

**3)** (10 pts) DSN (Tries)

The word “intention” is such that four of its prefixes, “i”, “in”, “intent” and “intention” are words themselves. Write a function that takes in a pointer to the root of a trie storing a dictionary of words and returns the maximum number of words that are prefixes of a single word. Use the struct definition and function prototype given below.

```
typedef struct TrieNode {  
    struct TrieNode *children[26];  
    int flag; // 1 if the string is in the trie, 0 otherwise  
} TrieNode;
```

```
int maxNumPrefixWords(TrieNode* root) {
```

```
}
```

# Computer Science Foundation Exam

August 25, 2018

## Section II A

### ALGORITHMS AND ANALYSIS TOOLS

**NO books, notes, or calculators may be used,  
and you must work entirely on your own.**

**Name:** \_\_\_\_\_

**UCFID:** \_\_\_\_\_

**NID:** \_\_\_\_\_

Question #	Max Pts	Category	Score
1	10	ANL	
2	5	ANL	
3	10	ANL	
TOTAL	25		

**You must do all 3 problems in this section of the exam.**

**Problems will be graded based on the completeness of the solution steps and not graded based on the answer alone. Credit cannot be given unless all work is shown and is readable. Be complete, yet concise, and above all be neat. For each coding question, assume that all of the necessary includes (stdlib.h, stdio.h, math.h, string.h) for that particular question have been made.**