



B.Tech V Semester Supplementary Examinations, July 2024

NATURAL LANGUAGE PROCESSING
 (CSE (AI & ML))

Maximum Marks: 70

Date:24.07.2024 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 |
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| All the following questions carry equal marks | | (10×2M=20 Marks) | |
| 1 | What are the basic components of a word? | 1 | L1 |
| 2 | What is a morphological model? | 1 | L1 |
| 3 | What role do tree banks play in a data-driven approach to syntax analysis? | 2 | L2 |
| 4 | How do top-down and bottom-up parsing differ? | 2 | L3 |
| 5 | What is semantic parsing? | 3 | L2 |
| 6 | What role does it play in extracting meaning? | 3 | L2 |
| 7 | What is Predicate-Argument Structure in linguistics? | 4 | L3 |
| 8 | What are some popular software tools used for analyzing Predicate-Argument Structure in text? | 4 | L3 |
| 9 | What is the N-gram models? | 5 | L3 |
| 10 | Name two common metrics used to evaluate language models. | 5 | L2 |
| Part-B | | | |
| Answer All the following questions. | | (5×10M=50Marks) | |
| 11 | What are some common methods used to find the structure of documents? [10] | 1 | L1 |
| OR | | | |
| 12 | How do methods contribute to finding the structure of words in NLP? [10] | 1 | L2 |
| 13 | a) What role do tree banks play in syntax analysis? [5] b) How are tree banks created, and what information do they capture? [5] | 2 | L2 |
| OR | | | |
| 14 | What are some common models or techniques used for parsing? [10] | 2 | L2 |
| 15 | What is semantic parsing? What are some common system paradigms used in semantic parsing? [10] | 3 | L2 |
| OR | | | |
| 16 | a) How do rule-based and machine learning-based approaches differ in semantic parsing systems? [5] | 3 | L3 |

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|----|---|---|----|
| | b) What types of software are commonly used for implementing semantic parsing systems? [5] | | |
| 17 | What is Predicate-Argument Structure in linguistics? Discuss popular tools for Predicate-Argument Structure analysis. [10] | 4 | L3 |
| | 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 | Classify unigram, bigram, and trigram models in NLP? [10] | 5 | L3 |
| | OR | | |
| 20 | a) What is the role of maximum likelihood estimation (MLE) in language modeling? [5] b) Explain two common metrics used to evaluate language models. [5] | 5 | L2 |