PRODUCTION	SEMANTIC RULES	PRODUCTION	SEMANTIC RULES
$P \rightarrow S$	S.next = newlabel()	$B \rightarrow B_1 \mid \mid B_2$	$B_1.true = B.true$
	$P.code = S.code \mid \mid label(S.next)$		$B_1.false = newlabel()$
			$B_2.true = B.true$
$S o {f assign}$	S.code = assign.code		$B_2.false = B.false$
			$B.code = B_1.code \mid\mid label(B_1.false) \mid\mid B_2.code$
$S \rightarrow \mathbf{if} (B) S_1$	B.true = newlabel()		1.10
	$B.false = S_1.next = S.next$	$B \rightarrow B_1 \&\& B_2$	· ·
	$ S.code = B.code label(B.true) S_1.code$		$B_1.false = B.false$
			$B_2.true = B.true$
$S \rightarrow \mathbf{if} (B) S_1 \mathbf{else} S_2$	B.true = newlabel()		$B_2.false = B.false$
	B.false = newlabel()		$B.code = B_1.code \mid\mid label(B_1.true) \mid\mid B_2.code$
	$S_1.next = S_2.next = S.next$	$B \rightarrow ! B_1$	D true - D false
	S.code = B.code	$D \rightarrow D_1$	$egin{array}{l} B_1.true = B.false \ B_1.false = B.true \end{array}$
	$ label(B.true) S_1.code$		$B_1.Jaise = B.true$ $B.code = B_1.code$
	$\parallel gen('goto' S.next)$		$D.code = D_1.code$
	$ label(B.false) S_2.code$	$B \rightarrow E_1 \operatorname{rel} E_2$	$B.code = E_1.code \mid\mid E_2.code$
		$D \rightarrow E_1 \text{ ref } E_2$	$ gen('if' E_1.addr rel.op E_2.addr'goto' B.true) $
$S \rightarrow \mathbf{while} (B) S_1$	begin = newlabel()		gen('goto' B.false)
, , -	B.true = newlabel()		gene (go oo
	B.false = S.next	$B \rightarrow \mathbf{true}$	B.code = gen('goto' B.true)
	$S_1.next = begin$	D / Ulas	Zicous gen(gran zina)
	S.code = label(begin) B.code	$B \rightarrow \mathbf{false}$	B.code = gen('goto' B.false)
	$ label(B.true) S_1.code$		
	gen('goto' begin)		
			S.next = newlabel()
$S \rightarrow S_1 S_2$	$S_1.next = newlabel()$	$P \rightarrow S$	· ·
	$S_2.next = S.next$		$P.code = S.code \parallel label(S.next)$
	$ S.code = S_1.code label(S_1.next) S_2.code$		B.true = newlabel()

$P \rightarrow S$	S.next = newlabel() P.code = S.code label(S.next)	
$S \rightarrow if(B) S_1$	$B.true = newlabel()$ $B.false = S_1.next = S.next$ $S.code = B.code \parallel label(B.true) \parallel S_1.code$	
$S \rightarrow id = E;$	S.code = E.code gen(top.get(id .lexeme)'=' E.addr	
E → num	E.addr = num .val E.code = ' '	
$E \rightarrow id$	E.addr = top.get(id .lexeme) E.code = ' '	