

- 6 a. Construct the DAG and identify the value number for the subexpression $a + b + (a + b)$ (08 Marks)
- b. Translate the arithmetic expression $a = b * -c + b * -c$ into
(i) Syntax tree (ii) Quadruples (iii) Triples (iv) Indirect triples. (08 Marks)
- c. Write a note on type checking. (04 Marks)
- 7 a. What is an activation record? Explain the purpose of each item in the activation record with example. Give the general structure of the activation record. (07 Marks)
- b. What do you mean by calling sequence? Explain the actions performed during function call and return. (07 Marks)
- c. Briefly explain time safety and performance metrics to be considered while designing a garbage collector. (06 Marks)
- 8 a. With an example explain common sub expression and deadcode elimination methods. (10 Marks)
- b. What are the basic blocks and how do you partition a three address code into basic block. (05 Marks)
- c. Explain the code generator algorithm. (05 Marks)

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