

## School of Computing Science and Engineering

Master of Technology in Computer Science and Engineering  
Semester End Examination - Jun 2024

Duration : 180 Minutes  
Max Marks : 100

### Sem II - R1PW201B - Natural Language Processing

General Instructions

*Answer to the specific question asked*

*Draw neat, labelled diagrams wherever necessary*

*Approved data hand books are allowed subject to verification by the Invigilator*

- 1) Define Sentiment Analysis in the context of Natural Language Processing. K1(2)
- 2) Explain the challenges of Named Entity Recognition in real-world applications. K2(4)
- 3) Explain the concept of sentiment analysis in Natural Language Processing (NLP). K2(6)
- 4) Illustrate the architecture of a neural machine translation (NMT) model. Explain the components involved and how they work together to translate a sentence from one language to another. K3(9)
- 5) Illustrate the concept of transfer learning in natural language processing (NLP). Explain how pre-trained models are used and fine-tuned for specific tasks. K3(9)
- 6) Examine the use of recurrent neural networks (RNNs) in natural language processing. Discuss the advantages and limitations of RNNs in modeling sequential data. K5(10)
- 7) Analyze the ethical considerations and challenges associated with the use of natural language processing (NLP) technologies. Discuss the potential impacts of bias, privacy violations, and misuse of NLP technologies on individuals and society. K4(12)
- 8) Examine the future trends and developments in natural language processing. Discuss emerging technologies and their potential impact on NLP applications. K5(15)
- 9) Examine the ethical considerations in natural language processing research and applications. Discuss potential biases and fairness issues that may arise and strategies to mitigate them. K5(15)
- 10) Discuss the impact of natural language processing (NLP) on society. Explain how NLP technologies, such as language translation, sentiment analysis, and chatbots, are transforming various industries and everyday life. Provide examples of how NLP is being used in areas such as healthcare, finance, and customer service. K6(18)

