Department: Computer Technology | PRIYADARSHINI COLLEGE OF ENGINEERING, NAGPUR | Section: A, B

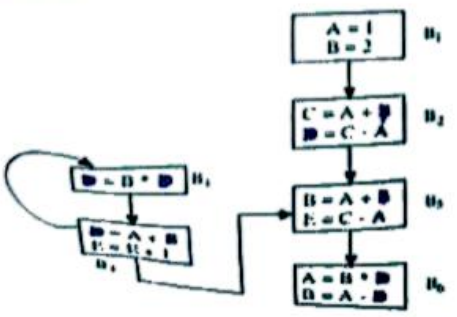
Semester: VI

Subject: Compilers Design | CAT-II(2022-23) | Subject Code: (BTCT601T)

Duration: 1.5 Hrs. | Max Marks: 35

Note:
1. All questions are compulsory.
2. All questions carry marks as indicated.

Que No.	Questions	Mark	CO	BL
1(a)	1) Which is not true about syntax and semantic parts of a computer language?			3
	a) Semantics is checked mechanically by a computer b) Semantics is the responsibility of the programmer c) All of the mentioned d) None of the mentioned	2	CO3	
	2) What is the postfix expression for the corresponding infix expression? a+b*c+(d*e) a) abc*+de*+ b) abc+*de*+ c) a+bc*de+* d) abc*+(de)*+			3
(b)	What do you mean by SDTS. Explain with example.	5	CO3	2
(c)	Translate given expression into TAC if x < y then a= b + c else p= q+r	7	CO3	2
	OR			
2(a)	1) An intermediate code form is _____ a) Postfix notation b) Syntax Trees c) Three Address code d) All of the mentioned			3
	2)Inherited attribute is a natural choice in _____ a) Tracking declaration of a variable b) Correct use of L and R values c) All of the mentioned d) None of the mentioned	2	CO3	1
(b)	Define Attribute. Explain different types of attributes.	5	CO3	2
(c)	Translate the expression A: = -B * (C + D)/E	7	CO3	2
3(a)	1) Peep-hole optimization is a form of a) loop optimization b) local optimization c) constant folding d)data flow analysis			1
	2) An optimizing compiler a)is optimized to occupy less space b) is optimized to take less time for execution c)optimizes the code d)All of the above	2	CO4	1
(b)	Write a note on a) Loop unrolling. b) Loop Jamming.	5	CO4	2
(c)	Find IN and OUT for every blocks for the following graph	7	CO4	1



OR

4(a) 1) Local and loop optimization in turn provide motivation for
a) data flow analysis b) constant folding c) peep hole optimization d) DFA and constant folding

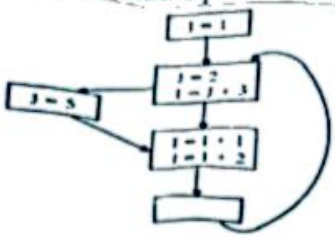
1

2) The optimization technique which is typically applied on loops is
a) removal of invariant computation b) peephole optimization
c) constant folding d) all of these

2 CO4 2

(b) Explain Peephole optimization with their characteristics. 5 CO4 2

(c) What is data flow equations? Solve the data flow equation for the following flow graph. 7 CO4 3



5(a) 1)Symbol table can be used for
a) checking type compatibility
b)supressing duplication of error message
c) storage allocation
d) All of these

1

2) The access time of the symbol table will be logarithmic if it is implemented by
a) Linear List
b) Search tree
c) hash table
4) Self organization list

2 CO5 1

(b) What are different storage allocation strategies? Explain dynamic 5 CO5 1

OR

6(a) 1) Which technique comes under Storage Allocation Strategies ?
a) Static allocation
b) Stack allocation
c) Heap allocation and Static allocation
d)All of above

1

2) Which of the following is an example of static memory allocation?
a) Linked list
b) Stack
c) Queue
d) Array

2 CO5 2

(b) Define symbol table. Explain data structure use for Representation of symbol table 5 CO5 3