Assignment 3

Name of Subject:	CD (01CE0714)	Name of Faculty:	Prof. Dhara Joshi
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Name of Topic:	ICG, Memory Management, Code Optimization & Generation		

1 Write Three address code, Quadruple, Triple and Indirect triple for following expression :
   1) $a = b * (-c) + b * m$
   2) $x = a + d * m \wedge k - v$

2 What is DAG? Draw Syntax Tree and DAG for following expression:
   $m = m * (-b) + (-b) * z$

3 Explain Synthesized and Inherited attribute with example.

4 Explain Activation Record in detail with figure.

5 Explain Code Optimization techniques with example.

6 Consider following pseudo-code
   L1: t1 = -1
   L2: t2 = 0
   L3: t3 = 0
   L4: t4 = 4 * t3
   L5: t5 = 4 * t2
   L6: t6 = t5 * M
   L7: t7 = t4 + t6
   L8: t8 = a[t7]
   L9: if t8 <= max goto L11
   L10: t1 = t8
   L11: t3 = t3 + 1
   L12: if t3 < M goto L4
   L13: t2 = t2 + 1
   L14: if t2 < N goto L3
   L15: max = t1
   Which one of the following options CORRECTLY specifies the number of basic blocks and the number of instructions in the largest basic block, respectively? Justify your answer.
   (a) 6 and 6 (b) 7 and 6 (c) 6 and 7 (d) 7 and 7

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