LAB 06

SUBMISSION INSTRUCTIONS

Type/write your answers on the document and submit it as a pdf file with the name JaneDoe.pdf (replace JaneDoe with your first and last name respectively).

QUESTIONS

- 1. (10pts): What is the Big O notation of the expressions below:
 - a. O(n + n + 9999)

Ans: O(n)

b. $O((n^3 + 3) * (n + 5))$

Ans: O(n⁴)

c. $O(12n + 6n^3 + 1000)$

Ans: $O(n^3)$

d. $2n^3 + O(n^2)$

Ans: O(n³)

e. $log_2n + 2 + log_5n$

Ans: O(log n)

2. (20pts): What is the time complexity of the functions below?

	Code	Time complexity
a)	def test(n):	
ŕ	for i in range(n):	$O(n^2)$
	for j in range(n):	O(II)
	print(i, j)	
b)	def test(n):	
	for i in range(n):	
	print(i)	O(n)
	for j in range(n):	
	print(j)	
c)	<pre>def test(x, y):</pre>	
	for i in range(x):	
	print(i)	$O(x_1, x_2)$
		O(x+y)
	for j in range(y):	
	print(j)	
d)	<pre>def test(n):</pre>	
,	i = n while i > 0:	
	i = i - 2	O(n)
	print(i)	
e)	def test(n, m):	
()	for i in range(m):	
	for j in range(m):	24.3
	k = n while k > 0:	$O(m^2*n)$
	white k > 0: k = k - 2	
	print(i, j, k)	
f)	def test(n):	
1)	ans = n + 1	O(1)
	return ans	

```
def test(n):
g)
         for i in range(n):
         print(i)
                                                                          O(n^3)
         for i in range(n):
            for j in range(n):
               for k in range(n):
                   print(i, j, k)
     def test(n):
h)
         for i in range(0, 100, n):
                                                                          O(1)
           print(i)
     def test(n):
i)
         for i in range(0, n):
            k = 1
                                                                       O(n log n)
             while k < n:
                k = k * 2
                print(i, k)
     def test(n):
j)
          for i in range(\theta, n):
              k = 1
              while k < n:
                  k = k * 2
                                                                          O(n^3)
                  print(i, k)
          for i in range(0, n):
              for j in range(0, n):
                  for k in range(0, n):
                  print(i, j, k)
```