SATHYABAMA
INSTITUTE OF SCIENCE AND TECHNOLOGY
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CONTINUOUS ASSESSMENT TEST - II

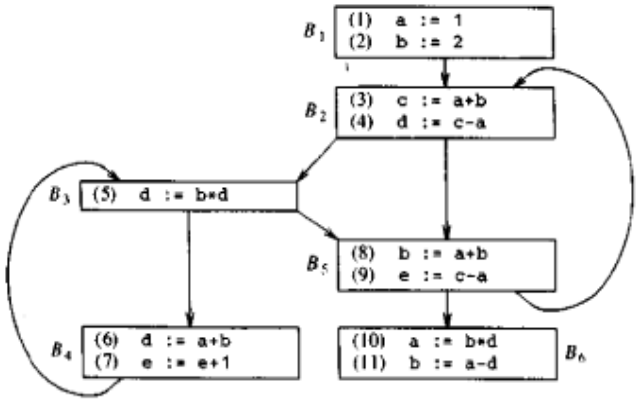
Program : B.E/B.Tech-CSE/IT **Max. Marks: 30**
Course : Compiler Design **Time : 1 Hour**
Course code : SCS1303 **Sem : V**
Batch : 2018-2022 **Date : 4-11-2020**

Part-A **Answer ALL the questions** **(5×2=10)**

Q.No	Questions	CO (L)
1.	Construct syntax tree and postfix notation for the following expression: (a+(b*c)^d)-e/(f+g)	**3(3)**
2.	Generate the three address code for: **if** A < B **then** A=A+1 **else** B=B+1 according the syntax directed translation for flow of control statements.	**3(3)**
3.	What are the rules to determine the leaders of basic blocks?	**4(1)**
4.	Construct the DAG representation for the following sequence of code with : 1. E=A+B 2. F=E- C 3. G=F+D 4. H=A+B 5. I=I-C 6. J=I+G	**4(3)**
5.	List the Data flow equations used in global data flow analysis.	**4(1)**

Part-B **Answer ALL the questions** **(2×10=20)**

Q.No	Questions	CO (L)
6.	a) Determine the quadruples, triples and indirect triples for the expression: -(a*b)+(c+d)-(a+b+c+d) (5 marks) b) Discuss the different types of data structure for generation of symbol table. (5 marks)	**3(5)** **3(6)**
	(OR)	
7.	Evaluate the expression 3*15+7$ according to the syntax directed translation of a desk calculator. Also construct the annotated parse tree.	**3(5)**

8.	For the following program segment, construct flow graph and apply the optimization techniques to generate an optimized code and flow graph. **begin** **prod:=0** **i:=1** **do begin** **prod:=prod+a[i]*b[i]** **i:=i+1** **end** **while i<=20** **end**	**4(5)**
	(OR)	
9.	a) Estimate the bit vector representation of GEN and KILL for the given flow graph. (4 marks).  b) Discuss the importance of peephole optimization techniques with suitable example. (6 marks)	**4(5)**