2018CSE0621
Sai Ram. K
7- CSE-10

Part - C

Q.1] Given, L -> WID — ①
W -> while (c) begins S end — ②
D -> do begin(S) end while (c) - ③
C -> V <= V — ④
V -> id | num — ⑤
S -> AS | ε — ⑥
A -> ~~for~~ At := V; A |;ε — ⑦

i] Tokens in the given grammar string are :-

L> Keywords : while, end, begins, do, id, num
L> Tokens : (If any) {, }, (,), ;, :, >
L> Tokens : +, =, :, <.

ii] Compute first :
first (L) = { while, do }
first (W) = ~~do~~ {while}
first (D) = { do }
first (C) = { id, num }
first (S) = { id, num, ε }
first (A) = { id, num, ; }

Compute follow :
follow (L) = { $ }
follow (W) = { $ }
follow (D) = { $ }
follow (C) = {) }
follow (V) = { <,), +, ; }
follow (S) = { end }
follow (A) = { id, ~~e~~num, ;, end }

Parsing Table

	while
L	L->W
W	W->while(c)begin Send
D	
C	
V	
S	
A	

	while	(c)	Begin	End	do	<	=	id	num	ε	+	;	$
L	L->W ①				L->D ①								
W	~~W->While~~ W->While(c) begin Send ②												
D					D->do begins end while ③								
C								④	⑦				
V								⑧ ⑤	⑤				
S								⑥	⑥	⑥			⑥
A								⑦	⑦				⑦

∴ The grammar is in LL(1).

iii] Input String Validation