

R18

Code No: 156FK

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, March - 2024

NATURAL LANGUAGE PROCESSING

(Common to CSE(AI&ML), CSE(N))

Time: 3 Hours

Max. Marks: 75

Note: i) Question paper consists of Part A, Part B.

ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.

iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART - A

(25 Marks)

- 1.a) Define Natural Language. [2]
- b) What you mean by inverse document frequency? [3]
- c) List the parsing techniques. [2]
- d) What is the need of syntax analysis? [3]
- e) Define semantic parsing? [2]
- f) What is the need of Three Address Code? [3]
- g) What are the different types of arguments that can be associated with a predicate? [2]
- h) Define predicate-argument structure. [3]
- i) What is the need of Cohension? [2]
- j) Write the application area of N-Gram Models. [3]

PART - B

(50 Marks)

- 2.a) What are the applications of automatically identifying document structure?
- b) What are the principles governing the formation of complex words? [5+5]

OR

- 3.a) What are the basic units of word structure?
- b) What are the ethical considerations related to automatically analyzing document structure? [5+5]

- 4.a) What are the applications of syntax analysis in linguistics and computational linguistics?
- b) What are the challenges of parsing ambiguous sentences? [5+5]

OR

- 5.a) What are the computational tools available for Syntax Analysis?
- b) What is TF-IDF? Explain the application area of it. [5+5]

- 6.a) Explain the concept of named entity recognition.
- b) What are the practical applications of semantic parsing in real-world scenarios? [5+5]

OR

- 7.a) What role does context play in semantic parsing?
- b) What are the ethical considerations in semantic parsing? How can semantic parsing be adapted to different domains or languages? [5+5]

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- 8.a) Write short notes on predicate-argument structures found in Natural languages.
- b) Write the predicate-argument structure real-world applications. [5+5]

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- 9.a) What are the syntactic and semantic constraints on predicate-argument structure? [5+5]
- b) What role does predicate-argument structure play in language comprehension and production? [5+5]

- 10.a) Explain the types of language models.
- b) Write the advantages of N-Gram models. [5+5]

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- 11.a) Explain the language model evaluation metrics. [5+5]
- b) Compare and contrast Multilingual and Cross lingual Language Models. [5+5]

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