Date :

Q.3 LALR(1)

$S \to Aa / aAc / Bc / bBa$

$A \to d$

$B \to d$

Sol Step 1: Argumented Grammar

$S1 \to S$

$S \to Aa / aAc / Bc / bBa$

$A \to d$

$B \to d$

Step 2: Closure $(S1 \to \cdot S)$

$I0$:

$S1 \to \cdot S$, $\$$

$S \to \cdot Aa$, $\$$ -1

$S \to \cdot aAc$, $\$$ -2

$S \to \cdot Bc$, $\$$ -3

$S \to \cdot bBa$, $\$$ -4

$A \to \cdot d$, a/c -5

$B \to \cdot d$, c/a -6

goto $(I_0, S) \to \{S1 \to S \cdot , \$\} = I_1$

goto $(I_0, A) \to \{S \to A \cdot a , \$\} = I_2$

goto $(I_0, B) \to$ ~~{S → B · c , $}~~ $\{S \to B \cdot c , \$\} = I_3$

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goto (I0, a) → {S → a · Ac , $
A → · d , a/c} - I4

goto (I0 b) → {S → b · Ba , $
B → · d, c/a} - I5

goto (I0, d) → {A → d · , a/c
B → d · , c/a} - I6

goto (I2, a) → {S → Aa · , $} - I7

goto (I3 , c) → {S → Bc · , $} - I8

goto (I4, A) → {S → aA · c , $} - I9

goto (I4, d) → {A → d · , a/c} - ~~I6~~ I10

goto (I5, B) → {S → bB · a , $} - ~~I10~~ I11

goto (I5, d) → {B → d · , c/a} - ~~I6~~ I12

goto (I9, c) → {S → aAc · , $} - ~~I13~~ I13

goto (I10, a) → {S → bBa · , $} - ~~I14~~ I14

Date :

State	a	b	c	d	$	S	A	B
		Action	Table			Go	to	Table
I0	I4	I5		I6		1	2	3
I1					Accept			
I2	S7							
I3			S8					
I4				S10				9
I5				S12			11	
I6	R5		R5	R5				
I7					R1			
I8					R3			
I9	S13							
I10	R5							
I11			S4					
I12			R6					
I13					R2			
I14					R4			