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: $O(n^4)$
   c. $O(12n + 6n^3 + 1000)$
      Ans: $O(n^3)$
   d. $2n^3 + O(n^2)$
      Ans: $O(n^3)$
   e. $\log_2 n + 2 + \log_5 n$
      Ans: $O(\log n)$

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

	Code	Time complexity

a)	`def test(n):`
	`  for i in range(n):`
	`  for j in range(n):`
	`  print(i, j)`
		$O(n^2)$

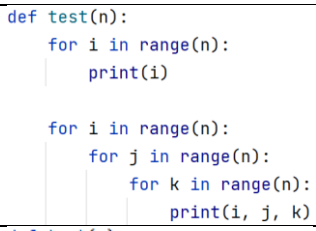
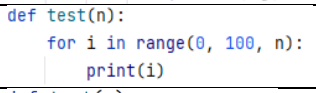
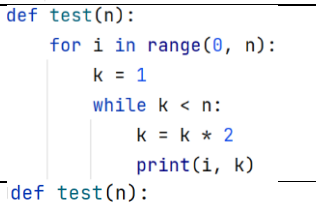
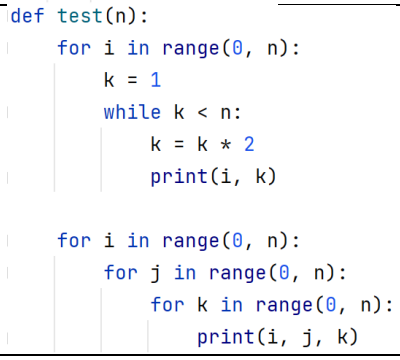
b)	`def test(n):`
	`  for i in range(n):`
	`  print(i)`
	
	`  for j in range(n):`
	`  print(j)`
		$O(n)$

c)	`def test(x, y):`
	`  for i in range(x):`
	`  print(i)`
	
	`  for j in range(y):`
	`  print(j)`
		$O(x+y)$

d)	`def test(n):`
	`  i = n`
	`  while i > 0:`
	`  i = i - 2`
	`  print(i)`
		$O(n)$

e)	`def test(n, m):`
	`  for i in range(m):`
	`  for j in range(m):`
	`  k = n`
	`  while k > 0:`
	`  k = k - 2`
	`  print(i, j, k)`
		$O(m^2*n)$

f)	`def test(n):`
	`  ans = n + 1`
	`  return ans`
		$O(1)$

g)		$O(n^3)$
h)		O(1)
i)		O(n log n)
j)		$O(n^3)$