1. Determine what this JavaScript code will print out (without running it):

```
x = 1;
var a = 5;
var b = 10;
var c = function(a, b, c) {
var x = 10;
document.write(x);
document.write(a);
var f = function(a, b, c) {
b = a;
document.write(b);
b = c;
var x = 5;
}
f(a,b,c);
document.write(b);
}
c(8,9,10);
document.write(b);
document.write(x);
}
```

o/p
10 8 8 9 10 1

2. What is the difference between a method and function?

Function: Function is a block of code which is written to perform some specific set of tasks.

Syntax:

```
function functionName(parameters){
    ……..
}
```

Method : A JS method is a property of an object that contains function definition.

Methods are the functions stored as object properties.

Syntax:

```
object = {
    methodName: function() {
    …….
}
};
Accessed through : object.methodName()
```

Key Difference:

A function can be called directly by its name whereas method can called by name of its object and its method name using dot anotation as shown above.

A function can pass data that is operated and may return the data whereas method operates the data contained in a class.

A function lives on its own whereas method is a function associated with an object property.

3. What does 'this' refer to when used in a Java method?
Ans
[In Java , there is no functions but has only methods] Every method has an implicit variable ‘this’ which refers to the object that contains that method.

4. What does 'this' refer to when used in a JavaScript method?
Ans
refers to containing object, same as java

5. What does 'this' refer to when used in a JavaScript constructor function?
Ans
The keyword this inside the constructor function points to the newly created object.

6. Assume object x is the prototype for object y in Javascript. Object x has a method f( ) containing keyword 'this'.
When f is called by x.f( ), what does 'this' refer to?
Ans
this refers to object X.

7. What is a free variable in JavaScript?
Ans
A variable referred to (captured) by a function that is not one of its parameters or local variable .

```
function makeFunc() {
        const name = "Mozilla"; //local to makeFunc
        function displayName() {
                console.log(name);
                }
        return displayName;
}
```

Here , name is a free variable

8. Create an object that has properties with name = "fred" and major="music" and a property that is a function
that takes 2 numbers and returns the smallest of the two, or the square of the two if they are equal.
Ans

```
let student = {
        ‘name’:’fred’,
        ‘major’:’music’,
        ‘smallest’:function(a,b){
                if(a===b)return a*b;
                if(a<b)return a;
                else return b;
```

```
        }
    }
```

9. Write Javascript code for creating three Employee objects using the "new" keyword and a constructor function.
Employee objects have the following fields: name, salary, position.

Ans

```
class Employee{
constructor(name,salary,position){
        this.name=name;
        this.salary=salary;
        this.position=position;
    }
}

let sujan = new Employee("Sujan",1000000,"Java Developer");
let suman = new Employee("Suman",80000,"React Developer");
let sujita = new Employee("Sujita",90000,"Android Developer");
```

10. Write a Javascript function that takes any number of input arguments and returns the product of the arguments.

Ans

```
function getProduct(){
        var product = 1;
        for(let i = 0; arguments.length;i++ ){
                product = product * arguments[i];
            }
        return product;
    }

var x =  getProduct(1,2,3,4,5) // 120
var y = getProduct(2,2) //4
```

11. Write an arrow function that returns the maximum of its three input arguments.

```
    Var maximum = (a,b,c) => {
                        if(a>b && a>c) return a;
                        else if(b>a && b>c)return b;
                        else return c;
                    }
    var output = maximum(5, 2,10);  // 10
```