Name: **Enrolment No:**	

UPES

End Semester Examination, May 2025

Course: Natural Language Processing **Semester: II**

Program: M.Tech. - CSE **Time : 03 hrs.**

Course Code: CSAI7006 **Max. Marks: 100**

Instructions: Please attempt according to the time provided and given weightage.

SECTION A
(5Qx4M=20Marks)
Attempt all questions

S. No.		Marks	CO
Q 1	What are the four levels of linguistics in classical NLP and how are they used in processing?	**4**	**CO1**
Q 2	Define Morphology and explain its role in NLP.	**4**	**CO4**
Q 3	Define Cosine similarity and its role in NLP tasks.	**4**	**CO1**
Q 4	What is sentiment analysis and where is it used in real life?	**4**	**CO3**
Q 5	Explain the purpose and structure of a Treebank.	**4**	**CO2**
	SECTION B **(4Qx10M= 40 Marks)**		
Q 6	Explain the Seq2Seq architecture with attention and its application in Neural Machine Translation.	**10**	**CO4**
Q 7	What are sub-word models in NLP? Explain their advantages.	**10**	**CO2**
Q 8	Describe the role and working of GRU and LSTM in context of NLP.	**10**	**CO2**
Q 9	Explain with examples: Document Summarization vs Text Summarization. OR What are the major challenges in Word Sense Disambiguation (WSD) and how are they handled?	**10**	**CO3**
	SECTION-C **(2Qx20M=40 Marks)**		
Q 10	Analyze the architecture and functioning of Transformer-based models like BERT and XLNet. Highlight their differences and real-world applications.	**20**	**CO2**

Q 11	Evaluate the evolution and applications of Question Answering Systems. Compare the approaches used in Amazon Alexa and Google Assistant. OR Compare and contrast Rule-based, Statistical, and Neural Machine Translation methods. Provide practical use cases for each.	**20**	**CO4**