

Module 6) JAVASCRIPT BASIC & DOM

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

Ans: JavaScript is a scripting or programming language for dynamically updating content, control multimedia, animate images. it is generally used for create user-friendly and interactive websites.

Q.2 How many type of Variable in JavaScript?

Ans: there are generally three types of variable in JavaScript:

- 1) let
- 2) Var
- 3) Const

Q.3 Define a Data Types in js?

Ans: There are mainly two types in js:

1) Primitive Data Types:

Number
Null
Boolean
Big Int
String
Symbol
Undefined

2) Non-Primitive Data Types:

Object
Array
Function
Date
Regex

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

Ans:

```
function mul(a,b,c){  
var multi=a*b*c;
```

```
return multi
}  
document.write(mul(10,20,30))
```

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

Ans:

Undefined:

A variable that has been declared but has not been assigned a value.

Exists within the scope it was declared Attempting to access an undefined variable will not cause an error, it simply returns 'undefined'.

Undeclare:

A variable that has not been declared in any scope.

Does not exist in any scope until it is first assigned a value.

If it is assigned without being declared, it implicitly becomes a global variable.

Attempting to access an undefined variable will result in a 'ReferenceError'.

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:

Ans:

```
<script>  
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("Mother Teresa once said, \"If you can't feed a hundred people,  
then feed just one.\");  
</script>
```

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

Ans:

```
<script>  
    console.log(typeof('10'));  
    console.log(typeof(10));  
    let str = '10';  
    num=10;
```

```
        console.log(str === num);
        console.log(Number(str)===num);
</script>
```

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

Ans:

```
function area(b,h){
    a=0.5*b*h;
    Return a;
}
Console.log(area(10,10));
```

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

Ans:

```
// Function to calculate the number of days left until next Christmas
function daysUntilChristmas() {
// Get the current date
let currentDate = new Date();
// Get the current year
let currentYear = currentDate.getFullYear();
// Create a new Date object for Christmas of the current year
let christmasDate = new Date(currentYear, 11,25); // Month is 0-based index (11
represents December)
// If Christmas has already passed this year, set it to next year
if (currentDate.getMonth() === 11 && currentDate.getDate() > 25) {
christmasDate.setFullYear(currentYear + 1);
}
// Calculate the difference in milliseconds between the current date and
Christmas
let timeDiff = christmasDate.getTime() -
currentDate.getTime();
// Calculate the number of days left until Christmas
let daysLeft = Math.ceil(timeDiff / (1000 * 3600 * 24));
return daysLeft;
} let daysLeft =
daysUntilChristmas();
console.log("Days left until next Christmas:", daysLeft);
```

Q.10 What is Condition Statement?

Ans: A condition statement, often referred to in programming contexts, is a fundamental concept used to control the flow of execution in a program based on whether certain conditions are true or false. It typically involves the use of conditional expressions or statements that evaluate to true or false (Boolean values).

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

Ans: Condition Statement is provide true or false a specified condition.

```
Function Rec(a){  
  C=4*a;  
  Return C;  
}  
Console.log(Rec(10));
```

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

Ans:

```
<script>  
  function convert(year, day) {  
    // Convert years to days  
    var yearsToDays = year * 365.25;  
    // Convert days to years  
    var daysToYears = day / 365.25;  
    return {  
      days: yearsToDays,  
      years: daysToYears  
    };  
  }  
  result=convert(2, 214);  
  document.write(`2 years is approximately  
  ${result.days.toFixed(2)} days.<br>`);  
  document.write(`214 days is approximately  
  ${result.years.toFixed(2)} years.`);  
</script>
```

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

Ans:

```
Function F2C(f):  
    {  
        C=(f-32)*5/9;  
        Return C;  
    }  
    Console.log(F2C(40));
```

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

Ans:

```
<script>  
    let file= prompt("Enter a file:");  
    document.write(file.split('.').pop())  
</script>
```

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

Ans:True

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

Ans:"hello"

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

Ans:False

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

Ans:Loop is repeatedly executes a block of code as long as a specified condition is true .

It is used to execute one block of code from multiple options based on the value of a given expression.

```
Switch(expression){  
    case value1:  
        //block of code  
        Break;
```

```

case value2:
    //block of code
    Break;
Default;
    // Code to execute when none of the
    cases are matched
}

```

Q.19 What is the use of is Nan function?

Ans:It first tries to convert the given value to a number, and then checks if the result is NaN. This means it might return true for values that are not strictly NaN but are not valid numbers either.

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

Ans:The && operator returns true if both operands are true; otherwise, it returns false.

The || operator returns true if at least one of the operands is true.

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

Ans:The void keyword in JavaScript is used to evaluate an expression and then return undefined.

The most common use of void is in combination with the value 0 to create a self-executing anonymous function or to prevent a browser from navigating to a new page when clicking on a link.

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

Ans:

```

<script>
let num = prompt("Enter a number:");
num = Number(num);

function check(num){
    return (num > 0) ? "positive" : "negative";
}
</script>

```

Q.23 Find the Character Is Vowel or Not?

Ans:

```
char="s"
function checkVowelOrConsonant(char) {
    switch(char) {
        case 'a':
        case 'e':
        case 'i':
        case 'o':
        case 'u':
            return char + " is a vowel";
        default:
            return char + " is a consonant";
    }
}
document.write(checkVowelOrConsonant(char))
```

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

Ans:

```
<script>
    let num = prompt("Enter a number:");
    num = Number(num);
function check(num){
    return num==0?num + " is zero.":
    (num>0?num+ "is positive.":num<0?num+ "is negative.")
}

```

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

Ans:

```
<script>
    let inputNumber = prompt("Enter a number:");
    inputNumber = Number(inputNumber);

function check(inputNumber){
    return(inputNumber%2==0) ? "Even":"Odd";
}
document.write(check(inputNumber))
</script>
```

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

Ans:

```
<script>
    let a = 5, b = 10, c = 8;
    let max = (a > b) ? (a > c ? a : c) : (b > c ? b : c);
    console.log("The maximum number is "+max);
</script>
```

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

Ans:

```
<script>
    let a = 5, b = 10, c = 8;
    let max = (a < b) ? (a < c ? a : c) : (b < c ? b : c);
    console.log("The maximum number is "+max);
</script>
```

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

Ans:

```
function findLargest(a, b, c) {
    if (a >= b && a >= c) {
        return a;
    } else if (b >= a && b >= c) {
        return b;
    } else {
        return c;
    }
}
```

```
const a = 10;
const b = 25;
const c = 15;
```

```
const largest = findLargest(a,b,c);
console.log("The largest number is " + largest);
```


Q.29 Write to show

i. Monday to Sunday using switch case in JS?

Ans:

```
var date = new Date().getDay();
switch(date) {
    case 0:
        date = "Sunday";
        break;
    case 1:
        date = "Monday";
        break;
    case 2:
        date = "Tuesday";
        break;
    case 3:
        date = "Wednesday";
        break;
    case 4:
        date = "Thursday";
        break;
    case 5:
        date = "Friday";
        break;
    case 6:
        date = "Saturday";
        break;
    default:
        date = "Invalid day";
}
console.log("Today is " + date);
```

ii. Vowel or Consonant using switch case in JS?

Ans:

```
<script>
    var char = "s";
    switch (char) {
        case 'a':
        case 'e':
```

```

        case 'i':
        case 'o':
        case 'u':
            document.write(char + " is a vowel");
            break;
        default:
            document.write(char + " is a consonant");
    }
</script>

```

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

Ans: There are many looping structures that allow to execute a block of code multiple times.

- 1) for loop
- 2) While loop
- 3) Do while loop
- 4) For in
- 5) For each
- 6) Switch

Example:

```

For(let i=0; i<100;i++){
    If(i%2==0){
        Document.write(i + "<br>")
    }
}

```

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

Ans:

```

For(var i=972;i<897;i--){
    Document.write(i)
}

```

Q.32 Write to print factorial of given number?

Ans:

```
var i;  
var fact=0;  
var num=5;  
For(i, i<=n; i++){  
    fact=fact*i  
}  
Console.log(fact)
```

Q.33 Write to print number in reverse order e.g.: number = 64728 ---> reverse =82746 in JS?

Ans:

```
function reverseNumber(number) {  
var numberString=number.toString();  
reversedString = '';  
    for (var i = numberString.length - 1; i >= 0; i--) {  
        reversedString=  
        reversedString+numberString[i];  
    }  
    var reversedNumber = parseInt(reversedString);  
    return reversedNumber;  
}  
var number = 64728;  
console.log("Original number: " + number);  
console.log("Reversed number: " +  
reverseNumber(number));
```

Q.34 Write a program make a summation of given number (E.g., 1523 Ans: - 11) in JS?

Ans:

```
function summation(num) {  
    var sum = 0;  
    var numString = num.toString();
```

```

        for (var i = 0; i < numString.length; i++) {
            sum += parseInt(numString[i]);
        }
        return sum;
    }
}

```

```

var num = 1523;
var result = summation(num);
console.log(result);

```

Q.35 Write a program you have to make a summation of first and last Digit. (E.g., 1234 Ans: - 5) in JS?

Ans:

```

Var num=1234;
Var a;
Var sum=0;
Function sum(num){
    Var numstring=num.toString();
    For (var l=0;l<numstring.length;l++){

        sum=parseInt(numstring[0])+parseInt(numstring[length-1]);
    }
    return sum;
}
Console.log("sum");

```

Q.36 Use console.log() and escape characters to print the following pattern in JS?

Ans:

```

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
for(let i = 1; i <= 5; i++) {
    let output = "";

```

```

        for (let j = 0; j <= 3; j++) {
            output += `${power}`;
        }
        output = `${i} ${output}`;
        console.log(output.trim());
    }
}

```

Q.37 Use pattern in console.log in JS?

Ans:

```

11
0
1 0 1
1 0 1 0
1 0 1 0 1

```

```

for (var i = 1; i <= 5; i++) {
    for (var j = 1; j <= i; j++) {
        if (j % 2 !== 0) {
            document.write("1 ");
        } else {
            document.write("0 ");
        }
    }
    document.write("<br>");
}

```

```

A
B C D
E F
G H I J
K L M N O

```

```

var currentCharCode = 65;
var pattern = [1, 3, 2, 4, 5];

```

```

for (var i = 0; i < pattern.length; i++) {
    for (var j = 0; j < pattern[i]; j++) {
        document.write(String.fromCharCode(currentCharCode) + " ");
    }
}

```

```
        currentCharCode++;
    }
    document.write("<br>");
}
```

```
1
2 3
4 5 6
7 8 9 10
11 12 13 14 15
```

```
for (var i = 1; i <= 5; i++) {
    for (var j = 1; j <= i; j++) {
        document.write(sum + " ");
        sum++;
    }
    document.write("<br>");
}
```

```
*
* *
* * *
* * * *
* * * * *
```

```
for (var i = 1; i <= 5; i++) {
    for (var j = 1; j <= i; j++) {
        document.write("*" + " ");
    }
    document.write("<br>");
}
```