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

**Department of Computer Science & Engineering**

**Assignment Paper, 2020-2021**

**Assignment No.:** I **Semester:** IV

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

**AKTU Course Code:** KCS-402 **Last Date of Submission:** 24/April/2021

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

**Section-A**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Ques. No.** | **Questions** | **CO** | **Bloom’s**  **level** | **Marks** |
| 1. | Define alphabet, string and language. | 1 | L1 | 1 |
| 2. | Define and give the difference between positive closure and Kleene closure. | 1 | L1 | 1 |
| 3. | Define grammar. | 1 | L1 | 1 |
| 4. | Define sentential form. | 1 | L1 | 1 |

**Section-B**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Ques. No.** | **Questions** | **CO** | **Bloom’s**  **level** | **Marks** |
| 5. | Construct grammar for language L = {anbm ! n ≥2, m ≥1} | 1 | L2 | 2 |
| 6. | Identify the language generated by context free grammar S🡪(S)/SS/( ). | 1 | L2 | 2 |
| 7. | Find the language generated by the following grammar  S🡪0SBA/01A, AB🡪BA, 1B🡪11, 1A🡪10, 0A🡪00 | 1 | L3 | 2 |
| 8. | Find the language generated by the following grammar  S🡪1S/0A/0/1, A🡪 1A/1S/1 | 1 | L3 | 2 |

**Section-C**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Ques. No.** | **Questions** | **CO** | **Bloom’s**  **level** | **Marks** |
| 9. | Describe Chomsky hierarchy of languages with proper example. | 1 | L3 | 4 |
| 10. | Design the CFG for the following language:   1. L = {0n1m ! m,n ≥1 and m ≠ n} 2. L = {albmcn ! l, m ≥1 and l+m = n} | 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=iH1MhNPdS0m49BeImrlUVufKWOlnBY5Bpy0I8vHVaUpUMVNOQ0lYVkdDMFhTOEkzUUFDQlNCVDFVVi4u>