Parul University

Faculty of Engineering & Technology

Parul Institute of Technology

Assignment No. _2__

Assignment:2

UNIT 2 AND 3

1. Explain the parsing techniques with a hierarchical diagram.

2. What are the problems associated with Top Down Parsing?

3. Write the production rules to eliminate the left recursion and left factoring problems.

4. Consider the following Grammar:
A-> ABd|Aa|a
B-> Be|b
Remove left recursion.

5. Do left factoring in the following grammar:

A-> aAB|aA|a
B-> bB|b

6. Write a short note on:
a. Ambiguity (with example)

b. Recursive Descent Parser

c. Predictive LL(1) parser (working)

d. Handle pruning

7. Write Rules to construct FIRST Function and FOLLOW Function.

8.Consider Grammar:
E-> E+T|T
T-> T*F|F
F-> (E)|id to construct FIRST Function and FOLLOW Function.

9. Write the algorithm to create Predictive parsing table with the scanning of input string.

10. Show the following Grammar:
S-> AaAb|BbBa
A-> €
B-> €
Is LL(1) and parse the input string “ba”.

11. Consider the grammar:

Perform Shift Reduce Parsing for the input string using the grammar.

S->(L)|a

L->L, S|S

Input string : (a, a)

12. Write the properties of LR parser with its structure. Also explain the techniques of LR parser.

13. Write a short note on:

a. Augmented grammar

b. Kernel items

c. Rules of closure operation and goto operation

d. Rules to construct the LR(0) items

14. Consider the following grammar:

S-> Aa|bAc|Bc|bBa

A-> d

B-> d

Compute closure and goto.

15. Write the rules to construct the SLR parsing table.

16 Construct an LR parsing table for the given context-free grammar –

S–>AA

A–>aA|b

17. Write the rules to construct the LR(1) items.

18. What is LALR parser? Construct the set of LR(1) items for this grammar:

S-> CC

C-> aC

C->d

19. Show the following grammar

S->Aa|bAc|Bc|bBa

A->d

B->d

Is LR(1) but not LALR(1).

20. Write the comparison among SLR Parser, LALR parser and Canonical LR Parser.

21.Calculate FIRST and FOLLOW for the following grammar?

S-> aBDh

B-> cC

C->BC| ε

D->EF

E-> g| ε

F-> f | ε