**POORNIMA UNIVERSITY, JAIPUR**

**END SEMESTER EXAMINATION, November 2022**

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|  | **4BT7103** | Roll No. | Total Printed Pages: 1 |
| **4BT7103** |  |
| B. Tech. IV Year VII- Semester (Main/Back) End Semester Examination, November 2022  **(AI)** | |
| **BAI07103 : Chat-Bot Development** | | | |

# 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)** | What do you mean by the term bag of words in natural language processing? | **(6)** | **Knowledge** |
|  |  |  |  |  |
|  | **(b)** | Discuss the architecture of Seq-2-Seq model in chatbot development. | **(6)** | **Analyze** |
|  |  | **OR** |  |  |
| **Q.2** |  | A restaurant in Jaipur wants to review the quality of food based on customer feedback which approaches are used for customer sentiment analysis. | **(12)** | **Create** |
|  |  | **UNIT-II (CO2)** |  |  |
| **Q.3** |  | YouTube wants to upload its videos of the comments coming on its channel. Which machine learning algorithms are useful in that type of situation and Why? | **(12)** | **Create** |
|  |  | **OR** |  |  |
| **Q.4** | **(a)** | Expound the terminology Bigram, word2vec in natural language processing. | **(6)** | **Analyze** |
|  |  |  |  |  |
|  | **(b)** | How do we implement Hierarchical softmax in NLP? Discuss. | **(6)** | **Knowledge** |
|  |  | **UNIT-III (CO3)** |  |  |
| **Q.5** | **(a)** | Define the term word analogies in chatbot development. | **(6)** | **Analyze** |
|  |  |  |  |  |
|  | **(b)** | What do you mean by TF-IDF in chatbot development explained with mathematics expressions? | **(6)** | **Analyze** |
|  |  | **OR** |  |  |
| **Q.6** | **(a)** | Define the term word analogies in chatbot development. | **(6)** | **Knowledge** |
|  |  |  |  |  |
|  | **(b)** | Discuss POS tagging in chatbot development with suitable examples. | **(6)** | **Apply** |
|  |  | **UNIT-IV (CO4)** |  |  |
| **Q.7** | **(a)** | Define an approach for implementing GloVe in chatbot development with gradient descent | **(6)** |  |
|  |  |  |  |  |
|  | **(b)** | Explain term alternating least squares in chatbot development. | **(6)** | **Knowledge** |
|  |  | **OR** |  |  |
| **Q.8** | **(a)** | What do you mean by seq-2-seq explain with an example? What do you mean by named entity recognition? Discuss | **(6)** | **Analyze** |
|  |  |  |  |  |
|  | **(b)** | Discuss skip-gram explain with word2vec in chatbot development? What is lexical semantics? | **(6)** | **Analyze** |
|  |  | **UNIT V (CO5)** |  |  |
| **Q.9** | **(a)** | Explain the term loss function for discriminative tagging in machine learning. | **(6)** | **Knowledge** |
|  |  |  |  |  |
|  | **(b)** | What do you mean by named entity recognition? | **(6)** | **Knowledge** |
|  |  | **OR** |  |  |
| **Q.10** | **(a)** | What is lexical semantics? | **(6)** | **Analyze** |
|  |  |  |  |  |
|  | **(b)** | What do you mean by LSTM in natural language processing? Discuss | **(6)** | **Knowledge** |