PACE UNIVERSITY SEIDENBERG SCHOOL OF CSIS

CS608-SPRING2023: ALGORITHMS & COMPUTING THEORY

Assignment#1 - TOTAL POINTS: 100

DUE DATE: 02/19/2023 (FEB 19th)

S.No.	Questions	Points	Self-Assessment
1	Find the Time Complexity of the recurrence relation **T(n) = T(n-1) + n**. Hint: Refer Week2, Slide40.	25	
2	Draw a recursive tree for the computation of power(2,5) and give O(n). Hint: Refer Week2, Slides38,26.	25	
3	Write a recursive algorithm for finding the maximum element in a sequence, S, of n elements. Give Pseudocode. What is the running time and space usage of this Algorithm? Hint: Refer Week2, Slide21.	25	
4	Arrange the below sequences according to the order of complexity: A. n^3, 10logn, $57\sqrt{n}$, 495loglogn, 2^n. B. 6897nlogn, $5n^5$, $2n^n$, 85logn, 10000n. C. $2n\sqrt{n}$, 36485, $73\lfloor n/2 \rfloor$, 2^{18}, $5n^2$. Hint: Refer Week1, slide26	25	

Submission:

- Submit a word document with a detailed explanation of the problem and draw diagrams wherever necessary. You can also write and draw on paper and scan to submit (you can upload hand-drawn clear scanned pages).
- You may not be graded full points if your submissions are not clear or unreadable.
- Late submission of up to one week will incur a 10% loss of total points earned. 5% every week thereafter.
- Attach this file with self-assessment. This is for your reference if you answered all the questions completely.