CSD102 Data Structures

Quiz 1

Date: 31-1-2023 **Time: 2:15PM to 3:15PM** **Total Marks: 20 (To be scaled down to 5%)**

All questions are compulsory

1. Find the asymptotic complexity of the following (find tightest bounds if possible): [10 Marks]

Question	Complete step-by-step solution	Answer

for(i=0; i<n; i++)
for (j=0; j<i; j++)
stmt;		

$f(n) = 3n^2 + 2$		
T[n]=T[n-1]+1		
f(n) = 10000		
f(n) = n!		

2. Show step-by-step process for polynomial multiplication of the following two polynomials using linked lists. Only complete and correct answers will be given any marks. [5 Marks]
   P1 = $3n^3 + 2n^2 + 4n + 1$
   P2 = $2n + 4n^2 + 6n^3 + n^4$

3. Sort the following numbers using linked lists and show all steps: [5 Marks]
   3, 19, 10, 1, 12, 20, 15, 9, 11, 18
   use the bubble sort algorithm.