

Department of Computer Science and Engineering

Indian Institute of Technology, Kharagpur

Compiler Theory: CS31003

3rd year CSE, 5th Semester

Assignment - 8: CFG and Code Generation

Marks: 10

Practise Assignment

Mode: Individual Submission

1. Consider the following Three Address Code (TAC),

100: n = 10	109: if t3 != 0 goto 114
101: i = 0	110: t4 = i<<2
102: if i < n goto 106	111: t5 = c + t4
103: goto 118	112: *t5 = 0
104: i = i + 1	113: goto 104
105: goto 102	114: t6 = i<<2
106: t1 = i<<2	115: t7 = c + t6
107: t2 = a[t1]	116: *t7 = 1
108: t3 = t2 % 2	117: goto 104
	118: return

Construct the basic blocks and draw the control flow graph.

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2. Consider the following quad,

```
01.  a = 10
02.  b = 2 * a
03.  t1 = i * j
04.  t2 = a + t1
05.  c = i
06.  t3 = c * j
07.  t4 = 4 * a
08.  d = t2 + t4
```

Perform value numbering and write the resulted quad along with ValueNumber, Name and Hash tables.

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Note: Please submit your answer handwritten in paper. Upload your answer in .pdf format in the moodle server. File name should be named as ass7-roll.pdf, where "roll" is your roll number.