Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – Nov/Dec – 2016**

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|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **14CS2038** | **Duration :** | **3hrs** |
| **Sub. Name :** | **PRINCIPLES OF COMPILER DESIGN** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| Q. No | Sub Div. | Questions | Course  Outcome | Marks |
| 1. |  | Describe the various phases of a compiler in detail. Trace the output of each phase for the program segment a = b + 9.0 where a and b are integer data type. | CO1 | 20 |
| (OR) | | | | |
| 2. | a. | Explain the language processing system with necessary block diagram. | CO1 | 10 |
| b. | What is Context Free Grammar? When a grammar is said to be ambiguous? Explain with an example. | CO2 | 10 |
| 3. | a. | Discuss the issues involved in designing Lexical Analyzer. | CO1 | 10 |
| b. | Draw NFA for the regular expression (ab)\*(a|b) using Thompson’s construction. | CO1 | 10 |
| (OR) | | | | |
| 4. |  | Convert the regular expression 0\* (0|1)\*011 to DFA. | CO2 | 20 |
| 5. |  | Construct the predictive parsing table for the following grammar and parse the  string “not (0 and 1)” .  be -> be or bt | bt  bt -> bt and bf | bf  bf -> not bf | (be) | 0 | 1 | CO2 | 20 |
| (OR) | | | | |
| 6. |  | Construct SLR parsing Table for the grammar and parse “011” .  S -> CC  C -> 0C | 1 | CO2 | 20 |
| 7. | a. | Write code to generate three address intermediate code for expression for statements. | CO3 | 10 |
| b. | Write about S-attributed and L-attrbuted definition. | CO3 | 10 |
| (OR) | | | | |
| 8. |  | Explain with an example about the optimization of basic blocks. | CO3 | 20 |
|  | | **Compulsory:** |  |  |
| 9. |  | Convert a= a\*(b\*-c)+(b\*-c)/d into three address code, quadruples, triples, indirect triples, syntax tree and DAG. | CO3 | 20 |

ALL THE BEST