("Enter the num 3 : ");

let min = num1<num2 ? (num1<num3 ? num1 : num3): (num2<num3 ? num2 : num3);

console.log(`${min} is min.`);

**Q.28 Write to find the largest of three numbers in JS?**

let num1 = prompt("Enter the num 1 : ");

let num2 = prompt("Enter the num 2 : ");

let num3 = prompt("Enter the num 3 : ");

if(num1>num2){

if (num1>num3) {

console.log(`${num1} is large.`);

}

else{

console.log(`${num3} is large.`);

}

}

else {

if (num2>num3) {

console.log(`${num2} is large.`);

}

else{

console.log(`${num3} is large.`);

}

}

**Q.29 Write to show:**

**1. Monday to Sunday using switch case in JS?**

let Days = prompt("Enter number (1 to 7) : ");

Days = Number.parseInt(Days);

        switch (Days){

            case 1:

                console.log("Sunday");

                break;

            case 2:

                console.log("Monday");

                break;

            case 3:

                console.log("Monday");

                break;

            case 4:

                console.log("Wednesday");

                break;

            case 5:

                console.log("Thersday");

                break;

            case 6:

                console.log("Friday");

                break;

            case 7:

                console.log("Saturday");

                break;

            default:

                console.log("Invalid number.");

                break;

            }

**2. Vowel or Consonant using switch case in JS?**

let Vovels = prompt("Enter any alphabates : ");

        Vovels = Vovels.toUpperCase();

        switch (Vovels){

            case 'A':

                console.log("You enatered alphabate is vovel");

                break;

            case 'E':

                console.log("You enatered alphabate is vovel");

                break;

            case 'I':

                console.log("You enatered alphabate is vovel");

                break;

            case 'O':

                console.log("You enatered alphabate is vovel");

                break;

            case 'U':

                console.log("You enatered alphabate is vovel");

                break;

            default:

                console.log("You enatered alphabate is consonant");

            }

**(Conditional looping logic Question)**

**Q.30 What are the looping structures in JavaScript? Any one Example?**

* Loops are handy, if you want to run the same code over and over again, each time with a different value.

Exp :

for(let num = 0; num <= 10; num++)

{

console.log(num);

}

// Ans : print 1 to 10.

**Q.31 Write a print 972 to 897 using for loop in JS?**

for(let num = 992; num >= 897; num--)

{

console.log(num);

}

// Ans : print 992 to 897(Dicriment).

**Q.32 Write to print factorial of given number?**

let num = prompt("Enter a number for find factorial : ");

num = Number.parseInt(num);

let fact = 1;

for(let i = 1; i <= num; i++)

{

fact = fact \* i;

}

console.log(fact);

// Ans: if num = 6, elase factorial of num = 720.

**Q.33 Write to print Fibonacci series up to given numbers?**

let Fibbo = parseInt(prompt("Enter the number : "));

let n1 = 0, n2 = 1, n3;

console.log("Fibonacci series.....");

for(let i = 1; i <= Fibbo; i++){

console.log(n1);

n3 = n1 + n2;

n1 = n2;

n2 = n3;

}

**Q.34 Write to print number in reverse order e.g.: number = 64728 ---> reverse =82746 in JS?**

function reverseNumber(number) {

    // Convert number to string

    let numberString = number.toString();

    let reversedString = numberString.split('').reverse().join('');

    let reversedNumber = parseInt(reversedString);

    return reversedNumber;

}

let number = 64728;

let reversed = reverseNumber(number);

console.log("Original number:", number);

console.log("Reversed number:", reversed);

**Q.35 Write a program make a summation of given number (E.g., 1523 Ans: - 11) in JS?**

let num = parseInt(prompt("Enter the number for sum : "));

let sum = 0;

while(num > 0){

let r = num % 10;

sum = sum + r;

num = parseInt(num / 10);

}

console.log(sum);

**Q.36 Write a program you have to make a summation of first and last Digit. (E.g., 1234 Ans: - 5) in JS?**

function sumFirstAndLastDigit(number) {

    let numberString = number.toString();

    let firstDigit = parseInt(numberString[0]);

    let lastDigit = parseInt(numberString[numberString.length - 1]);

    let sum = firstDigit + lastDigit;

    return sum;

}

let number = 1234;

console.log("Sum of first and last digit of", number, "is:", sumFirstAndLastDigit(number));

**Q.37 Use console.log() and escape characters to print the following pattern in JS?**

**1 1 1 1 1**

**2 1 2 4 8**

**3 1 3 9 27**

**4 1 4 16 64**

**5 1 5 25 125**

// Loop through each row

for (let i = 1; i <= numRows; i++) {

    let row = '';

    let multiplier = 1;

    // Print the current row

    for (let j = 1; j <= 5; j++) {

        if (j === 1) {

            row += `${i} `;

        } else {

            row += `${multiplier} `;

            multiplier \*= i;

        }

    }

    // Print the row

    console.log(row);

}

**Q.38 Use pattern in console.log in JS?**

1. **1**

**1 0**

**1 0 1**

**1 0 1 0**

**1 0 1 0 1**

function printPattern(rows) {

    for (let i = 1; i <= rows; i++) {

        let rowPattern = '';

        for (let j = 1; j <= i; j++) {

            if (j % 2 === 0) {

                rowPattern += '0 ';

            } else {

                rowPattern += '1 ';

            }

        }

        console.log(rowPattern.trim());

    }

}

printPattern(5);

**(2)** function printTriangle(height) {

    for (let i = 1; i <= height; i++) {

        let row = '';

        for (let j = 1; j <= i; j++) {

            if (j % 2 === 0) {

                row += '0';

            } else {

                row += '1';

            }

        }

        console.log(row);

    }

}

// Change the value of height to adjust the size of the triangle

const height = 5;

printTriangle(height);

**(3)**

function printPattern(rows) {

    // Loop through each row

    for (let i = 1; i <= rows; i++) {

        let pattern = '';

        // Add asterisks based on the row number

        for (let j = 1; j <= i; j++) {

            pattern += '\* ';

        }

        console.log(pattern);

    }

}

// Call the function with the number of rows you want in the pattern

printPattern(5);