**Internal Assignment**

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| **SESSION** | **August 2023** |
| **PROGRAM** | **bacholer of computer APPLICATIONS (bCA)** |
| **SEMESTER** | **V** |
| **course CODE & NAME** | **DCA3141\_Compiler Design** |
| **CREDITS** | **4** |
| **nUMBER OF ASSIGNMENTS & Marks** | **02 & 30 Marks each** |

**Note:**

* **There will be two sets of assignments for every course and all questions are compulsory in both sets.**
* **Average of both assignments’ marks scored will be considered as Internal Assessment Marks.**
* **Answers for 10 marks questions should be approximately of 400-500 words.**

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| **Set-I** | | | | |
| **Q. No** | **Questions** | **Marks** | **Total Marks** |
| **1.** | Explain the following key operations of Phases of a Compiler   1. Symbol-Table Management 2. Error Detection and Reporting 3. The Analysis Phases 4. Intermediate code generation 5. Code Optimization 6. Code Generation | 10 | 10 |
| **2.** | 1. Define Lexical Analyzer? Explain the Functions of Lexical Analyzer and Define Tokens, Patterns, Lexemes in Lexical Analyzer 2. Explain about Input Buffering | 5+5 | 10 |
| **3.** | What is Context Free Grammar? Explain Context Free Grammar, Derivation Trees, and Parse Trees with help of suitable example. | 10 | 10 |
| **Set-II** | | | | |
| **Q. No** | **Questions** | **Marks** | **Total Marks** |
| **4.** | What is Type conversion? Explain about  Implicit and explicit Type conversion methods with suitable examples. | 10 | 10 |
| **5.** | What is Translation of Boolean Expressions? Explain about Translation of Boolean Expressions with the following key concepts.   1. Control flow translation of boolean expressions 2. Semantic Rules for Boolean Expressions | 5+5 | 10 |
| **6.** | What is Run-Time Storage organization? Explain the following Storage allocation strategies.   1. Static allocation 2. Stack allocation 3. Heap allocation | 10 | 10 |