**United College of Engineering & Research, Prayagraj**

**Department of Computer Science & Engineering**

**Assignment Paper, 2020-2021**

**Assignment No.: 2 Semester:** IV

**Course Name:** Automata Theory **Max. Marks:** 20

**AKTU Course Code:** KCS-402 **Last Date of Submission:** 4/May/2021

**Note:** All questions are **compulsory**.

**Section-A**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Ques. No.** | **Questions** | **CO** | **Bloom’s**  **level** | **Marks** |
| 1. | What do you mean by ∈-Closure in FA? | 1 | L1 | 1 |
| 2. | Explain the applications and limitations of finite automata. | 1 | L1 | 1 |
| 3. | Give the difference between Mealy and Moore machine. | 1 | L1 | 1 |
| 4. | Define deterministic finite automata. | 1 | L1 | 1 |

**Section-B**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Ques. No.** | **Questions** | **CO** | **Bloom’s**  **level** | **Marks** |
| 5. | Design FA for ternary number divisible by 5. | 1 | L2 | 2 |
| 6. | Design a DFA for languages L containing strings of 0 and 1’s where number of 0’s is not divisible by 3. | 1 | L2 | 2 |
| 7. | Design an NFA for the language containing strings ending with ab or ba. Also convert the obtained NFA into equivalent DFA. | 1 | L3 | 2 |
| 8. | Design a FA to accept the string that always ends with 101. | 1 | L3 | 2 |

**Section-C**

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| **Ques. No.** | **Questions** | **CO** | **Bloom’s**  **level** | **Marks** |
| 9. | Define Deterministic Finite Automata(DFA)and design a DFA that accepts binary numbers whose equivalent decimal number is divisible by 5. | 1 | L3 | 4 |
| 10. | Minimize the automata given below  D:\Lecture Notes\automata\Fig-47.png | 1 | L3 | 4 |

***P.T.O.***

**CO** - Course Outcome

**Bloom’s Levels**

1- Remembering 2-Understanding 3-Applying

4-Analyzing 5-Evaluating 6-Creating

Online Submission Link:

<https://forms.office.com/Pages/ResponsePage.aspx?id=iH1MhNPdS0m49BeImrlUVufKWOlnBY5Bpy0I8vHVaUpUQUdDSkxONFYwQlA3V1JUWENVVkhMNEdGOC4u>