

Question 1 : Answer The Following Questions (10 points)

- 1- What is an Event Loop
- 2- How do you add an element at the beginning of an array? How do you add one at the end? Hint[2 ways]

Question2 : What is The Output ? (5 points)

```
var b = 1;
function outer(){
  var b = 2
  function inner(){
    b++;
    var b = 3;
    console.log(b)
  }
  inner();
}
outer();
```

```
for (let i = 0; i < 5; i++) {
  setTimeout(function() { console.log(i); }, i * 1000 );
}
```

```
let arr = ['foo' , 'bar'];  
arr.length = 0;  
arr.push('baz');  
console.log(arr);
```

```
function func(){  
    for(let key in arguments){  
        console.log(arguments[key]);  
    }  
}  
func(1, "Hello", true);
```

```
let car = {  
    carName : "Bmw" ,  
    carPrice : 1000000  
}  
console.log(car instanceof Object);  
console.log(Object.entries(car));
```

Question 3 : (85 points)

- 1- Create Function `sumObjectValues()` that will sum all values of the fields that contain numbers . ensure that iteration is done only over own property of the object (15 points)
- 2- Show the execution of 3 asynchronous block of code, one after the other in sequence (10 points)
- 3- Get the maximum value from a numbers array along with its index (5 points)
- 4- Write a function which accepts two valid dates and returns the difference between them as number of days (10 points)
- 5- Design a Calculator interface for 2 number inputs which can perform sum, difference, product and dividend whenever invoked on the same interface. (15 points)
- 6- Write a function which can return multiple values from a function (10 points)
- 7- Write a function to reverse an array. For Example :
`reverse([1, 2, 3, 4]) → [4, 3, 2, 1]` (10 points)
- 8- Write a function that converts an object into an array, where each element represents a key-value pair in the form of an array.
For Example :
`{ a: 1, b: 2 } → [["a", 1], ["b", 2]]` (10 points)

Bonus ++

- 1- Write a function which can convert the time input given in 12 hours format to 24 hours format [10 points]
- 2- Make this syntax possible: `var a = add(2)(3); //5` [5 points]
- 3- Check if the user with the name "John" exists in the array of objects [5 points]

Good Luck 😊

Best Wishes

Eng: Hesham Mohamed