FOP Mock Test

Disclaimer: This paper is NOT an actual mock paper set by the school; it is set by AY22/23 SOC Sophomore Students based on their prior knowledge on previous year FOP MST. The purpose of the mock paper is to share with the students certain questions which they should take note of as well as higher order thinking questions. No lecturer was involved in the making of this paper. Certain topics are not covered. Please refrain from using any IDEs (VSCode, atom, notepad++, notepad, dreamweaver).

Please note: Difficulty increases as the question number gets larger

1. Which of the methods are valid ways of declaring an array? (possibly more than 1)

```
var myArray = new Array(3)
var myArray = [undefined]
var myArray = {}
var myArray = new Array()
```

a) 1 and 2
b) Only 1
c) 1, 2 and 4
d) All of them

a

2. What is the output?

```
let i = 1;
while (i < 5) {
    i+=2;
}
console.log(i);
```

a) 3
b) 5
c) 7
d) 1

b

3. What is the output?

```
let a = -5
var x = 12 - a
console.log(x);
```

a) 7
b) 125
c) 17
d) 12

c

4. What is the output?

```
let x = 5;
if (x === '5') {
    console.log("yes")
} else {
    console.log("no")
}
```

a) yes
b) no
c) error
d) no output

b

5. What is the output?

```
let x = "1";
if (x == 1) {
    console.log("cookie")
} else {
    console.log("cream")
}
```

a) cookie
b) cream
c) error
d) no output

b

6. Which of the following are valid variable declarators?
   1. const
   2. def
   3. let
   4. var

d

a) all valid
b) only 3 and 4
c) 2, 3 and 4
d) 1, 3 and 4

7. What is the output?

```
var i = 1;
for (let i = 0; i < 10; i++) {
    i++;
}
console.log(i);
```

a) Error – variable already defined
b) 9
c) 10
d) 1

c

8. What is the output?

```
var x = 1;
var y = 2;
x = ++y;
console.log(x, y);
```

a) 1 2
b) 2 3
c) 3 3
d) 1 3

c

9. What is the output?

```
console.log("L\ollipop");
```

a) Lllipop
b) Lollipop
c) L\ollipop
d) Lóllipop

b

10. What is the output?

```
console.log("yes" || "no")
```

a) false
b) true
c) 1
d) yes

d

11. What is the output?

```
console.log(true || true && false)
```

a) true
b) false
c) 0
d) 1

a

12. What is the value of a?

```
let a = 12 + '5';
```

a) 17
b) Error – not same data type
c) 125

c

d) NaN

13. What is the output?

```
let myArr = [1,2,3,4,5];
a = myArr.length;
console.log(myArr[a])
```

a) undefined
b) null
c) Error – index not inside array
d) 5

a

14. What is the output?

```
const a = 5;
console.log(++a);
```

a) 5
b) 6
c) Error – Assignment to constant variable
d) Error – Unable to print variable ++

b

15. What is the output?

```
let x = 1;
if (x++ + '1' === '11') {
    console.log(x);
} else {
    console.log("no")
}
```

a) 1
b) 2
c) 11
d) no

b

16. What is the output?

```
const x = 1;
if (x === 1) {
    const y = 1;
} else {
    const y = 0;
}
console.log(y);
```

a) 1
b) 0
c) Undefined

a

d) Error – y is not defined

17. What does the code do?

```
157
158  for (let i = 0; i < 13;i ++) {
159      if (i % 2 != 0 || i.toString().includes("2")) {
160          console.log(i)
161      }
162  }
```

a) Print numbers 0 to 13
b) Print all the numbers 0 to 12 that are odd or if the number has a 2 in it b
c) If the number is odd, convert the number to a string and add 2 to it, then print.
d) Print all the numbers between 0 to 12 that are even or if the number has a 2 in it

18. What is the output?

```
173  let list = [];
174  list[0] = 0;
175  for (let i = 0; i < 5; i++) {
176      if (i % 2 == 0) {
177          list.push(i);
178      }
179  }
180  console.log(list);
```

a) [0, 1, 2, 3, 4]
b) [0, 0, 1, 2, 3, 4] d
c) [0, 0, 2, 4]
d) [0, 2, 4]

19. What is the output?

```
189  var x;
190  var x;
191  console.log(x);
```

a) Error – variable ‘x’ is already declared b
b) undefined
c) null

20. What is the output?

```
196  if (true == 1) {
197      console.log("Burgers are amazing!")
198  } else {
199      console.log("Burgers are terrible")
200  }
```

a) Burgers are amazing!
b) Burgers are terrible
c) Error – true is not a variable
d) Error – mismatched datatype in if condition (line 196)

a

21. What is the output?

```
206  console.log(true * 3 + 5)
```

a) truetruetrue5
b) 8
c) 5
d) 3

a

22. What is the output?

```
213  let i = 'a'
214  for (let j = 0; i.length < 5; j++) {
215      i += j;
216  }
217  console.log(i);
```

a) a
b) a1234
c) a01234
d) a0123

23. What is the output?

```
223   let ans = "";
224   switch (5) {
225       case 1:
226           ans += 'a';
227       case 3:
228           ans += 'b';
229       case 5:
230           ans += 'c';
231       default:
232           ans += 'd'
233   }
234   console.log(ans)
```

a) Error – not an expression in switch statement(line 224)
b) abcd
c) c
d) cd

24. Which statements are true? (more than 1)

```
240   var input = require('readline-sync');
241   var count = input.questionInt("Enter your number");
242   do {
243       // point A
244       console.log("Hooray!");
245       count++;
246       // point B
247   } while (count < 100)
248   // Point C;
```

1. (count < 100) is always true at point A.
2. (count < 100) is always true at point B.
3. (count < 100) is always false at point C
4. If the user's input is 10, count's value is 100 at point C.

a) Only 1
b) 2 and 3
c) Only 3
d) 3 and 4

25. What is the output?

```
for (let i = 0; i < 10; i++) {
    "Inside the for loop!"
}
console.log(i)
```

a) Error – unknown expression “Inside the for loop!”
b) 10
c) Error – i is not defined
d) Undefined

26. What is the output?

```
let arr = [0,1,0,1];
arr.length = 1;
console.log(arr[arr.length - 1])
```

a) Error - cannot modify const variable arr.length
b) 1
c) 0
d) Undefined

27. What is the output?

```
const arr = [
    [1,2,3],
    [4,5,6],
    [7,8,9]
]
console.log(arr[1][2]);
```

a) 1
b) 5
c) 9
d) 6

28. What is the output?

```
var lol = [1, 0, 1];
console.log(lol[lol[lol[2] - 1]]);
```

a) 0
b) 1
c) Undefined
d) Null

29. What is the output?

```
296   let x = [1, 2, 3, 4];
297   let y = x;
298   y[0] = 5;
299   console.log(x == y)
```

a) true
b) false
c) Error – cannot assign fixed array to variable y

30. What is the output?

```
304   let money = 20.20;
305   let sheep = 5;
306   if (typeof money === typeof sheep) {
307       console.log("same")
308   } else {
309       console.log("not same")
310   }
```

a) same
b) not same
c) no output
d) Error - cannot assign value 20.20 to integer variable

31. What is the output?

```
316   let myString = "1,2,3"
317   let myArr = [1,2,3];
318   console.log(myArr + myString);
```

a) [1,2,3,”1,2,3”]
b) 1,2,31,2,3
c) 1,2,3”1,2,3”
d) [1,2,3,1,2,3]

32. What is the output?

```
328   for (var j = 0; j++ < 5; j++) {
329   }
330   console.log(j);
331
```

a) 7
b) 6
c) Error – invalid for-loop at line 328
d) Error – j is not defined

33. What is the output?

```
let maximum = 0;
for (let x = 0, y = 1; x + y < 5; x++, y+=2) {
    maximum = Math.max(maximum, x * y);
}
console.log(maximum)
```

a) 3
b) 10
c) 7
d) 5

34. What is the output?

```
let array = [1,2,3,4,5,6,7,8,9];
let sum = 0;
for (var i = 1; i < array.length; i++) {
    sum += array[i];
    i += i + 2;
}
console.log(sum);
```

a) 15
b) 7
c) 8
d) 14

35. What is the output?

```
var out = "";
for (var x = 0; x <= 3; x++) {
    switch(x) {
        case 1:
            out += 1;
        case 2:
            out += 2;
            break;
        case 3:
            out += 3;
        default:
            out += 4;
            break;
    }
}
console.log(out)
```

a) 412234
b) 4123
c) 16
d) Error

PART 2

Mastermind
-but it's played with numbers

The game starts by generating a SECRET NUMBER with 4 Random numbers ranging from 1-6 and stored in an Array.

The player will have to guess the digits correctly in the same order in order to win the game .

Q1a) generate a secret combination with 4 INTEGERS ranging from 1-6 inclusive

```
1  secret_num = []
2  1a)
3
4
5  console.log(secret_num)
```

Q1b) This game requires the user to enter numbers they want to guess individually , so there needs to be a validation system .
The game only accepts Numbers ranging from 1-6 inclusive AND userinput can only contain INTEGERS . Fill in part i,ii and iii .

```
var input = require('readline-sync')

userinput = []
for(var i = 1;i <= 4;i++){
  do{
    var current_num= 1B)i)              ("enter number "+i+" : ")
    if(  1B)ii)                        ){
      console.log("you have entered the number wrongly")
    }
  }while( 1B)iii)                        )
  userinput.push(current_num)

}
console.log(userinput)
```

Q1c) Congratulations, you are at the last part . Now that u have 2 Arrays , secret_num and userinput . Next, write a code that counts how many numbers did the user successfully guess.

E.g . secret_num = [1,2,3,4] and userinput = [1,2,4,6]
“Number of correct is 2” will be displayed

```
no_correct = 0

1c)

console.log("number of correct is "+no_correct)
```

Q2.

Ivan is rich and likes to eat food. One day , he is feeling very hungry and walks into a shop that sells only cookies and cake in bundles. Ivan can only eat 60 cookies and cakes in a meal(cannot exceed and need to have one of both) .
Display what is the maximum he can eat for a meal without exceeding his food limit.If it is not possible to buy both items without exceeding display “error” in the console.
Cookie and Cake is an array that contains integers.
Fill in the missing code.

EG 1:
Cookie = [2,9,5,1,8]
Cake = [8,31,40]
Expected_answer : 49
Explanation: 9 cookie and 40 cake

EG 2:
Cookie = [9,2,7,5,1,6]
Cake = [8,50,30]
Expected_answer : 59
Explanation: 9 cookie and 50 cake

EG 3:
Cookie = [60,52,57]
Cake = [9,11,20]
Expected_answer : error
Explanation : there’s no combination of cookie and cake that doesn't exceed 60

```
//max is to store the maximum cookies and cake that can be bought
max = 0
for(var i = 0 ; i< cookie.length;i++){
  for(var f = 0 ; f< cake.length;f++){
    if ( 2)i)                        &&   2)ii)                >max){
      max = cookie[i]+cake[f]
    }
  }
}

if( 2)iii)       ){
  console.log("error")
}else{
  console.log(max)
}
```