

CBCS SCHEME



USN

--	--	--	--	--	--	--	--	--	--

21AI643

Sixth Semester B.E./B.Tech. Degree Examination, June/July 2025 Natural Language Processing

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. What is Natural Language Processing? Explain the challenges of NLD. (10 Marks)
- b. List and explain any 5 NLP applications. (10 Marks)

OR

- 2 a. List and briefly explain the various levels of Natural Language Processing. (05 Marks)
- b. List out the modules and components of Government and Binding. Explain any four. (10 Marks)
- c. Explain the n-gram model of Statistical Language models. (05 Marks)

Module-2

- 3 a. For a given text paragraph, explain how do you search for the strings containing email address using regular expressions. (04 Marks)
- b. With a block diagram explain the two steps morphological passes for converting surface form of a word to its underlying lexical form. (06 Marks)
- c. Explain briefly the minimum edit distance with an example. (10 Marks)

OR

- 4 a. What do you mean by Context Free Grammar? Apply the given sentence in terms of a parsing tree along with a bracketed notation.
HENA READS A BOOK (06 Marks)
- b. Briefly explain the CYK algorithm with an example. (08 Marks)
- c. Derive using the top-down, depth-first, left to right manner parsing algorithm on the given sentence.
PAINT THE DOOR (06 Marks)

Module-3

- 5 a. Explain with an example the four patterns to extract the relationship between two entries. (08 Marks)
- b. Give a brief explanation on dependency path kernel for relationship extraction. (08 Marks)
- c. Discuss the knowledge roles for below sentence with the same domain concepts.
(i) The calculated insulating resistance values way is the safe operating area.
(ii) Compared to the last examination, lower values for the insulating resistance were ascertained due to dirtiness at the surface. (04 Marks)

OR

- 6 a. Explain functional overview of in fact system with a neat diagram. (10 Marks)
- b. Explain the architecture used in the task of learning to annotate cases with knowledge roles. (10 Marks)

Module-4

- 7 a. Explain the word matching feedback systems. (08 Marks)
- b. Illustrate the Topic Models (TM) with feedback systems. (04 Marks)
- c. Briefly discuss iSTART system and their modules. (08 Marks)

OR

- 8 a. Explain SVM learning method in sequence model estimation. (10 Marks)
- b. Discuss on the various approaches to analyzing texts. (10 Marks)

Module-5

- 9 a. With a neat diagram explain the design features of information retrieval model. (06 Marks)
- b. By considering an example, provide a detailed discussion on boolean model of classical information system. (06 Marks)
- c. Explain with an example on fuzzy model of information retrieval system. (08 Marks)

OR

- 10 Write a short note on the following lexical resources: (20 Marks)
- a. World Net
- b. Frame Net
- c. Stemmers
