

**K. J. Somaiya Institute of Engineering and Information Technology, Sion, Mumbai-22**  
**(Autonomous College Affiliated to University of Mumbai)**  
**End Semester Exam**  
 Second Half - Winter Examination 2021 (To be conducted in March 2022)  
**M.Tech. (Artificial Intelligence)-SEM-I**  
 Course Code: **1PCEDLC1042** and Course Name: **Natural Language Processing**  
 Duration: 03 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
<b>Qu-1</b>	Solve any <b>Six</b> questions out of <b>Eight</b> .	<b>12</b>		
i)	What is NLP?	2	CO1	Remember
ii)	What is Semantic Ambiguity?	2	CO1	Remember
iii)	Explain why CFG is used to represent natural language in parsing.	2	CO3	Understand
iv)	What is sentiment analysis?	2	CO6	Remember
v)	State the difference between hypernymy and hyponymy and give an example of each.	2	CO4	Remember
vi)	Write FOPC for the following sentences: a) You can fool some of the people all of the time. b) All purple mushrooms are poisonous.	2	CO4	Apply
vii)	What is Discourse structure?	2	CO5	Remember
viii)	Identify the morphological type (Noun phrase, Verb Phrase, Adjective Phrase) of following sentence segments: a) Important to Bill b) Looked up the tree	2	CO2	Understand
<b>Qu-2</b>	Solve any <b>Four</b> questions out of <b>Six</b> .	<b>16</b>		
i)	Describe the following with respect to Information Retrieval: a) Term Frequency b) Inverse Document Frequency	4	CO6	Understand
ii)	Describe open class words and closed class words with examples.	4	CO2	Understand
iii)	Describe augmented grammar in syntactic analysis.	4	CO3	Understand
iv)	List the different level of NLP and explain any two.	4	CO1	Understand

v)	Explain lexicon, lexeme and the different types of relations that hold between Lexemes.	4	CO4	Understand
vi)	Sophia Loren says she will always be grateful to Bono. The actress revealed that the U2 singer helped her calm down when she became scared by a thunderstorm while travelling by a plane. Apply the concept of coreference and give the coreference chains for the above paragraph.	4	CO5	Apply
<b>Qu-3</b>	Solve any <b>Two</b> questions out of <b>Three</b> .	<b>16</b>		
i)	Describe transfer model of Machine Translation. List out its three phases.	8	CO6	Understand
ii)	Describe in detail "Ambiguities in Natural Language Processing".	8	CO1	Understand
iii)	Explain the role of selectional restriction in semantic interpretation.	8	CO4	Understand
<b>Qu-4</b>	Solve any <b>Two</b> questions out of <b>Three</b> .	<b>16</b>		
i)	Explain POS tagging with example.	8	CO3	Understand
ii)	Explain the difference of discourse structure from other reference mechanisms.	8	CO5	Understand
iii)	Write a regular expression to find all instances of the determiner "the".	8	CO2	Apply