



B.Tech V Semester Regular/Supplementary Examinations, February 2024
NATURAL LANGUAGE PROCESSING
(CSE (AI& ML))

Maximum Marks: 70

Date: 20.02.2024 Duration: 3 hours

- Note:**
1. This question paper contains two parts A and B.
 2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
 3. Part B consists of 5 Units. Answer any one full question from each unit.
 4. Each question carries 10 marks and may have a, b, c, d as sub questions.

| Part-A | | CO | Bloom Tx |
|--|---|----|----------------|
| All the following questions carry equal marks (10×2M=20 Marks) | | | |
| 1 | What challenges are commonly faced in determining the structure of words? | 1 | L1 |
| 2 | Why is it important to analyze the structure of documents? | 1 | L1 |
| 3 | What is syntax analysis? | 2 | L2 |
| 4 | Define Top-Down parsing. | 2 | L2 |
| 5 | Why are word sense systems important in semantic parsing? | 3 | L2 |
| 6 | How does semantic interpretation help understand text? | 3 | L2 |
| 7 | What is Predicate-Argument Structure in linguistics? | 4 | L3 |
| 8 | Example for Predicate-Argument Structure analysis. | 4 | L3 |
| 9 | Define N-gram models and their purpose. | 5 | L3 |
| 10 | What is the primary role of language modeling in NLP? | 5 | L2 |
| Part-B | | | Bloom Tx level |
| Answer All the following questions. (5×10M=50Marks) | | | |
| 11 | a) What are the structures of a document? [5] b) What are the fundamental components that make up a word? [5] | 1 | L1 |
| OR | | | |
| 12 | Explain types of Morphological Models. [10] | 1 | L2 |
| 13 | a) Explain the basic process of parsing natural language. [5] b) What are the common methods used for representing syntactic structures in natural language? [5] | 2 | L2 |
| OR | | | |
| 14 | What are some classic parsing algorithms used in natural language processing? Discuss. [10] | 2 | L2 |
| 15 | What is semantic parsing? What are some common system paradigms used in semantic parsing? [10] | 3 | L3 |
| OR | | | |
| 16 | ● Explain Lesk Algorithm with example. [10] | 3 | L2 |
| 17 | a) Why are Meaning Representation Systems crucial in natural language processing? [5] | 4 | L3 |

| | | | |
|----|--|---|----|
| | b) How do they differ from other linguistic annotation schemes? [5] | | |
| | OR | | |
| 18 | a) How is Meaning Representation integrated into NLP applications? [5] b) What benefits does it bring to NLP systems? [5] | 4 | L4 |
| 19 | What is language modeling, and how does it play a crucial role in natural language processing (NLP)? [10] | 5 | L3 |
| | OR | | |
| 20 | a) Define N-gram models and explain how they capture the context of words in a sequence. [5] b) What are the types of N-gram models explain with bigram model [5] | 5 | L3 |