**Jyothy Institute of Technology**

**Tataguni, Bangalore – 560 082**

**Second Internal Test**

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| **Program** | **:** | **BE(Information Science & Engineering)** | **Date** | **:** | **8/10/2016** | **Time** | **:** | **1Hour** |
| **Course Name** | **:** | **Formal Languages & Automata Theory** | **Course Code** | **:** | **10CS56** | **Maximum Marks** | **:** | **25** |

**Answer the following questions.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Q No** | **Question** | **CO’s** | **Marks** |
| Q1a)  Q1b) | 1. Convert the following ɛ-NFA to DFA using subset construction scheme 2. Convert the ɛ-NFA that accepts ab(a+b)\*   **OR**   1. Minimize the DFA using table filling method:-  |  |  |  | | --- | --- | --- | | State | 0 | 1 | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  |  1. Obtain the RE from the following automata using state elimination method. | CO1  CO1  CO1  CO1 | 6  6  6  6 |
| Q2a) | i) Write LMD, RMD and parse tree for the string “**+\*-xyxy” using the grammar:**  **E->+EE|\*EE|-EE|x|y**  **ii) Obtain the grammar to generate integers and write derivation for the unsigned integer 1965**  **OR**  **i) What is ambiguous grammar? Show that the following grammar is ambiguous.**  **E->E+E|E\*E|(E)|id**  **ii) Design CFG for the language L={anb2n |n>=0}** | CO3  CO3  CO3  CO3 | 7  6  7  6 |

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| Q2a) | i) Write LMD, RMD and parse tree for the string “**+\*-xyxy” using the grammar:**  **E->+EE|\*EE|-EE|x|y**  **ii) Obtain the grammar to generate integers and write derivation for the unsigned integer 1965**  **OR**  **i) What is ambiguous grammar? Show that the following grammar is ambiguous.**  **E->E+E|E\*E|(E)|id**  **ii) Design CFG for the language L={anb2n |n>=0}** | CO3  CO3  CO3  CO3 | 7  6  7  6 | 4,5  4,5  4,5  4,5 |

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| --- | --- | --- | --- | --- | --- | --- |
|  | **CO 1** | **CO 2** | **CO 3** | **CO 4** | **CO5** | **CO6** |
| **Q1 a (i)** | X |  |  |  |  |  |
| **Q1 a (ii)** | X |  |  |  |  |  |
| **Q1 b (i)** | X |  |  |  |  |  |
| **Q1 b (ii)** | X |  |  |  |  |  |
| **Q2 a (i)** |  |  | X |  |  |  |
| **Q2 a (ii)** |  |  | X |  |  |  |
| **Q2 b (i)** |  |  | X |  |  |  |
| **Q2 b (ii)** |  |  | X |  |  |  |