A

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

MAR-APR 2024-25
Program: M.Tech Scheme : II
Supp. Examination: FY Semester: I
Course Code: PCEDLC1042 and Course Name: Natural Language Processing

Date of Exam: 03/04/2025 Duration: 2.5 Hours Max. Marks: 60

Instructions:
(1)All questions are compulsory.
(2)Draw neat diagrams wherever applicable.
(3)Assume suitable data, if necessary.

Q. No.	Question	Max. Marks	CO	BT level
Q 1	Solve any **two** questions out of three: (05 marks each)	10		
a)	What is natural language processing (NLP)? List various stages involved in NLP process with suitable example.		CO1	U
b)	What is language model? Explain N-gram language model.		CO2	U
c)	Explain attachment of English fragments. Complete the following fragments. a. In the match. b. Because it was crowed. c. Coming there.		CO3	AP
Q 2	Solve any **two** questions out of three: (05 marks each)	10		
a)	Design a finite transducer with E-insertion orthographic rule that parses from surface level "foxes " to lexical level "Fox+N+PL" using FST		CO2	Ap
b)	Explain selection restriction in semantic interpretation.		CO5	U
c)	Explain Sentiment Analysis system in detail.		CO6	U
Q.3	Solve any **two** questions out of three. (10 marks each)	20		
a)	Demonstrate how N-gram models can be applied to improve spelling correction in natural language processing, and what are the limitations of using N-grams compared to more advanced methods like neural networks?		CO2	AP

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

Nov - Dec 2024
Program: M.Tech Scheme : II
Examination: FY Semester: I
Course Code: PCEDLC1042 and Course Name: Natural Language Processing

Date of Exam: 15/01/2025 Duration: 2.5 Hours Max. Marks: 60

b)	What is POS tagging? Apply POS taaging using HMM on the given corpus and find the probabilities for test sentence. 1. Mary Jane can see Will 2. Spot will see Mary 3. Will Jane spot Mary? 4. Mary will pat Spot Test sentence : Will can spot Mary.		CO3	AP
c)	Explain WSD with block diagram. Illustrate working of Lesk's algorithm with suitable example.		CO4	U
Q.4	Solve any **two** questions out of three. (10 marks each)	20		
a)	Explain elements of lexical semantic analysis 1.Polysemy 2.Homonymy 3.Synonymy 4.Antonymy 5.Hypernomy 6.Antonyny 7. Meronymy		CO4	U
b)	For the sentences given below S1 : Jack and Mary were playing with ball. S2 : It bounced high. a. Prepare parse tree.(4 M) b. Apply Hobb's algorithm to resolve the coreference for "it" list and demonstrate all steps. mention the semantic constraints checked. (6M)		CO5	AP
c)	List different applications of NLP. Explain in detail design of Question Answering system for farmer help Centre.		CO6	AP

****