

Week 0 Assignment 1

Your last recorded submission was on 2025-05-05, 14:43 IST

1) What is the time complexity of accessing an element in an array by index?

1 point

- a. $O(1)$
- b. $O(n)$
- c. $O(\log n)$
- d. $O(n \log n)$

- ☒ a.
- ☐ b.
- ☐ c.
- ☐ d.

Yes, the answer is correct.

Score: 1

Accepted Answers:

a.



2) What is the following set of statements equivalent to?

1 point

```
if (x==0)
{
    x=1;
}
else if (x==1)
{
    x=0;
}
```

a. $x = 1 + x;$

b. $x = x - 1;$

c. $x = 1 - x;$

d. $x = 1 \% x;$

☐ a.

☐ b.

☒ c.

☐ d.

Yes, the answer is correct.

Score: 1

Accepted Answers:

c.



3) Given vectors $u = (3, 2)$ and $v = (-1, 4)$, what is the dot product $u \cdot v$?

1 point

a. 10

b. 5

c. 11

d. 7

☐ a.

☒ b.

☐ c.

☐ d.

Yes, the answer is correct.

Score: 1

Accepted Answers:

b.

4) What is the modulus of the complex number $z = 4 + 3i$?

1 point

a. 5

b. 7

c. 4

d. 3

☒ a.

☐ b.

☐ c.

☐ d.

Yes, the answer is correct.

Score: 1

Accepted Answers:

a.



5) Given 3 numbers x, y and z. In order to find the maximum using if-then-else:

1 point

```
if x > y then
    _____ #MISSING
    max = x
else
    max = z
else
    if y > z then
        max = y
    else
        max = z
```

What should be placed in _____?

a. **if y > z then**

b. **if y < z then**

c. **if x > z then**

d. **if x < z then**

- ☐ a.
- ☐ b.
- ☒ c.
- ☐ d.

Yes, the answer is correct.

Score: 1

Accepted Answers:

c.



- 6) Consider the following pseudo-code for calculating the sum of all even numbers in a range:

```
sum = 0
for i = 1 to n do
    if _____ #MISSING
        sum = sum + i
```

What condition should be placed in _____?

- a. $i \% 2 == 0$
- b. $i \% 2 != 0$
- c. $i \% 2 == 1$
- d. $i \% 2 == -1$

☒ a.

☐ b.

☐ c.

☐ d.

Yes, the answer is correct.

Score: 1

Accepted Answers:

a.



7) If the sequence of numbers

1 point

1, 8, 27, 64, 125, ...

continues in the same pattern, what will be the 6th term in the sequence?

a. 216

b. 343

c. 512

d. 729

☒ a.

☐ b.

☐ c.

☐ d.

Yes, the answer is correct.

Score: 1

Accepted Answers:

a.



8) A function `foo(int)` is defined as follows:

1 point

```
int foo(int i) {  
    int x=1, j = 1;  
  
    while (i) {  
        x *= j;  
        j++;  
        if(j<3) continue;  
        else break;  
    }  
    return x;  
}
```

What will be the output of the program if we call `foo(1)`?

Select your option from the following.

- a. The program will result in a compilation error.
- b. 2
- c. 3
- d. The program will result in a runtime error due to infinite loop.

- ☐ a.
- ☒ b.
- ☐ c.
- ☐ d.

Yes, the answer is correct.

Score: 1

Accepted Answers:

b.



1 point

9) A number is called a "special number" if the sum of the factorial of its digits is equal to the number itself.

Which of the following is a "special number"?

a. 145

b. 123

c. 170

d. 153

☒ a.

☐ b.

☐ c.

☐ d.

Yes, the answer is correct.

Score: 1

Accepted Answers:

a.



10) What will be the output of the following pseudo-code if $n = 5$?

1 point

```
result = 1
for i = 1 to n do
    result = result * (i-1)
print(result)
```

a. 115

b. 120

c. 0

d. 1

☐ a.

☐ b.

☒ c.

☐ d.

Yes, the answer is correct.

Score: 1

Accepted Answers:

c.

