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8. When does dangling references mean?	7. When do you cal	ll a variable to be syntactically live at a point?
	8. When does dang	ling references mean?

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- 9. Define constant folding.
- Identify and write down the optimizations that could be performed on a Peephole.

PART B —
$$(5 \times 13 = 65 \text{ marks})$$

 (a) Elaborate on the different phases of compiler with a neat sketch. Show the output of each phase of the compiler when the following statement is parsed.

$$SI = (p *n*r)/100$$

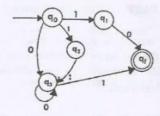
Where.

n should only be an integer

p and r could be floating point numbers

Or

(b) Convert the following NFA to DFA.



 (a) Check whether the following grammar can be implemented using Predictive parser. Check whether the string "abfg" is accepted or not using predictive parsing.

$$A \rightarrow A$$

$$A \rightarrow aB \mid Ad$$

$$B \rightarrow bBC \mid f$$

$$C \to g$$

Or

(b) Check whether the following grammar can be implemented using Predictive parser. Check whether the string "(a,a)" is accepted or not using predictive parsing.

$$S \rightarrow (L) \mid a$$

$$L \rightarrow L, S \mid S$$

2

20423

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	(b)	Explain the storage allo	ocati	on techniques with an example.	
	2000			Or	
15.	(a)	Describe the parameter	pas	sing techniques with an example.	
		a[i,i]=1.0;			
		for i from 1 to 10 do			
		a[i, j] = 0.0;			
		for j from 1 to 10 o	lo		
		for i from 1 to 10 do			
	(b)	Construct the basic bloc	eks a	nd flowgraph for the following piece of cod	e.
				Or	
14.	(a)	Elaborate the issues in	deve	loping a code generator.	
		x :=y-z			
		else			
		x := y+z			
		if c < d then			
		do			
		while $a \le b$			
	(b)	Write the syntax directe	ed tr	anslation for the following piece of code.	
				Or	
		E	\mapsto	false	
		E	\mapsto	true	
		E	\mapsto	id ₁ relop id ₂	
		E	\mapsto	(E ₁)	
		E	\mapsto	not E ₁	
		E	\mapsto	E ₁ and E ₂	
	979,739	E	\mapsto	E ₁ or E ₂	
13.	(a)	Write the syntax directe	ed tr	anslation for the following code:	

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			PART C — $(1 \times 15 = 15 \text{ marks})$					
10	6. (a)	Consider the following basic block, in which all variables are integers and ** denotes exponentiation						
		a :=	x**2					
		b :=	3					
		c :=	x					
		d :=	c*c					
		e :=	b*2					
		f :=	a+d					
		g :=	e*f					
			ly the following optimization techniques to this bupute the result of each transformation.	asic block, in order.				
		(i)	Algebraic Simplification	(3)				
		(ii)	€opy Propagation	(3)				
		(iii)	Constant Folding	(3)				
			Dead Code Elimination	(3)				
		(v)	Common Sub-expression Elimination	(3)				
		(*)	Or	(6)				
	(b)	Con	struct LR(l) items for the following grammar and	draw the transition				
	(D)		ram representing the transitions among CLR iter					
			·CC					
		$C \rightarrow$						
		$C \rightarrow$						
		Show	w whether the string "cdcd" is accepted by this gra	ammar or not.				
			•					
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