

Feb-March 2024
(B.Tech) Program: Computer Engineering
Examination: LY Semester: VII

Course Code: CEDLC7034

Course Name: Natural Language Processing

Date of Exam: 26/02/24

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.

		Max. Marks	CO	BT level
Q 1	Solve any six questions out of eight.	12		
i)	Explain the components of NLP.	2	CO1	U
ii)	Describe the structure of finite state transducers in NLP.	2	CO2	U
iii)	Describe the rules for creating noun phrases and verb phrases.	2	CO4	U
iv)	Define Chunking and give examples.	2	CO3	U
v)	Define and give suitable examples of free and bound morphemes.	2	CO2	U
vi)	What are definite and indefinite references? Give suitable examples.	2	CO5	U
vii)	Describe the structure of SynSet in WordNet.	2	CO4	U
viii)	Give suitable examples for Rule based POS tagging.	2	CO3	U
Q.2	Solve any four questions out of six.	16		
i)	Explain the challenges in designing a NLP system.	4	CO1	U
ii)	Construct the parse tree for the following sentence. Write the appropriate rules that you use for phrase construction. "John saw a wild dog in the road"	4	CO3	AP
iii)	With suitable examples explain the different lexical relationships between words.	4	CO4	U
iv)	What is named entity recognition? Identify the entities in following statement using NER. "Mark Zuckerberg is one of the founders of Facebook, a company from the United States".	4	CO3	AP
v)	Compare and contrast Cohesion and Coherence phenomenon in Discourse processing by giving suitable examples.	4	CO5	An

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vi)	Compare Inflectional and derivational Morphology	4	CO2	U
Q.3	Solve any two questions out of three.	16		
i)	Write a detailed note on Machine translation showing the different approaches used in machine translation.	8	CO5	U
ii)	What are the types of ambiguities in NLP? Identify the ambiguities in following statements and comment on it. 1. Ram kissed his son, and so did John 2. Old men and women are moved to hospital 3. Do you know what time is it? 4. Margaret invited Susan for a visit, but she told her she had to go to work.	8	CO1	AP
iii)	Explain the steps in Porter Stemmer algorithm with suitable examples.	8	CO2	U
Q.4	Solve any two questions out of three.	16		
i)	Use n-gram model for following data to find: i. Sentence probability for of the sentence. " John likes green vegetables and cakes" using bigrams. ii. Predict the next word after the sentence: John do not like... (Use trigram or four gram) Use following Dataset: 1. I am sam 2. Sam I am 3. I do not like green vegetables and egg 4. I like pastries and cakes 5. He is John 6. John is like a cool ocean 7. John likes ice-cream	8	CO2	AP
ii)	Explain the concept of Word Sense Disambiguation in detail. Write and explain any suitable algorithm for WSD.	8	CO4	AP
iii)	What is the Anaphora Resolution? Explain the syntactic and semantic constraints used in anaphora resolution.	8	CO5	U
