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| **Sri Sivasubramaniya Nadar College of Engineering, Kalavakkam – 603 110**  (An Autonomous Institution, Affiliated to Anna University, Chennai) | |
| **Department of Computer Science and Engineering**  **Continuous Assessment Test - 4**  **Question Paper** | **SET I** |

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| **Degree & Branch** | | BE (CSE) | | **Semester** | VI |
| **Subject Code & Name** | | UCS1602 Compiler Design | | **Regulation: 2018** | |
| **Sections** | | **A, B&C** | **Academic Year** | **2020-2021** | |
| **Date:** | **30.04.2021** | **Session: FN** | **Time:**  **8.15 am – 10.15 am** | **Max. marks : 50** | |

**Optimized three address code generation**

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| **K Level** | **Question** | **CO** |
| K3 | Assume the operators are having the following Precedence and Associativity  **Operators**  +, -, \* and /  Precedence 🡪\* and / have lesser priority than + and –  Associativity 🡪 \* and / 🡪 right , + and - 🡪 left  Develop a front end of a compiler by generating the Intermediate code in the form of Three Address Code sequence for the sample input program written using **assignment statements**. Further, optimize the generated intermediate code using **strength reduction**. Also develop a back end of the compiler for an assignment statement. Following is the sample input  **INPUT**  x=a+b\*c  y=x+k  z=x+y   1. Write the LEX specification to identify the tokens. (5) 2. Write the YACC specification to check the syntax of the input source code is correct or not (10) 3. Write the SDT in YACC to generate three address code (10) 4. Implement the code optimization segment in YACC (10) 5. Implement the code generation in YACC (5) 6. Integrate all the phases and generate optimized three address code for the given source code. (10) | CO1  CO2  CO3  CO5  CO4 |

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