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R V College of Engineering, Bangalore-59
(Autonomous Institution affiliated to VTU, Belgaum)
Department of Information Science and Engineering
CIE - II : Question Paper

Course: (Code)	Compiler Design (12IS5A3)	Semester : V	
		UG/PG	UG
Date : Oct-2014	Duration : 2 Hrs	Staff : Dr NKC	
Note : i) Answer All questions. ii) Part A Questions to be answered in first 2 pages of answer booklet.		Max. Marks : 15 + 50	

	PART - A	Marks	Level	CO
1.1	Generate type and size for the declaration <code>int [2][3][4]</code>	02	L2	CO2
1.2	If $A \rightarrow A_1 Y \{A.a = g(A_1.a, Y.y)\}$ $A \rightarrow X \{A.a = f(X.x)\}$ then $A \rightarrow X \{ \underline{\hspace{2cm}} \}$ $R \rightarrow Y \{ \underline{\hspace{2cm}} \}$ $R \rightarrow \epsilon \{ \underline{\hspace{2cm}} \}$	02	L3	CO3
1.3	Constrict DAG for the expression $a+b+(a+b)$	01	L2	CO3
1.4	Write syntax tree for the expression $4+5*(6+3)+(6+3)*7$	02	L4	CO2
1.5	Write syntax tree and quadruples for the expression $4+5*(6+3)+(6+3)*7$	02	L3	CO4
1.6	If underlying grammar is LR –parser, then SDD is _____ attribute, similarly if underlying grammar is LL-parser, then SDD is _____ attribute.	02	L1	CO2
1.7	If $A[10,20]$ is an integer array with starting address 0, find the location of $A[10,8]$	02	L2	CO2
1.8	Write semantic rule to generate three address code for the production $E \rightarrow -E_1$	02	L1	CO3
1.9	Write quadruples and triples for the expression $4+5*(6+3)/(6+3)*7$	02	L2	CO4

	PART - B	Marks	Level	CO
1. a.	Write the semantic rule to generate syntax tree for L-attribute definition for arithmetic expression.	06	L1	CO2
b.	Construct DAG for the statements $a=b*c$ $d=a*e$ $b=b*c$ $a=e-d$	04	L2	CO3

2 a.	Write the different forms of three address code.	07	L1	CO3
b.	Describe with and example static single assignment statement form.	03	L2	CO2
3 a.	Generate three address code for the following assignment statement. $X = B[A[i][j]] + C[k[i]]$	06	L3	CO4
b.	Explain how type conversion can be done for primitive data types.	04	L1	CO4
4 .	Write semantic rule to generate three address code for the following control construct: a. For statement b. Do-while statement	10	L3	CO3
5.	Generate three address code for the following statements: a. $a = f(b, a+b, x[i])$ b. $i=0; \text{ while } (i < 10) i++;$	10	L3	CO3