

(2 Hours)

Total Marks: 50

Note:			Marks	Course Outcome	Bloom's Level
<ul style="list-style-type: none">Question number Q1 is compulsoryAttempt any two questions out of Q2 to Q5				CO	BL
Q1	Attempt following questions.				
	a.	What are the different types of ambiguities in Natural Language Processing (NLP)?	[05]	CO1	BL1
	b.	How would you differentiate Inflectional and Derivational Morphology?	[05]	CO2	BL4
	c.	Describe the following lexemes with suitable examples 1. Homonym 2. Synonym 3. Hypernym 4. Polysemy 5. Antonym	[05]	CO3	BL2
	d.	How would you compare Reference Resolution and Reference Phenomena in discourse processing	[05]	CO1	BL4
Q2	a.	Can you explain what Part-of-Speech (POS) tagging is and describe the various techniques used to perform it?	[08]	CO2	BL2
	b.	How would you compare extractive and abstractive summarization in NLP, and which one do you think works better for news articles and research papers?	[07]	CO4	BL3
Q3	a.	Can you explain what a Finite Automaton is and describe its different types with suitable examples to show how they work?	[08]	CO2	BL2
	b.	Consider the following grammar, 1.S->NP VP 5. N → "dog" "cat" 2.VP-> V NP 6. V → "chased" 3.NP-> Det N 4. Det → "the" Derive the sentence "The dog chased the cat." using top-down or bottom-up parsing. Compare Top-down parsing with Bottom-up parsing.	[07]	CO2	BL2
Q4	a.	What are Word Embeddings ? Define and compare Word2Vec and GloVe.	[08]	CO3	BL4
	b.	Can you explain what sentiment analysis is and describe how affective lexicons are used to determine emotions or opinions in text with example?	[07]	CO4	BL2
Q5	a.	Can you explain what Named Entity Recognition (NER) is and describe how it is used to identify entities like people, locations, and organizations in text with examples?	[08]	CO2	BL2
	b.	Can you explain what a Hidden Markov Model (HMM) is and describe how it is applied to tasks like part-of-speech tagging and speech recognition in NLP?	[07]	CO2	BL2