Javascript Scope Exercises

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);
}
```

Answer:

10

8

8

9

10

1

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

answer:

In general **method** is a function that belongs to class. In Javascript a method is a function that belongs to an object. **Functions** are not associated with any object

3. What does 'this' refer to when used in a Java method?

answer It refers to the enclosed class

4. What does 'this' refer to when used in a JavaScript method?

answer: It refers to the enclosed function or object of the method.

5. What does 'this' refer to when used in a JavaScript constructor function?

answer: refer It refers to the enclosed function or scope.

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?

Answer = refer to X

7. What is a free variable in JavaScript?

Free variables are simply the variables that are neither locally declared nor passed as parameter in function.

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.

```
var Obj = {
    name:"fred",
     major:"music",
     PMethod: function(a, b){
     if(a===b){
     return a*a;
     }
     else{
     return a<b?a: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.

```
var employee = function(name, age) {
    this.name = name;
    this.age = age;
}

var mahmoud = new employee("mahmoud", 30)
var abanob = Object.create(mahmoud);
abanob.name = "abanob"
abanob.age = "25"

var foly = Object.create(mahmoud)
foly.name = "foly”"
foly.age = "30"

console.log(mahmoud.name + "_" + mahmoud.age);
console.log(abanob.name + "_" + abanob.age);
console.log(foly.name + "_" + foly.age);
```

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

```
function productArg(...more) {
```

```
    let res = 1;
    if (more.length > 0) {
        more.forEach(element => {
            res *= element;
        });
    } else {
        res = 0;
    }
    return res
};
```

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

```
var x = ((a, b, c) => {
    return Math.max(a, b, c)
}) ;
```