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V18COOS1

System Softwares
Tutorial 12

Ans 1. An error occurs in predictive parsing when :-
- the terminal on the top of the stack does not match the current input symbol.
- A non terminal A is on top of stack as a current input symbol and the entry M(A,a) is empty.

Error recovery can be done in two ways:-
- Panic Mode Recovery:-
This involves careful synchronization of token for each non terminal.

- Phase level Recovery:-
This involves defining blanks entries in the table with pointers to some error routines which may:-
→ change, delete or insert symbols in the input.
→ May also pop symbols from the stack.

Ans 2. $E \to E \cdot -E$
$E \to E \times E$
$E \to id$

String given is ~~id~~ ~~x~~ id-id x id

Stack	Input Buffer	Parsing Action
$	id-id x id$	Shift
$id	-id x id$	Reduce $E \to id$
$E	-id x id$	Shift
$E -	id x id$	Shift
$E - id	x id$	Reduce $E \to id$

Stack Parsing Table 1

Stack	Input Buffer	Parsing Action
$E-E	Xid$	Shift
$E-EX	id$	Shift
$E-EXid	$	Reduce E→id
$E-EXE	$	Reduce E→EXE
$E-E	$	Reduce E→E-E
$E	$	Accepted.

Ans 3. S → (L) | a

L → L,S | S

Input String is   (a, (a,a))

Stack	Input Buffer	Parsing Action
$	(a,(a,a))$	Shift
$(	a,(a,a))$	Shift
$(a	,(a,a))$	Reduce S→a
$(S	,(a,a))$	~~Shift~~ Reduce L→S
$(L	,(a,a))$	Shift
$(L,	((a,a))$	Shift
$(L,(	a,a))$	Shift
$(L,(a	,a))$	Reduce S→a
$(L,(S	,a))$	Reduce L→S
$(L,(L	,a))$	Shift
$(L,(L,	a))$	Shift
$(L,(L,	))$	Reduce S→a
$(L,(L,a	))$	Reduce L→L,S
$(L,(L,S	))$	Shift
$(L,(L	)$	Reduce S→(L)
$(L,(L)	)$	Reduce S→(L) L→S
$(L,S	)$	Shift
$(L	)$	Reduce S→(L)
$(L)	$	Accepted.
$S	$	