	Name - Arnod Dhogavkar	DATE//
	ans - TEII	PAGE NO
	Rall No - 33304	
	SP UT-2	19 19 18 188
8. 1	a substance kit in hit is a si	W wy of Ca
Q-2) 0	Generate 3 address code for the statement	same alread
· - /	while a < b and not c = d do	
	1 2 to a new It don't will all	
	if or < 1x then	
	77 W(a) + b;	
	and but else and that het Tallman	
7	Z T W (a) + Z;	
	2 a+1;	
		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Ans)	Vari 1 = a < b	
	Van 2 + cl+d	
	Van 3 = n < vy	
	the state of the s	
	L1: if (vani &8 van 2) go to 13	
	go to 13	
	12: if (vars) z= w(a) + b; a= a+	
	Z= w(a) + Z ; a = a+1;	
	13:	
	tice of the contract of the co	- 1
\$.3) b)	biscups code generation issues.	
Ama	1- Input to under generator - The intermediate	
	produces output in the form of interocduate	nepresentation (IR) in t
	front end of the congilation process.	
	2	-
	2. Tanget program - The output of code gener	ator is output marline
	code. Tanget code nay be absolute marline	language, relocatable
	Machine language, assembly language.	
		4
1.1.	3. Address mapping - It is used for	mapping between IR
	to the address in the Machine ande.	
	The state of the s	
	4. Memory management - The front end and	code generator does
Carrier and	the mapping bown the symbol / variable no	
		7 %

	33304 My Companion —				
હહે	Explain flow graph.				
GNA	1. Basic blocks generated by use generator in a program				
. 9	can be represented by years of control flow graphs				
	2. In control flow graphs, basic blocks are represented as				
	modes and the edges indicate the sequence of blocks				
	3. It represents the proxing of program portrol between				
	Various blocks.				
	a. It is an important tool that helps in the process of optimization by locating any unnecessary loops in the				
	program.				
	Eg - Flow graph for vector addition				
	Entry				
-					
	Brod = 0 B1				
4	V F				
-					
	t1: = 4+1				
	t2; 7 A [ti] 82				
	t2: - 4*1				
	t4: 5 6 [t3]				
1	t5; 7 t2 * t4				
	to: 5 prod + to				
	puod: = tb				
	N: 2 pt				
	if i/ < 20 go to b2				
1					
	(Exit)				
6.3 6)	Explain the following Machine independent optivization techniques.				
And	Machine independent optimization techniques are used to inprove				
	the interreducte ande, to get a better target rade-				
	The part of the code which is transferred here does				
JE (X					

	my companion =
	not involve any absolute nemony location of on CPV negotiers
	The process of interprediate code generation introduces much inelligiency like - using toler variables instead of constants , exten copies of variables, repeated evaluation of data.
	· No.l · l · · · · · ·
	One on none ande statements which are either never executed on are unreachable; on if enerated, their autput is never used.
1	2. Storength reduction:
	It is used to replace the high strength aperators by low strength. An induction variable is used in loop for this kind of statement.
	0/1 (A)
	Before meduction >
	While (i < 10)
- ti - (1	Mr DAN'S
	After reduction >
	Ü= \ t = 4
	while (t < 40)
	yrt Ed.
	t = t + 4
X2.13	
g.2)2)	For the input string A, B, C: REAL construct an amnoted pourse tree according to the following syntax directed
	definition
E man	cz time 7

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Ans	1157 1	F. val		= Wycompanion =
-		V Vol		
, l	idual	- i.tl		. 0
	10.00	integer val		Fleat
l,	Toyal	- 1		The second second
(1- Vac 7 Integer	T. val - neal ic	1-Val = Integer	S. val & integer >
				neal
	27	T. val	- Integer T. val	- Meal
	14		the later	
3	Act and a	Annotated parise	thee !	7 7 67
(())	- 1		As a series	Fata
(X-2/b)	ton the attribu	tes of the s	yntan dinerlod	definition of 82)
	WINNEY	alleribile	is inherited	On synthesized
3	using the fallow	erny table	NEW TOTAL	-T
Torra	etal and	a la di the rail	satisfies 1	Transfer of
Ano		Inherited	Synthe si	sed
	id extray	108	No	1 -
	S. entry		No	
	T. type	No	Yes	
			(u/)	
4:00		N 11. ~		,
4\/n)	honoider the	following granuar	· Construct	bFA of LR(0) items
	and SLR(i)	sousing lable.		Avel (*)
-				1 = .
	T,		- id (F) I8	S = 1
	L→ L·;	1(5)		
	S → id (i	F) , _	2 101	*
	s → .id	(11,5/	3 -> id (-E)	
	1			
Programme	L -> - L;	The second secon	E → num	(19,5)
Let soun	L -> -3		Towns Towns	- 1014
	s mid	(Io,L) L - S.	T2 (73,5)	S + 1d (E)
	(70,5) \$ -> . 6	12 5) S→ id. (E)	(4257)	→ F → ·id
	E →id	E > id.		F → num
	V		13	21
	S \rightarrow F. \downarrow	(J_0, E) $\longrightarrow S \rightarrow id$	-	



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	<u>33304</u>			mycompanion ——
	(A-	Inherited	Syntesized	
	id entry	Yes	No	
	S. entry	Yes	No	
	T. Type	No	Yes	
	UI	g		
लिलि	Cansider the fol	lowing grammar		
	exp - id (exp	- list + no		
	0p → +1 -1 *			
	exp-list > exp		3	*
	Remove the left	norussion and a	nente first	and follow set
	for non-twining	of the grenult	ting gravenar	V
Cara	Gramman after Mer	10VSNa let His	ecursion ->	a de
.,/	$exp \rightarrow id$			
	$op \rightarrow +1-1$		al .	
	$\exp - list \rightarrow exp$	exo-list'	2	je je
	exp-list' > exp	exp-list'le		F
	the man	7.7		
		Follow	7	First
	2xp	\$	and the state of t	8, id, €
	exp_ hit	(, id, e		
	exp = (w)	id, C, e		
	00	id 2 €		4, -,*
				- No. 2
	-			2 11
			· · ·	
		. 17 . 44		
			The second	
1				
				7