Problem Set 5

Due dates: Electronic submission of .tex and .pdf files of this homework is due on **10/5/2017 before 11:00am** on csnet.cs.tamu.edu, a signed paper copy of the pdf file is due on **10/5/2017** at the beginning of class.

Name: **(put your name here)**

Resources. (All people, books, articles, web pages, etc. that have been consulted when producing your answers to this homework)

On my honor, as an Aggie, I have neither given nor received any unauthorized aid on any portion of the academic work included in this assignment. Furthermore, I have disclosed all resources (people, books, web sites, etc.) that have been used to prepare this homework.

Signature: _____

Problem 1 Solve the following six subproblems.

P 1 (15 points). Solve Exercise 15.2-1 on page 378, but using the degree sequence

$$\langle 3, 5, 3, 10, 5 \rangle.$$

Solution.

P 2 (15 points). Solve Exercise 15.2-5 on page 378. Use algorithm from the textbook as a reference. Make sure that you write it down in your own words.

Solution.

P 3 (15 points). Solve Exercise 15.4-1 on page 396, but use the following two sequences:

$$\langle a, b, b, a, a, b, a \rangle \quad \text{and} \quad \langle a, a, b, a, a, b, b \rangle.$$

Show your work!

Solution.

P 4 (15 points). Solve Exercise 15.4-2 on page 396. Explain your pseudocode so that it will be easy to understand.

Solution.

P 5 (20 points). Solve Exercise 15.4-5 on page 397. Make sure that you explain it in your own words.

Solution.

P 6 (20 points). Solve Problem 15-2 on page 405. [Hint: Given a sequence $s = \langle s_1, s_2, \ldots, s_n \rangle$, a subsequence is obtained by deleting elements from s, that is, a subsequence of s is of the form $\langle s_{i_1}, s_{i_2}, \ldots, s_{i_m} \rangle$, where the indices satisfy $1 \leq i_1 < i_2 < \cdots < i_m \leq n$. Suppose the sequence is represented by an array s. Consider the sub-arrays $s[i..j]$. Notice that $s[i, j]$ contains a palindrome of length ≥ 2 when $s[i] = s[j]$. Let $l[i, j]$ denote the length of a maximum length palindrom in $s[i, j]$. Relate $l[i, j]$ to subproblems.]

Solution.

Discussions on ecampus are always encouraged, especially to clarify concepts that were introduced in the lecture. However, discussions of homework problems on ecampus should not contain spoilers. It is okay to ask for clarifications concerning homework questions if needed.

Checklist:
☐ Did you add your name?
☐ Did you disclose all resources that you have used?
   (This includes all people, books, websites, etc. that you have consulted)
☐ Did you sign that you followed the Aggie honor code?
☐ Did you solve all problems?
☐ Did you submit (a) your latex source file and (b) the resulting pdf file of your homework?
☐ Did you submit (c) a hardcopy of the pdf file in class?