M. I. Hedisur Alom

Answer to the question no - 01(LP)

Sol^n:

Given that,

$S \rightarrow (L) / a$

$L \rightarrow L;S / S$

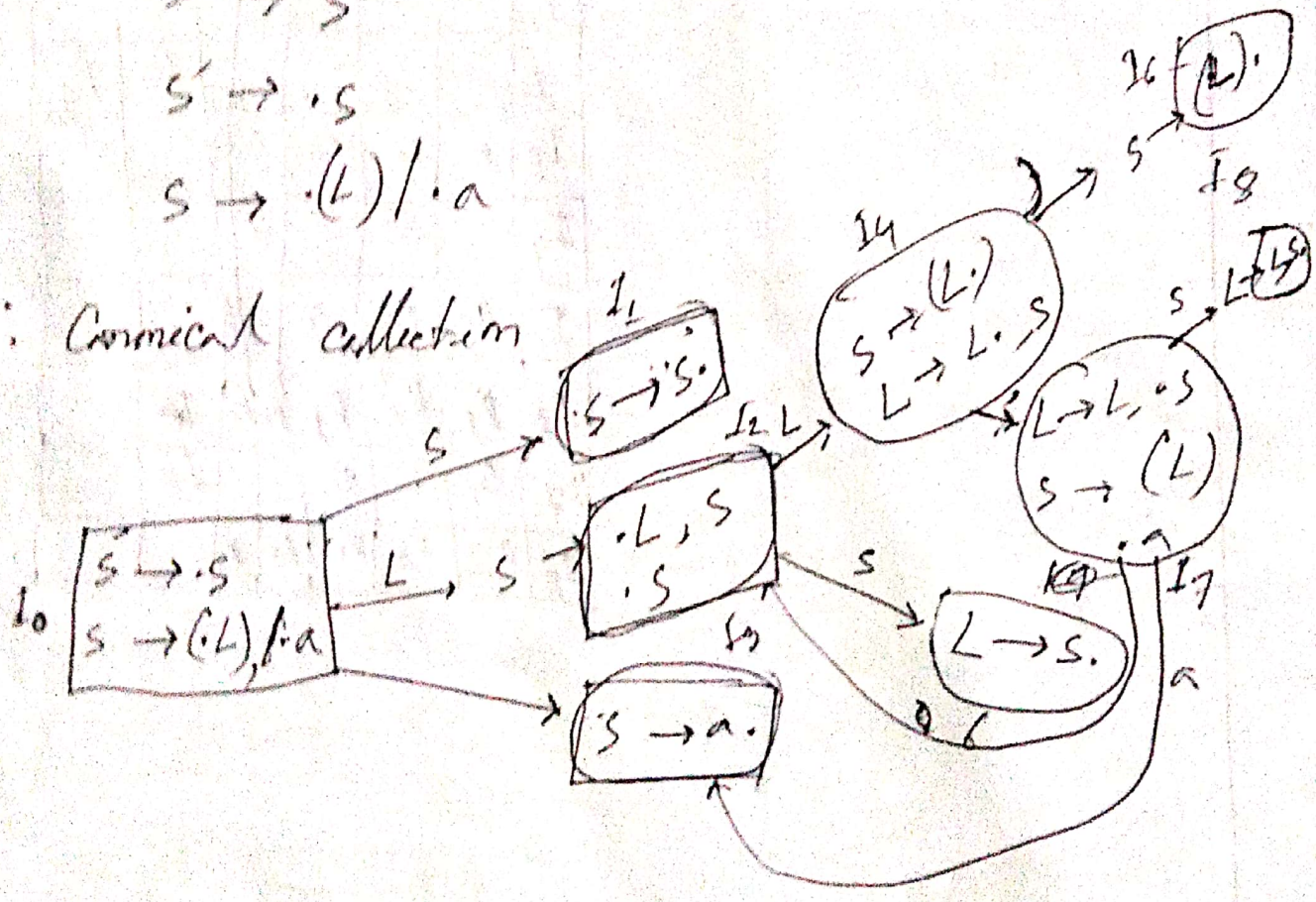
Let

$S' \rightarrow S$

$S' \rightarrow .S$

$S \rightarrow .(L) / .a$

∴ Canonical collection



∴ LR(0) parsing table

Rules:

$S \rightarrow (L)$ — ①

$S \rightarrow a$ — ②

$L \rightarrow L, S$ — ③

$L \rightarrow S$ — ④

	Action					Goto	
	(	)	a	,	$	S	L
I_0	S_2		S_3		Accept		
I_1							
I_2						I_5	I_4
I_3	R_2	R_2	R_2	R_2	R_2		
I_4		S_6		S_7			
I_5	R_4	R_4	R_4	R_4	R_4		
I_6	R_1	R_1	R_1	R_1	R_1		
I_7	S_2		S_3			I_8	
I_8	R_3	R_3	R_3	R_3	R_3		

Answer to the question no – 02 (LR0)

Solⁿ:

Given that,

$$E \to E + T / T$$

let $E' \to E$

$$T \to i$$

∴ Augmented Grammar

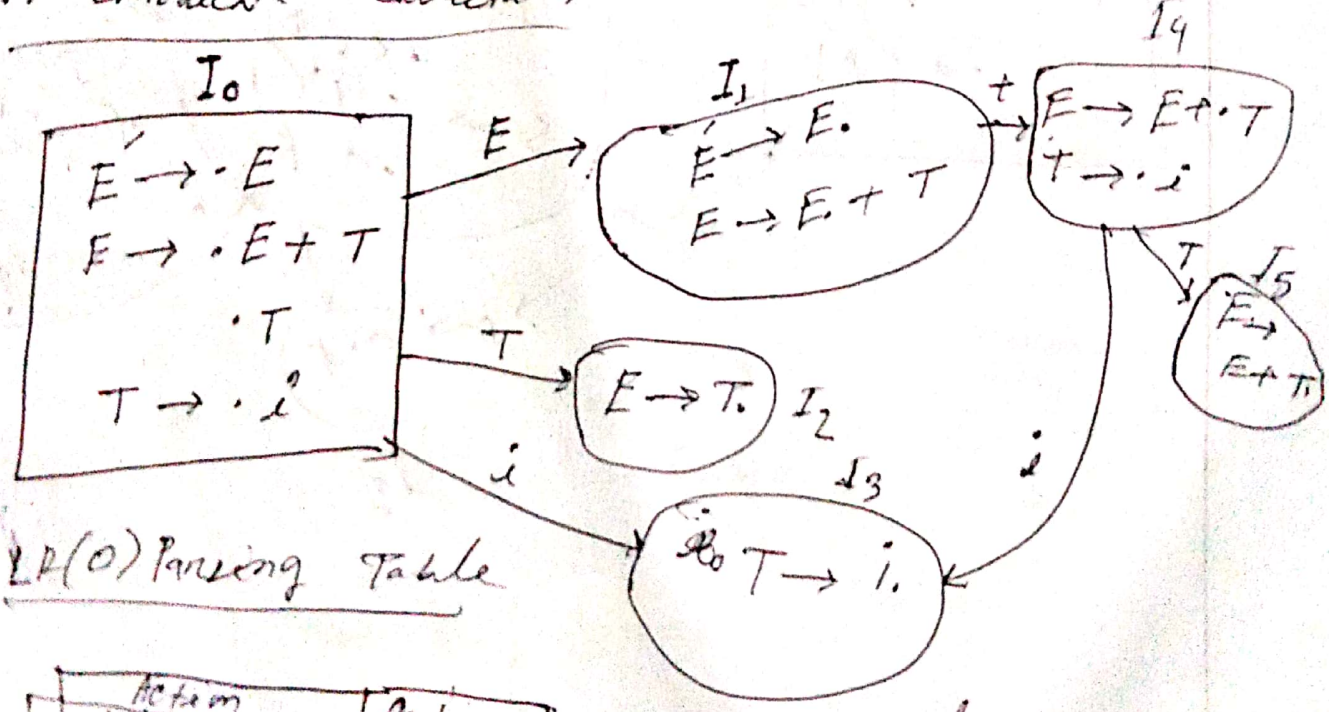
$E' \to .E$

$E \to .E + T$

$.T$

$T \to .i$

∴ Canonical collection



LR(0) Parsing Table

	Action			Goto	
	+	i	$	E	T
I0		S_0	Accept	I_1	I_2
I_1	S_4				
I_2	R_2	R_2	R_2		
I_4					I_5
I_5	R_1	R_1	R_1		

Rules

$E \to E + T$ — ①

$E \to T$ — ②

$T \to i$ — ③

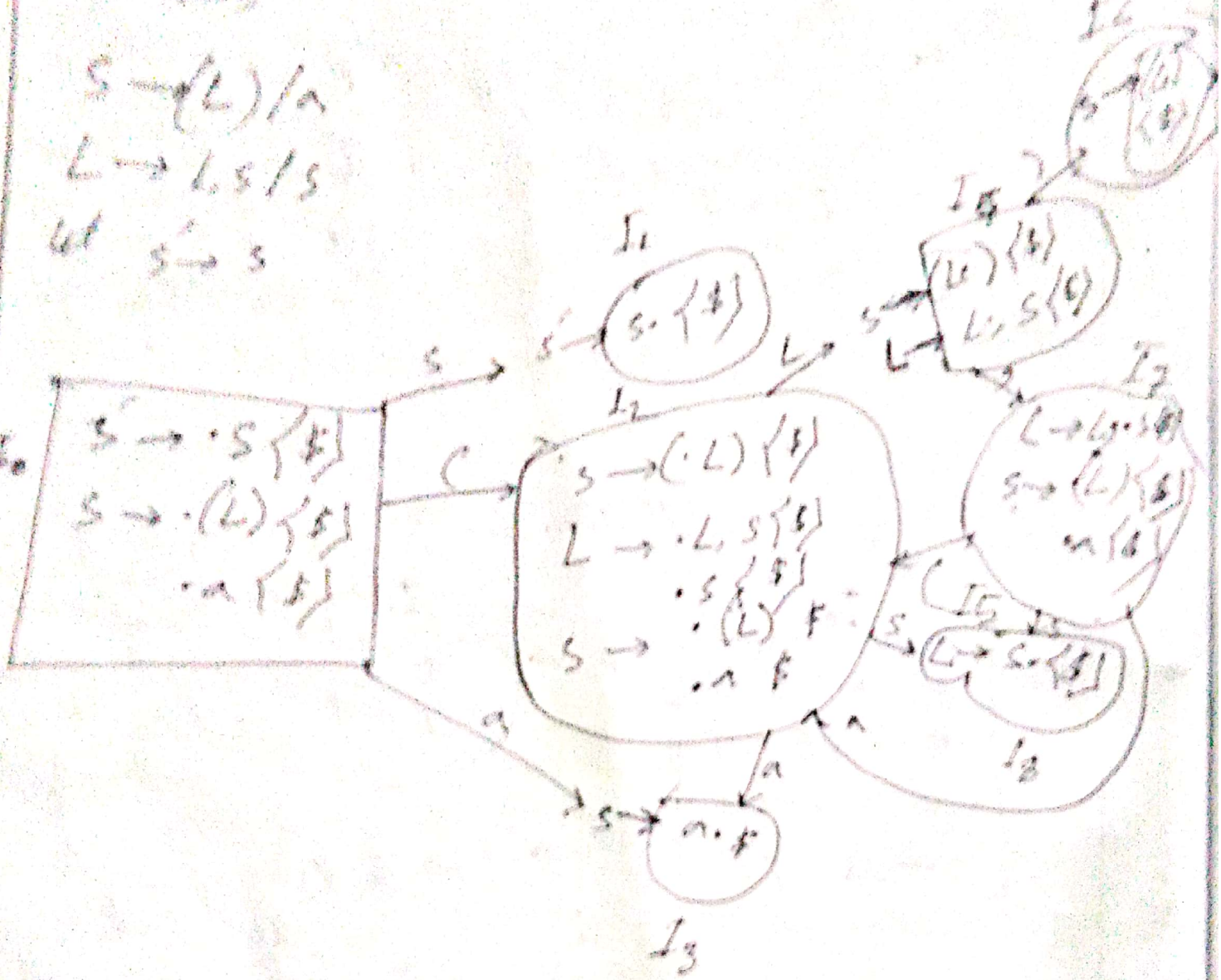
Answer to the question no - 10 (LR1)

Given that

$S \to (L) / a$

$L \to L, S / S$

Let $S' \to S$



CLR(1) Parsing table:

	Action					Goto	
	(	)	a	,	$		
I_0	S_2		S_3				
I_1							
I_2	S_2		S_3			I_5	I_4
I_3					R_2		
I_4		S_6		S_7			
I_5					R_4		
I_6					R_1		
I_7			S_3			I_8	
I_8					R_3		

LALR

	Action					Goto	
	(	)	a	,	$	S	L
I_0	S_2		S_3				
I_1							
I_2	S_2		S_3			I_4	I_5
I_3							
I_4		S_6		S_7			
I_5					R_4		
I_6					R_1		
I_7			S_3			I_8	
I_8					R_3		

Answer to the question no - 6 & 7 (LR1)

Soln:

Given that,

$E \to E + T / T$

$T \to i$

let $E' \to E$

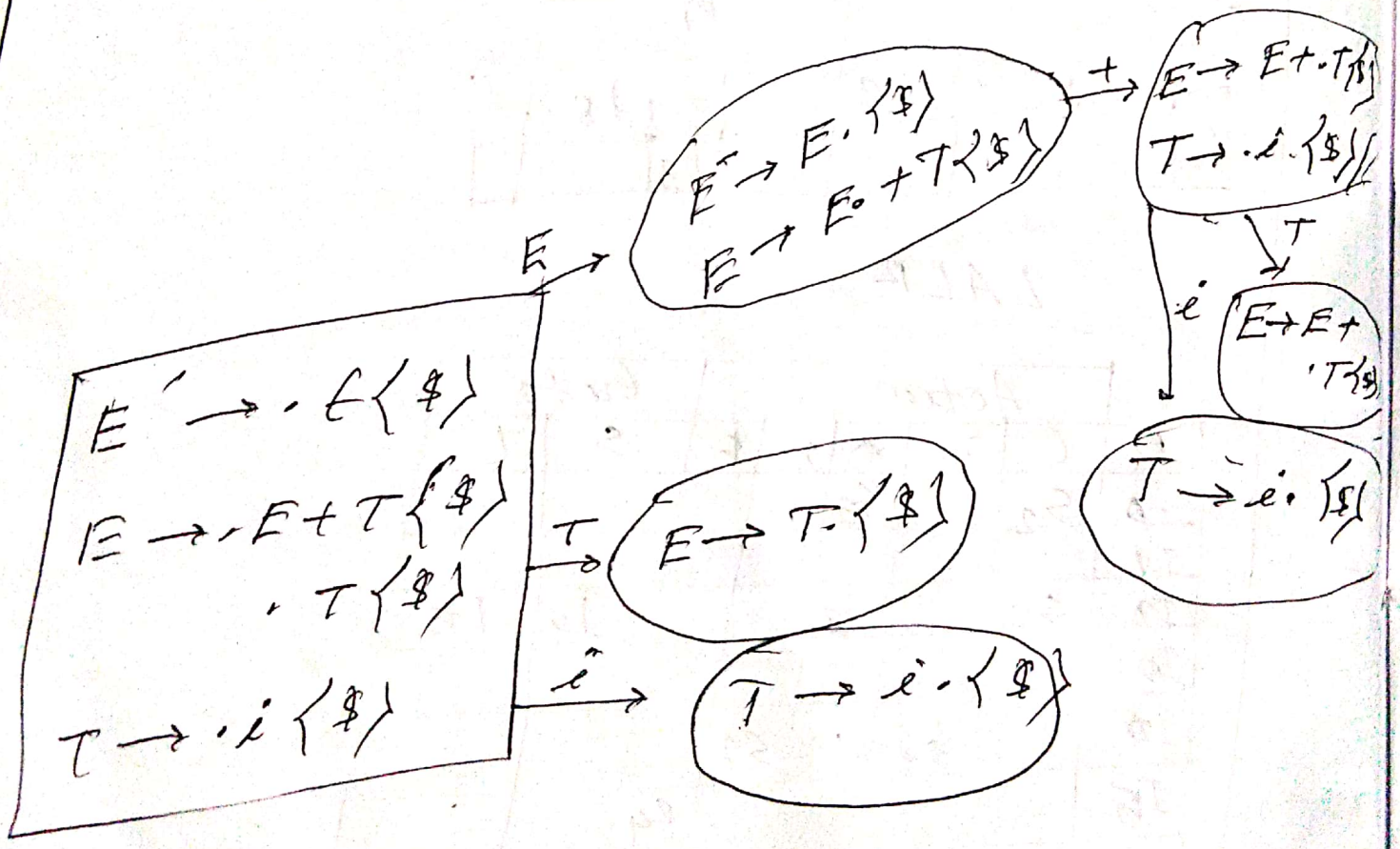
∴ Augmented Grammar

$E' \to . E \{\$\}$

$E \to . E + T \{\$\}$

$. T \{\$\}$

$T \to . i \{\$\}$



CLR(1)

Rules

$E \rightarrow E + T$ — (1)

$E \rightarrow T$ — (2)

$T \rightarrow i$ — (3)

	Action			Goto	
	+	i	$	E	T
I_0		S_3		I_1	I_2
I_1	S_4				
I_2			R_2		
I_3			R_3		
I_4		S_3			
I_5			R_1		

LALR

	Action			Goto	
	+	i	$	E	T
I_0		S_3		I_1	I_2
I_1	S_4				
I_2			R_2		
I_3			R_3		
I_4		S_3			
I_5			R_1		