**POORNIMA UNIVERSITY, JAIPUR**

**END SEMESTER EXAMINATION, APRIL 2023**

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|  | **3BT6135** | Roll No. | Total Printed Pages: 2 |
| **3BT6135** |  |
| B. Tech. III Year VI Semester (Main/Back) End Semester Examination, April 2023  **(AI)** | |
| **BAI06103 / BAI06104: Natural Language Processing** | | | |

# Time: **3** Hours. Total Marks: **60**

Min. Passing Marks: **21**

*Attempt* ***five*** *questions selecting one question from each Unit. There is internal choice from Unit I to Unit V. Marks of each question or its parts are indicated against each question / parts. Draw neat sketches wherever necessary to illustrate the answer. Assume missing data suitably (if any) and clearly indicate the same in the answer.*

Use of following supporting material is permitted during examination for this subject.

# **1.--------------------------Nil--------------------** **2.------------------Nil-----------------------**

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|  |  | **UNIT-I (CO1)** | **Marks** | | **Bloom Level** |
| **Q.1** | **(a)** | Differentiate between Stemming and lemmatization. | | **(6)** | **Analyze** |
|  |  |  | |  |  |
|  | **(b)** | Sentence 1. “Agra goes to the Poonam”.  Sentence 2. Will you crack open the door? I am getting hot.  Perform all the phases of NLP on these sentences and also specify which phase would reject this sentence and explain it in your own words. | | **(6)** | **Create** |
|  |  |  | |  |  |
|  |  | **OR** | |  |  |
|  |  |  | |  |  |
| **Q.2** | **(a)** | Write down the code of python to remove punctuation by with Regex method and without Regex method. | | **(6)** | **Understand** |
|  |  |  | |  |  |
|  | **(b)** | Explain the Finite state morphology with suitable example. | | **(6)** | **Evaluate** |
|  |  |  | |  |  |
|  |  | **UNIT-II (CO2)** | |  |  |
|  |  |  | |  |  |
| **Q.3** |  | Suppose you have a sentence **“**I eat sushi with chopsticks with you **“**.please mention the various step of Cocke–Younger–Kasami Algorithm needed for parsing. grammar rules are given below  **S ⟶ NP VP**  **NP ⟶ NP PP**  **NP ⟶ sushi**  **NP ⟶ I**  **NP ⟶ chopsticks**  **NP ⟶ you**  **VP ⟶ VP PP**  **VP ⟶ Verb NP**  **Verb ⟶ eat**  **PP ⟶ Prep NP**  **Prep ⟶ with** | | **(12)** | **Evaluate** |
|  |  |  | |  |  |
|  |  | **OR** | |  |  |
|  | |  | |  |  |
| **Q.4** | **(a)** | Explain with example that why always preferable CKY over Top down Approach. | | **(6)** | **Remember** |
|  |  |  | |  |  |
|  | **(b)** | Differentiate between Holonymy and meronymy with example | | **(6)** | **Create** |
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|  |  | **UNIT-III (CO3)** | |  |  |
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| **Q.5** |  | Explain the following approaches with example  (i) Schema-based approach (ii) Corpus-based Approach | | **(6+6)** | **Create** |
|  |  |  | |  |  |
|  |  | **OR** | |  |  |
|  |  |  | |  |  |
| **Q.6** | **(a)** | Explain Document planning and its type in detail. | | **(6)** | **Remember** |
|  |  |  | |  |  |
|  | **(b)** | Write down the Applications of Natural Language Generation | | **(6)** | **Remember** |
|  |  |  | |  |  |
|  |  | **UNIT-IV (CO4)** | |  |  |
|  |  |  | |  |  |
| **Q.7** |  | Explain the term Sampling Size ,Sampling Frame and Population and also identifies all these entities with reference to corpus creation | | **(4+4+4)** | **Analyze** |
|  |  |  | |  |  |
|  |  | **OR** | |  |  |
|  |  |  | |  |  |
| **Q.8** | **(a)** | Explain the term tree banks and what is the process of building Treebank. | | **(6)** | **Analyze** |
|  |  |  | |  |  |
|  | **(b)** | Differentiate Corpus and Corpora. What is the significance of corpus in the field of NLP and also explain the Rules to create a corpus for Manager. | | **(6)** | **Analyze** |
|  |  |  | |  |  |
|  |  | **UNIT V (CO5)** | |  |  |
|  |  |  | |  |  |
| **Q.9** | **(a)** | Write down the difference between Discriminative and Generative Models. | | **(6)** | **Remember** |
|  |  |  | |  |  |
|  | **(b)** | Explain the term sequence prediction. | | **(6)** | **Remember** |
|  |  |  | |  |  |
|  |  | **OR** | |  |  |
|  |  |  | |  |  |
| **Q.10** | **(a)** | Write a short note on maximum likelihood estimation in parameter estimation in linear classification techniques | | **(6)** | **Create** |
|  |  |  | |  |  |
|  | **(b)** | Explain Naive Bayes model for Text classification. | | **(6)** | **Remember** |