

ID: _____

ICS 313-02(002)

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Name: _____

Quiz # 2
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Question 1:

(8 points)

Complete the following statements.

1. _____ is the form or structure of the expressions, statements, and program units.
2. _____ is the meaning of the expressions, statements, and program units.
3. A _____ is a string of characters over some alphabet.
4. A _____ is a set of sentences.
5. A _____ is the lowest level syntactic unit of a language.
6. A _____ is a language used to describe another language.
7. A _____ is a finite non-empty set of rules.
8. A _____ is a repeated application of rules, starting with the start symbol and ending with a sentence.

Question 2:

(4 points)

Using the following grammar , show a parse tree and a left most derivation for the following statement.

$M := B * (A * (N + J))$

$\langle \text{assign} \rangle \rightarrow \langle \text{id} \rangle := \langle \text{expr} \rangle$
 $\langle \text{id} \rangle \rightarrow A | B | C | M | J | N$
 $\langle \text{expr} \rangle \rightarrow \langle \text{expr} \rangle + \langle \text{term} \rangle | \langle \text{term} \rangle$
 $\langle \text{term} \rangle \rightarrow \langle \text{term} \rangle * \langle \text{factor} \rangle | \langle \text{factor} \rangle$
 $\langle \text{factor} \rangle \rightarrow (\langle \text{expr} \rangle) | \langle \text{id} \rangle$