

K. J. Somaiya Institute of Technology, Sion, Mumbai-22
(Autonomous College Affiliated to University of Mumbai)

April – May 2022-23

M. Tech. (Computer Engineering - Artificial Intelligence)-SEM-I

Course Code: **PCEDLC1042** Course Name: **Natural Language Processing**

Duration: 2.5 Hours

Max. Marks: 60

Instructions:

- (1) All questions are compulsory.
- (2) Draw neat diagrams wherever applicable.
- (3) Assume suitable data if required, and state it clearly.

		Max. Marks	CO	BT Level
Q-1	Solve any Six questions out of Eight .	12		
i)	What is Shallow parsing ?	2	CO3	U
ii)	What is morphology ?	2	CO2	U
iii)	Define discourse and pragmatic analysis.	2	CO5	U
iv)	What is Natural language processing? What are the components of NLP?	2	CO1	U
v)	Explain the different types of inferences?	2	CO5	U
vi)	Why is semantic analysis difficult?	2	CO4	U
vii)	What are the ambiguities in Natural Language?	2	CO6	U
viii)	What is word sense disambiguation (WSD)?	2	CO4	U
Q-2	Solve any Four questions out of Six .	16		
i)	Describe shallow parsing and deep parsing.	4	CO3	U
ii)	Explain in brief inflectional morphology & Derivational morphology.	4	CO2	U
iii)	What are the Basic Steps of Natural Language Processing?	4	CO1	U
iv)	Discuss the reference resolution problem in detail.	4	CO5	U
v)	Explain Anaphora Resolution using Hobbs and Canterling Algorithm.	4	CO5	U
vi)	Explain the N-gram model with an example .	4	CO3	U

Q-3	Solve any Two questions out of Three .	16		
i)	Explain regular expression in Natural language processing.	8	CO2	U
ii)	Explain Machine translation systems.	8	CO6	U
iii)	Explain the relation among lexemes and their senses using WordNet.	8	CO3	U
Q-4	Solve any Two questions out of Three .	16		
i)	Explain the Dictionary-based approach for Word Sense Disambiguation (WSD) with a suitable example.	8	CO4	U
ii)	Why is POS tagging hard? Explain possible challenges while performing POS tagging.	8	CO3	U
iii)	What is the role of FSA in morphological analysis? Explain FST in detail.	8	CO2	U