1. What is Javascript?(interpreted client-side scripting)
2. Features of Javascript.(weakly/untyped)
3. What can you do with javascript that you can't do with Html?
4. difference between compiler and interpreter.
5. How do you write program with js in Html?
6. What is a reserved word in js?
7. What is literal?
8. Data types in js - Numbers, Scientific Notations, Hexadecimal, Strings, Boolean, Objects, Arrays, Undefined, Null, Empty
9. Concatenations
10. What is a variable? How to declare a variable and assign a value to it?
11. Global and Local
11. Primitive and Compound Data.
12. Operators and Expressions
13. Regular Expressions
14. precedence

1.What is Javascript?
   Ans. Javascript is an interpreted client-side scripting language.

2. Why is Javascript used/ what can you do with js?
   Ans. JavaScript is used to create interactive websites. It is mainly used for:

   ● Client-side validation,

   ● Dynamic drop-down menus,

   ● Displaying date and time,

   ● Displaying pop-up windows and dialog boxes (like an alert dialog box, confirm dialog box and prompt dialog box),

   ● Displaying clocks etc.

3. Difference between Html and Javascript
   Ans. page no 15 in your book 2nd para
4. Features of javascript
   Ans.
      a. Js is case-sensitive
      b. It is weakly typed or untyped
      c. Semicolons are optional in js
      d. It is an interpreted and object based scripting language

5. What are reserved words in js? Give some examples.
   Ans. Reserved words are those in js that have been reserved for statements and built-in functions. One should not use any reserved word for one's own variable or function.
For example, abstract, break etc. are reserved words.
6. What is a literal in js?
   Ans. The raw data that make up the root of data types are called "literals". Numbers, Strings, and Boolean values make up the core set of literals.
 For example, var a = 'hello world' here **a** is a variable and 'hello world' is a String literal.

7. What are the javascript data types ?

Ans. There are two types of data types in JavaScript:

Primitive Data Types - The primitive data types are as follows:

Data Type	Description
String	represents a sequence of characters, e.g., "hello"
Number	represents numeric values, e.g., 100
Boolean	represents boolean value either false or true
Undefined	represents an undefined value
Null	represents null, i.e., no value at all

Non-primitive Data Types - The non-primitive data types are as follows:

Data Type	Description
Object	represents an instance through which we can access members
Array	represents a group of similar values
RegExp	represents regular expression

8. What is String Concatenation?

Ans. String Concatenation refers to binding one or more strings into a single string. '+' sign is used for concatenation.

Example: var a = 'hello'; var b = 'world' var c = a + b

9. What is a variable? How to declare a variable and assign a value to it?

Ans. JavaScript variables are containers for storing data values.

Example: var example = 9; here example is a variable and a number value 9 is assigned to it;

10. What are global and local variables?

Ans. A global variable has global scope and is defined in the entire script.

Local variables are local to the functions in which they are defined.

Example: var exVar = 'hello'; function testVar(){ var exVar = 'world'} here exVar outside the function is a global variable and inside the function is local.

11. What is a Regular Expression in js?

Ans. A regular expression is an object that describes a pattern of characters.

Regular expressions are used to perform pattern-matching and "search-and-replace" functions on text.

Example: var str = 'hello world'; str.search(/world/i); here /world/i is a regular expression.

12. What is an array in js? Give an example.

Ans. **JavaScript array** is an object that is used to store multiple values in a single variable.

Ex: var arr = [1,2,3]; here arr is an array which stores multiple values.

13. How many ways can you create an array?

Ans. There are 3 ways to construct array in JavaScript

1. By array literal; var emp=["Sonoo","Vimal","Ratan"];
2. By creating instance of Array directly (using new keyword); var arrayname=new Array(); emp[0] = "Arun"; emp[1] = "Varun";
3. By using an Array constructor (using new keyword); var emp=new Array("Jai","Vijay","Smith");

14. How to use external javascript file?

Ans. I am assuming that js file name is message.js, place the following script tag inside the head tag.

```
<script type="text/javascript" src="message.js"></script>
```

15. How to write a hello world example of js?

```
<script type="text/javascript">  document.write("JavaScript Hello World!");
</script>
```

16. What is DOM? Write the Html form hierarchy?

DOM stands for *Document Object Model*. A document object represents the HTML document. It can be used to access and change the content of HTML.

a.window b.document c.form d.element e.element value

17. How to write a comment in js?

There are two types of comments in JavaScript.

1. Single Line Comment: It is represented by // (double forward slash)
2. Multi-Line Comment: Slash represents it with asterisk symbol as /* write comment here */

18. What is a function? How to create a function in js?

a function contains a unit of code that works on various inputs, many of which are variables, and performs a specific task.

To create a function in JavaScript, follow the following syntax.

1. function function_name(){
2. //function body
3. }

19. What is the difference between == and ===?

The == operator checks equality only whereas === checks equality, and data type, i.e., a value must be of the same type.

Ex: var a = 5; b = '5'; a == b checks the value only and returns true; a===b checks both value and type and returns false.

20. How to create objects in js?

There are 3 ways to create an object in JavaScript.

1. By object literal. emp={id:102,name:"Rahul Kumar",salary:50000}
2. By creating an instance of Object. var emp=new Object();
   emp.id=101;emp.name="Ravi Malik";
3. By Object Constructor.

   function emp(id,name,salary){

   this.id=id;

   this.name=name;

   this.salary=salary;

   }

   e=new emp(103,"Vimal Jaiswal",30000);

21. What does isNan() functio do?

The isNan() function returns true if the variable value is not a number. For example:

```
function number(num) {
  if (isNaN(num)) {
   return "Not a Number";
  }
   return "Number";
}
console.log(number('1000F'));
// expected output: "Not a Number"


console.log(number('1000'));
// expected output: "Number"
```

22. What is the output of 10+20+"30" in JavaScript? 3030

23. What is the output of "10"+20+30 in JavaScript? 102030

24. Describe the differences between undefined value and null value?

Undefined value: A value that is not defined and has no keyword is known as undefined value. For example:

int number;//Here, a number has an undefined value.

Datatype of undefined is undefined .

Null value: A value that is explicitly specified by the keyword "null" is known as a null value. For example:

String str=null;//Here, str has a null value.

Datatype of null is object.

25. What are the pop boxes available in js?

1. Alert Box; alert('hello world') displays the alert box containing the message with ok button.
2. Confirm Box; confirm('are you sure')displays the confirm dialog box containing the message with ok and cancel button.
3. Prompt Box: prompt('who are you?') displays a dialog box to get input from the user.

26. How to change the background color of html document using javascript?

```
<script type="text/javascript">
document.body.bgColor="pink";
</script>
```

27. What is the use of a Date object in js?

The JavaScript date object can be used to get a year, month and day. You can display a timer on the webpage by the help of JavaScript date object.

```
var date=new Date();
var day=date.getDate();
var month=date.getMonth()+1;
var year=date.getFullYear();
document.write("<br>Date is: "+day+"/"+month+"/"+year);
```

28. What is the use of a Number object in js?

The JavaScript number object enables you to represent a numeric value. It may be integer or floating-point. JavaScript number object follows the IEEE standard to represent the floating-point numbers.

```
var x=102;//integer value
var y=102.7;//floating point value
var z=13e4;//exponent value, output: 130000
var n=new Number(16);//integer value by number object
document.write(x+" "+y+" "+z+" "+n);
```

29. What is the use of a Boolean object in js?

The JavaScript Boolean is an object that represents value in two states: true or false. You can create the JavaScript Boolean object by Boolean() constructor.

    document.writeln(10**<20**);//true

    document.writeln(10**<5**);//false

34. Describe the methods used for regular expressions in js.

search()	It searches a specified regular expression in a given string and returns its position if a match occurs.
	
	   var str="JavaScript is a scripting language. Scripting languages are often interpreted";
	
	   document.writeln(str.search(/Scripting/)); output: 36

match()	It searches a specified regular expression in a given string and returns that regular expression if a match occurs.
	
	   var str="Javatpoint";
	
	   document.writeln(str.match(/Java/g)); output: Java

replace()	It replaces a given string with the specified replacement. var str="Javatpoint";document.writeln(str.replace("tpoint","Script")); output: JavaScript

| split() | It **splits a string into an array of substrings:**<br><br>```
var str = "How are you doing today?";

var res = str.split(/doing/); output: "How are you ,
today?";
``` |

35. Write the functionalities of array methods - join(), concat(), push(), pop(), shift(), unshift(), slice(), splice(), sort(), reverse().

join()	It joins the elements of an array as a string. var arr=["AngularJs","Node.js","JQuery"] var result=arr.join('-') document.write(result); output: AngularJs-Node.js-JQuery

concat()	It returns a new array object that contains two or more merged arrays.
	var arr1=["C","C++","Python"];
	var arr2=["Java","JavaScript","Android"];
	var result=arr1.concat(arr2); //["C", "C++", "Python", "Java", "JavaScript", "Android"]

push()	It adds one or more elements to the end of an array.
	var arr=["AngularJS","Node.js"];
	Var numPushed = arr.push("JQuery"); //3
	Now, arr = ["AngularJS", "Node.js", "JQuery"]

pop()	It removes and returns the last element of an array.
	var arr=["AngularJS","Node.js","JQuery"];
	document.writeln(arr.pop()+" "); //JQuery
	document.writeln(arr)//AngulaJS,Node.js

shift()	It removes and returns the first element of an array.
	var arr=["AngularJS","Node.js","JQuery"];
	var result=arr.shift();
	document.writeln(result); //AngularJS
	document.writeln(arr); //Node.js,JQuery

unshift()	It adds one or more elements in the beginning of the given array.
	
	var arr=["AngularJS","Node.js"];
	
	var result=arr.unshift("JQuery");
	
	document.writeln(arr);//JQuery,AngularJS,Node.js

slice()	It extracts subarray from a given array.
	
	var arr=["AngularJS","Node.js","JQuery","Bootstrap"]
	
	var result=arr.slice(0,3);
	
	document.writeln(result); //AngularJS,Node.js,JQuery

splice()	It add/remove/replace elements to/from the given array.
	
	var arr=["Monday","Tuesday","Thursday","Friday"];
	
	var result=arr.splice(2,0,"Wednesday")
	
	document.writeln(arr);//Monday,Tuesday,Wednesday,Thursday,Friday

sort()	It returns the element of the given array in a sorted order.
	
	var arr=["AngularJS","Node.js","JQuery","Bootstrap"]
	
	var result=arr.sort();
	
	document.writeln(result); //AngularJS,Bootstrap,JQuery,Node.js

reverse()	It reverses the elements of given array.
	
	var arr=["AngulaJS","Node.js","JQuery"];
	
	var rev=arr.reverse();
	
	document.writeln(rev); // JQuery,Node.js,AngulaJS

36. What are new, delete and void operators?

Ans. All objects must begin with a constructor preceded by the new operator.

Exm: var arr = new Array(100)

The delete operator removes an object property or an array element in a script. The length of the array does not change. The removed property or element is undefined only.

The void operator suppresses the display of values from evaluated expressions.

javascript:void(0)

37. What values do typeof operator return?

The typeof operator returns one of the following values(data types):

number, string, boolean, object, function, undefined, null

38. What are sequential structures?

Sequential structures refer to the order in which the code is entered into a javascript program.

39. What are the main categories for events?

Events can be divided into three main categories:

1. Keyboard and mouse events,
2. Load events
3. Form related events

30. Which method is used to return the character at a specific index from string?/ what does charAt() do in js?

The JavaScript string charAt() method is used to find out a char value present at the specified index. The index number starts from 0 and goes to n-1, where n is the length of the string. The index value can't be a negative, greater than or equal to the length of the string. For example:

1. var str="Javatpoint";
2. document.writeln(str.charAt(4));

31. What is the use of window object? Describe some methods of the window object?

alert()	displays the alert box containing the message with ok button.
confirm()	displays the confirm dialog box containing the message with ok and cancel button.
prompt()	displays a dialog box to get input from the user.
open()	opens the new window.
close()	closes the current window.
setTimeout ()	performs the action after specified time like calling function, evaluating expressions.

32. What is the use of history object?

The history object of a browser can be used to switch to history pages such as back and forward from the current page or another page. There are three methods of history object.

1. history.back() - It loads the previous page.
2. history.forward() - It loads the next page.
3. history.go(number) - The number may be positive for forward, negative for backward. It loads the given page number.

33. What do indexOf(), lastIndexOf(), substr(), substring(), slice(), toLowerCase(), toUpperCase(), concat() do with a string?

indexOf()	It provides the position of a char value present in the given string. var web="Learn JavaScript on Javatpoint"; document.write(web.indexOf('a')); output: 2

lastIndexOf()	It provides the position of a char value present in the given string by searching a character from the last position. var web="Learn JavaScript on Javatpoint"; document.write(web.lastIndexOf('a')); output: 23

substr()	It is used to fetch the part of the given string on the basis of the specified starting position and length. var str="Javatpoint"; document.writeln(str.substr(0,4)); output: Java

substring()	It is used to fetch the part of the given string on the basis of the specified index.
	
	    var str="Javatpoint";
	    document.writeln(str.substring(0,4)); output: Java

slice()	It is used to fetch the part of the given string. It allows us to assign positive as well negative index.
	
	    var str = "Javatpoint";
	    document.writeln(str.slice(2,5)); output: vat

toLowerCase()	It converts the given string into lowercase letter.
	
	    var str = "JAVATPOINT";
	    document.writeln(str.toLowerCase()); output: javatpoint

concat()	It provides a combination of two or more strings. 1. var x="Javatpoint"; 2. var y=".com"; 3. document.writeln(x.concat(y)); output: Javatpoint.com

toUpperCase()	It converts the given string into uppercase letter. var str = "javatpoint"; document.writeln(str.toUpperCase()); output: JAVATPOINT