065432106543…

	0	5
	2	7
	4	6
	7	2

$n \geq 2$

S Q

Q T

$n, S,$ and T.

3

a) ... $f \in O(g)$ ...

b) ... $f \in O(n)$, ...

$$f(n) = \begin{cases} n^2 - n, & n \le 3 \\ 5n + 7, & n > 3 \text{ and } n \text{ d} \\ 4n, & n > 3 \text{ and } n \text{ e} \end{cases}.$$

a) ...

b) ...

c) ...

d) ...

```c
int CountKey(treeptr *p, int keyval);
```

... as a leaf node ...

Theory Exam

Answer **ANY TWO** of the following three questions:

1. Provide a context-free grammar that generates the following language over $\Sigma = \{0,1\}$:

$$\{ \ = 0^*1^* : |\ | \text{ is odd}\}$$

2. A clique in an undirected graph is a subgraph wherein every two nodes are connected by an edge. Consider the language:

$$3CLIQUE \ne \{ \quad P \quad r \quad o \quad Y \qquad T \quad W \quad Q \quad U \quad E \quad \}$$