Q5 ii)
2077

$S \to AaAb \mid BaBa$

$A \to e$

$B \to e$

or not?

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Production	First	Follow
$S \to AaAb \mid BaBa$	$\{e\}$	$\{\$\}$
$A \to e$	$\{e\}$	$\{a, b\}$
$B \to e$	$\{e\}$	$\{a, a\}$

	a	b	e	$
S			$S \to AaAb$ $S \to BaBa$	
A			$A \to e$	
B			$A \to e$	

not LL(1)

2018 Q5b)

$S \to iCtSS' \mid a$

$S' \to eS \mid \epsilon$

$C \to b$

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First(S) = {i, a}	Follow(S) = Follow(S'') = {First(S') − ϵ} ∪ Follow(S) = {e, $}
First(S') = {e, ϵ}	Follow(S') = {e, $}
First(C) = {b}	Follow(C) = {t}

	i	t	a	e	b	$
S	S→iCtSS'		S→a			
S'				S'→eS S'→ϵ		S'→ϵ
C					C→b	

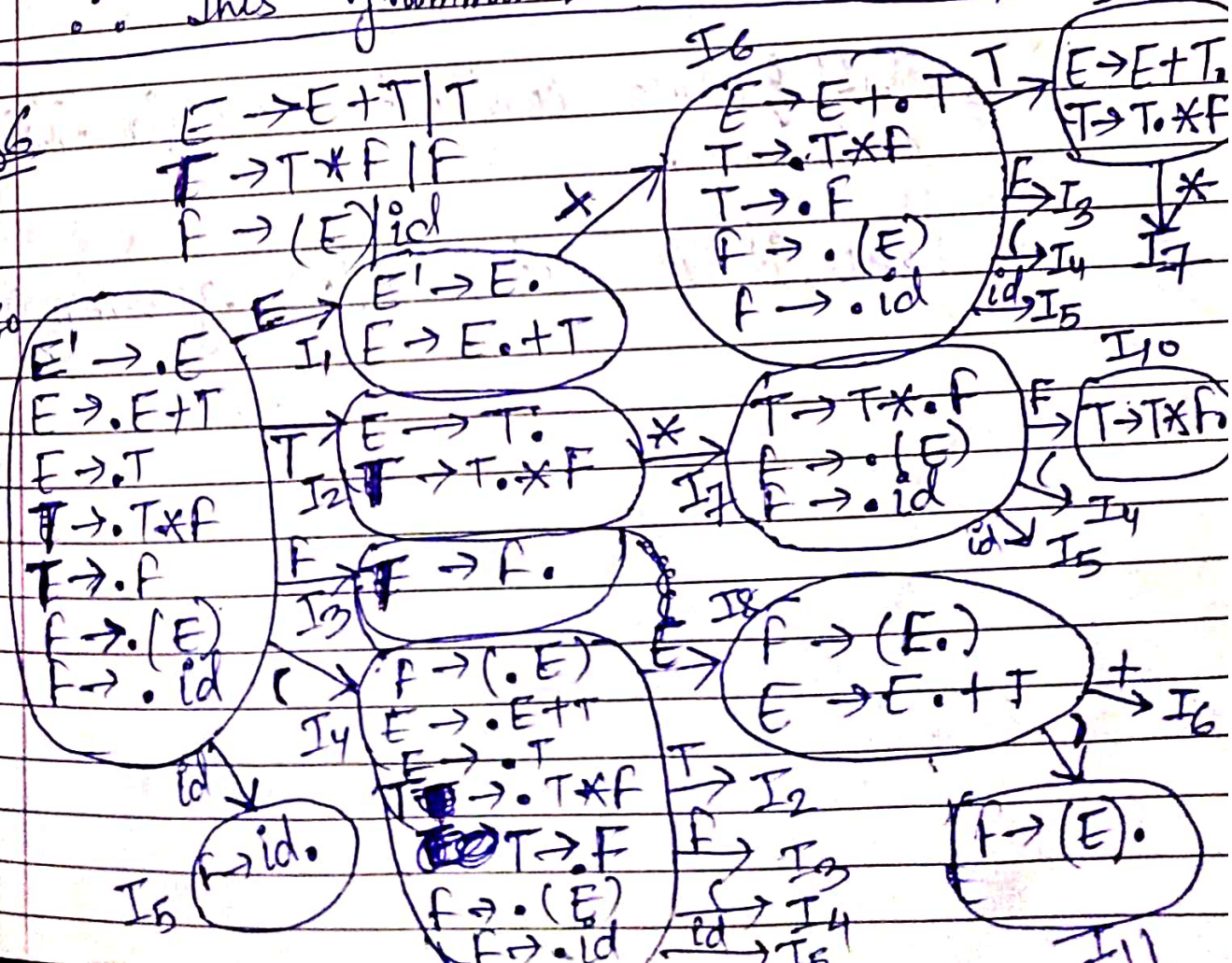
∴ This grammar is not LL(1) parser.

2017 Q6

$E \to E+T \mid T$

$T \to T*F \mid F$

$F \to (E) \mid id$



States	Action						Goto		
	+	*	(	)	id	$	E	F	T
I_0			S_4		S_5		1	3	2
I_1	S_6					Accept			
I_2	r_2	r_2/S_7	r_2	r_2	r_2	r_2			
I_3	r_4	r_4	r_4	r_4	r_4	r_4			
I_4			S_4		S_5		8	3	2
I_5	r_6	r_6	r_6	r_6	r_6	r_6			
I_6			S_4		S_5			3	9
I_7			S_4		S_5			10	
I_8	S_6			S_{11}					
I_9	r_1	r_1/S_7	r_1	r_1	r_1	r_1			
I_{10}	r_3	r_3	r_3	r_3	r_3	r_3			
I_{11}	r_5	r_5	r_5	r_5	r_5	r_5			

∴ Shift Reduce conflict occur in this grammar.

Hence, it is not LR(0) grammar.

Q. $E \to TE'$

$E' \to +TE' / \epsilon$

$T \to FT'$

$T' \to *FT' / \epsilon$

$F \to (E) / id$

LL(1) or not?

First (E) = First (T) = First (F) = { (, id }

First (E') = { +, ε }

First (T) = First (F) = { (, id }

First (T') = { *, ε }

First (F) = { (, id }

Follow (E) = { $,) }

Follow (E') = Follow (E) = { $,) }

Follow (T) = { First (E') − ε } ∪ Follow (E)

= { +, $,) }

Follow (T') = Follow (T)

= { +, $,) }

Follow (F) = { *, +, $,) }

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2) Parsing Table

	id	+	*	(	)	$
E	$E \to TE'$			$E \to TE'$		
E'		$E' \to +TE'$			$E' \to \epsilon$	$E' \to \epsilon$
T	$T \to FT'$			$T \to FT'$		
T'		$T' \to \epsilon$	$T' \to *FT'$		$T' \to \epsilon$	$T' \to \epsilon$
F	$F \to id$			$F \to (E)$		

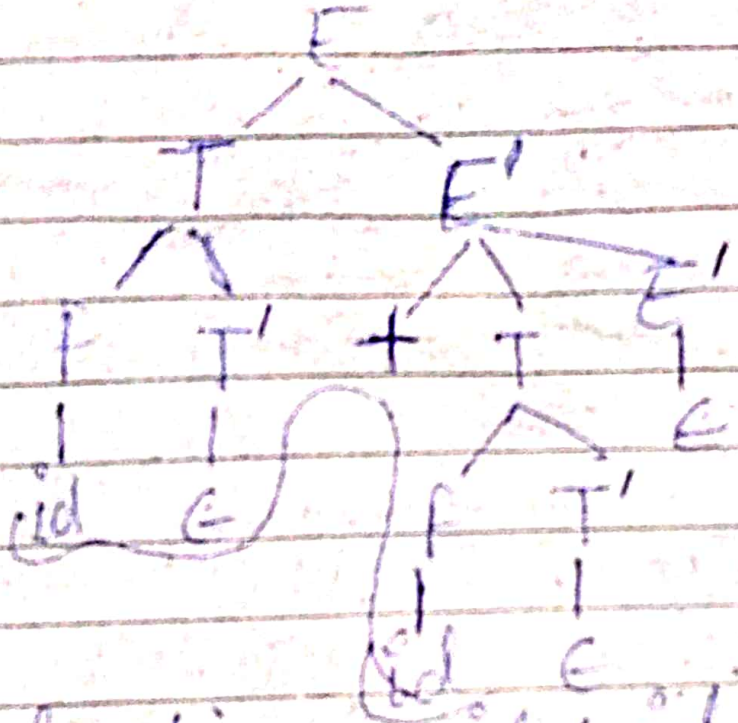
3) Stack Implementation

i/p = id+id

Stack	i/p	Action / Production
$E\$$	$id+id\$$	$E \to TE'$
$TE'\$$	$id+id\$$	$T \to FT'$
$FT'E'\$$	$id+id\$$	$F \to id$
$idT'E'\$$	$id+id\$$	Pop id
$T'E'\$$	$+id\$$	$T' \to \epsilon$
$E'\$$	$+id\$$	$E' \to +TE'$
$+TE'\$$	$+id\$$	Pop +
$TE'\$$	$id\$$	$T \to *T'$
$FT'E'\$$	$id\$$	$F \to id$
$idT'E'\$$	$id\$$	Pop id
$T'E'\$$	$\$$	$T' \to \epsilon$
$E'\$$	$\$$	$E' \to \epsilon$

$ $ Accepted

4) Generate parse tree using stack implementation table.



Final string = id + id