Module Test Solutions

Round 1

1 . Javascript method to convert all the elements of an array into string and concatenate them with any delimiter to generate a string.
A) Array.concat()   B) Array.join()
C) Array.slice()   D) Array.map()
Correct Answer : Array.join()

2 . What is the output of the below snippet ?
function language() {
**   console.log(script)**
**   var script = "Javascript"**
}
language();

A) error   B) Javascript
C) undefined   D) null
Correct Answer : undefined

3 . What is the output of the below snippet ?
function language() {
**   console.log(script)**
**   let script = "Javascript"**
}
language();

A) error   B) Javascript
C) undefined   D) null
Correct Answer : error

4 . Which keyword is most commonly used to define a function in JavaScript
A) fun   B) var
C) function   D) define
Correct Answer : function

5 . The function that operates on taking one or more functions as arguments, and returning new function.
A) multiple order function   B) higher order function
C) lower order function   D) new order function
Correct Answer : higher order function

6 . What is the output of the below code snippet ?

```
function cars(car) {
   car.brand = 'BMW';
   return car;
}
const car = {
   brand: 'Audi',
   color: 'Red'
}
const newCar = cars(car);
console.log(car);
```

A) { brand: 'BMW', color: 'Red' }   B) { brand: 'Audi', color: 'Red' }
C) { brand: 'BMW' }   D) { brand: 'Audi' }
Correct Answer : { brand: 'BMW', color: 'Red' }

7 . What is the output of the below code snippet?

```
function cars(car) {
   car.brand = 'BMW';
   return car;
}
const car = {
   brand: 'Audi',
   color: 'Red'
}
const newCar = cars({…car});
console.log(car);
```

A) { brand: 'BMW', color: 'Red' }   B) { brand: 'Audi', color: 'Red' }
C) { brand: 'BMW' }   D) { brand: 'Audi' }
Correct Answer : { brand: 'Audi', color: 'Red' }

8 . How to delete the property color in the below object ?

```
const car = {
   brand: 'Audi',
   color: 'Red'
}
```

A) remove color   B) remove car.color
C) delete color   D) delete car.color
Correct Answer : delete car.color

9 . What is the output of the below code snippet?

```
language();
function language() {
   var script = "Javascript"
   console.log(script)
}
```

A) undefined   B) error

C) Javascript   D) null
Correct Answer : Javascript

10 . What is the output of the below code snippet?
language();
const language = () => {
   var script = "Javascript"
   console.log(script)
}

A) undefined   B) error
C) Javascript   D) Null
Correct Answer : error

11 . From the below function declaration which one is not correct way?
A) function add() {}   B) const function = () => {}
C) var function = () => {}   D) let function() {}
Correct Answer : let function() {}

12 . Which Javascript function is used to prevent the object property being updated.
A) Object.freeze(obj)   B) Object.seal(obj)
C) obj.seal()   D) obj.freeze()
Correct Answer : Object.freeze(obj)

13 . Which Javascript function is used to update the property of the object but prevent the object property being deleted.
A) Object.freeze(obj)   B) Object.seal(obj)
C) obj.seal()   D) obj.freeze()
Correct Answer : Object.seal(obj)

14 . Which Javascript function is used to add the element in the first index of the array.
A) array.shift(element)   B) array.unshift(element)
C) array.push(element)   D) array.pop(element)
Correct Answer : array.unshift(element)

15 . Which Javascript function is used to remove the element in the first index of the array.
A) array.shift(element)   B) array.unshift(element)
C) array.push(element)   D) array.pop(element)
Correct Answer : array.shift(element)

16 . Which of the javascript function is used to deep clone the object (object inside object)
Example Object :

```
    Const car = {
    Color: 'Red',
    Brand: {
        Audi: { model : 'A7'}
}
}
```

A) Object.assign({}, car)   B) Object.create(car)
C) JSON.parse(JSON.stringify(car))   D) JSON.parse(car)
Correct Answer : JSON.parse(JSON.stringify(car))

17 . What is the output of below spread operator array?
[…'RELEVEL']

A) ['R', 'E', 'L', 'E', 'V', 'E', 'L']   B) ['RELEVEL']
C) RELEVEL   D) Error
Correct Answer : ['R', 'E', 'L', 'E', 'V', 'E', 'L']

18 . What is the output of the below string expression ?
console.log('RELEVEL'[0])

A) RELEVEL   B) undefined
C) R   D) Error
Correct Answer : R

19 . What happen when we add two array?
console.log(['Relevel'] + ['DSA'])

A) ["Relevel", 'DSA']   B) RelevelDSA
C) Relevel   D) DSA
Correct Answer : RelevelDSA

20 . How do you empty an array ?
Const arr = [1, 2, 3, 4]

A) arr.empty()   B) arr.length = 0
C) arr.remove()   D) arr.removeAll()
Correct Answer : arr.length = 0

21 . Which sorting algorithm is frequently used when n is small where n is total number of elements.
A) Insertion sort   B) Bubble sort
C) quick sort   D) selection sort
Correct Answer : Insertion sort

22 . Which of the following sorting algorithm is of priority queue sorting type?
A) quick sort   B) Bubble sort
C) Insertion sort   D) selection sort
Correct Answer : selection sort

23 . Which sort is putting an element in the appropriate place in a sorted list yields a larger sorted order list.
A) Insertion sort   B) Bubble sort
C) quick sort   D) selection sort
Correct Answer : Insertion sort

24 . Consider a situation where swap operation is very costly. Which of the following sorting algorithms should be preferred so that the number of swap operations are minimized in general?
A) Insertion sort   B) Bubble sort
C) quick sort   D) selection sort
Correct Answer : selection sort

25 . What is the best time complexity of bubble sort?
A) N^2   B) NlogN
C) N   D) N(logN)^2
Correct Answer : N

26 . What is the worst case time complexity of insertion sort where position of the data to be inserted is calculated using binary search?
A) N^2   B) NlogN
C) N   D) N(logN)^2
Correct Answer : N^2

27 . Which sorting algorithm will take the least time when all elements of input array are identical? Consider typical implementations of sorting algorithms.
A) Insertion sort   B) Bubble sort
C) quick sort   D) selection sort
Correct Answer : Insertion sort

28 . Assume that we use Bubble Sort to sort n distinct elements in ascending order. When does the best case of Bubble Sort occur?
A) When elements are sorted in   B) When elements are sorted in
ascending order   descending order
C) When elements are not sorted by any   D) There is no best case for Bubble Sort.
order   It always takes O(n*n) time
Correct Answer : When elements are sorted in ascending order

29 . The auxiliary space of insertion sort is O(1), what does O(1) mean ?

A) The memory (space) required to process the data is not constant

B) It means the amount of extra memory Insertion Sort consumes doesn't depend on the input. The algorithm should use the same amount of memory for all inputs.

C) It takes only 1 kb of memory

D) It is the speed at which the elements are traversed

Correct Answer : It means the amount of extra memory Insertion Sort consumes doesn't depend on the input. The algorithm should use the same amount of memory for all inputs.

30 . Which one of the following in place sorting algorithms needs the minimum number of swaps?

A) Insertion sort

B) Bubble sort

C) quick sort

D) selection sort

Correct Answer : selection sort

31 . Selection sort algorithm design technique is an example of which ?

A) Greedy method

B) Divide-and-conquer

C) Dynamic Programming

D) Backtracking

Correct Answer : Greedy method

32 . You have to sort a list L, consisting of a sorted list followed by a few 'random' elements. Which of the following sorting method would be most suitable for such a task?

A) Insertion sort

B) Bubble sort

C) quick sort

D) selection sort

Correct Answer : Insertion sort

33 . What kind of scope does javascript use ?

A) Literal

B) Lexical

C) Segmental

D) Sequential

Correct Answer : Lexical

34 . What is a higher-order function?

A) Higher-order functions are functions that take other functions as parameters.

B) Higher-order functions are parameterless functions that return themselves

C) Scala does not support higher-order functions

D) Higher-order functions are functions that returns a function as its result.

Correct Answer : Higher-order functions are functions that take other functions as parameters.

35 . Can we use a function as a variable value?

A) YES

B) NO

C)

D)

Correct Answer : YES

36 . What is the correct syntax of writing JSON name/value pair, where the value of string data type?
A) "name" : "value"   B) "name" : value
C) "name" : 'value'   D) name' : 'value'
Correct Answer : "name" : "value"

37 . Which function is used to convert text into a JavaScript object?
A) JSON.parse()   B) string.parse()
C) object.parse()   D) All of the above
Correct Answer : JSON.parse()

38 . From the below function declaration which one is not correct way?
A) function add() {}   B) const function = () => {}
C) var function = () => {}   D) let function() {}
Correct Answer : let function() {}

39 . Which of the following code will throw an error ?
A) JSON.parse('{}')   B) JSON.parse(null)
C) JSON.parse(undefined)   D) JSON.parse('[]')
Correct Answer : JSON.parse(undefined)

40 . Which of the following is not a type in JSON ?
A) Date   B) Object
C) String   D) Array
Correct Answer : Date

Round 2

New Single Digit Conversion

Problem Statement Iswarya is attending interview for an ABC company and in the logical round they ask to write a program to convert the double- or triple-digit number by adding number itself until the number changed to single digit.

Explanation For the below sample input the series is 1 2 3 5 12 15 19 12 => 1 + 2 = 3 15 => 1 + 5 = 6 19 => 1 + 9 = 10 => 1 + 0 = 1 Output is 1 2 3 5 3 6 1

Input Format Input should be series of number

Output Format Missing number from the series

Sample Input 1 : 1 2 3 5 12 15 19

output :

1 2 3 5 3 6 1

Sample Input 2 : 2 3 48 68 75 87

output :

2 3 3 5 3 6

Solution

```javascript
let inp = readline().split(' ');

const ConvertSingle = (arr) => {

            // use process.stdout.write("hello") to print the
output
     //implement your  logic here - you don't have to return
anything, print the output here


    for(let i=0;i<arr.length;i++){
    var temp=add(arr[i])
    arr[i]=temp
}



    return arr;
}

const add = (input) => {

      var a=String(input)
if(a.length===1){
    return input
}
while(a.length!=1){
    var temp=0
    for(let i=0;i<a.length;i++){
        temp+=+a[i]
    }
    input=temp
    a=String(input)
```

```
}
return input
}

let op = ConvertSingle(inp);
console.log(op.join(' '));
```

Problem Statement

Ram got an assignment from his maths teacher that he needs to get the number of 1's from 0 to a given binary number. But it is very hard to find so write a program which helps Ram to find it very quickly.

Constraint Input should be only a binary number

Input Format The input should be only a binary number

Output Format It should return number as output

Sample Input 1 : 100 Explanation: The binary numbers between 0 to 100 are 000 001 010 011 100 In the above series 5 1's are there.

output :

5

Sample Input - 2: 1110 Explanation: The binary number between 0 to 1110 are 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 In the above series 28 1's are there. Output : 28

Solution

```
let n = readline().split(' ');

// Function to Find Number of Ones from in a given binary number
function generatecount(input){

    var str=0
        while(input){
            var r=input%2;
```

```
            input= Math.floor(input/2)
            if(r===1){
                str++
            }


        }
        // str.push(0)
        // str.reverse()
        return str
    }

const findBinaryOne = (binary) => {
    // use process.stdout.write("hello") to print the output
     //implement your  logic here - you don't have to return
anything, print the output here
    // return result;



var a=String(binary).split("")
var ans=0
var result=0
while(a.length){

if(a[0]=='1'){
    ans+=Math.pow(2,a.length-1)
}
a.shift()


}

for(let i=1;i<=ans;i++){
result+=generatecount(i);
}
return(result)


}
const output = findBinaryOne(100);
console.log(output.toString());
```

Combined Solution of Round 3 and Round 4

```
///atm class implementation

class ATM{

    //storing variables
   pin;
   balance;


constructor(obj){

    this.pin=obj.pin;
    this.balance=obj.balance
}
transactionTimer(){

    //using this function to produce delay of 5ms
    //return promise and using setTimeout for delays
    console.log("Your Transaction is Under Process")

    return new Promise((resolve, reject) => {
        setTimeout(()=>{
            resolve()
            },5000)
    })

}

getBalance(pin){

    this.transactionTimer().then(()=>{
        if(pin!==this.pin){
            throw ("Incorrect Pin Entered")
        }
        console.log(`Your balance is ${this.balance} Rupees`)
    }).catch((err)=>{
```

```javascript
            console.log(err)
        })


}




 withdrawCash(pin, withdrawAmount){
  this.transactionTimer().then(()=>{
   if(pin!==this.pin){
    throw("Incorrect Pin Entered")
     }
   if(withdrawAmount>this.balance){
     throw("Insufficient balance !")
      }
    this.balance-=withdrawAmount
    console.log(`Please collect Your cash \nYour balance is
${this.balance} `)
    }).catch((err)=>{
        console.log(err)
     })
 }




 }




try {
    const obj = new ATM({
        pin: 1234,
        balance: 1000
     });
     obj.getBalance(234)

} catch (error) {
    console.log(error)
}
```