



QP CODE: 25804493



25804493

Reg No : .....

Name : .....

**INTEGRATED M.Sc DEGREE EXAMINATION, OCTOBER 2025**

**Ninth Semester**

INTEGRATED M.Sc COMPUTER SCIENCE-ARTIFICIAL INTELLIGENCE AND MACHINE  
LEARNING

**CORE - ICSA9CR2 - NATURAL LANGUAGE PROCESSING**

2020 ADMISSION ONWARDS

EE3EB129

Time: 3 Hours

Weightage: 30

**Part A (Short Answer Questions)**

*Answer any **eight** questions.*

*Weight 1 each.*

1. What is the primary function of Named Entity Recognition (NER) in NLP?
2. What is word frequency in text analytics?
3. Define pos\_tag( )method.
4. What is Text Classification?
5. Define two methods used for cleaning text data.
6. Define how to count number of unique words in a text.
7. How to index lists in python? Give example?
8. Differentiate NLP and NLU.
9. Convert the following sentence into propositional logic: "If it rains, the ground will be wet."
10. Describe Lemmatization in spaCy with example.

(8×1=8 weightage)

**Part B (Short Essay/Problems)**

*Answer any **six** questions.*

*Weight 2 each.*

11. Explain the various phases of NLP.
12. Explain the differences between structured and semi-structured data with examples.
13. How do deep learning-based approaches like Convolutional Neural Networks (CNNs) or Recurrent Neural Networks (RNNs) perform feature extraction? Discuss how they automatically extract hierarchical features from raw text data.





14. Describe how Principal Component Analysis (PCA) helps in dimensionality reduction.
15. Explain a method to identify and remove highly correlated features in a dataset.
16. What is Natural Language Understanding? Explain in detail with example: a) word Sense Disambiguation  
b) Pronoun Resolution c) Machine Translation
17. What is the purpose of Skolemization in First-Order Logic? Explain how Skolem functions are introduced and provide an example of Skolemization.
18. Explain with examples ,two fundamental methods of NLP for building Chatbots.

(6×2=12 weightage)

### **Part C (Essay Type Questions)**

*Answer any **two** questions.*

*Weight 5 each.*

19. Explain the method of Building Pipelines for NLP Projects with an example.
20. Explain in detail about various control structures in python with example.
21. Examine the role of First-Order Logic in knowledge representation and reasoning within artificial intelligence. How does FOL help AI systems represent and reason about knowledge? Discuss applications such as expert systems, natural language processing, and reasoning about commonsense knowledge.
22. Explain NER and Dependency Parsing in spaCy, in detail with example.

(2×5=10 weightage)

