GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VII (NEW) EXAMINATION – SUMMER 2022

Subject Code:3170723   **Date:14/06/2022**
Subject Name:Natural Language Processing
Time:02:30 PM TO 05:00 PM   **Total Marks: 70**
Instructions:
1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Simple and non-programmable scientific calculators are allowed.**

Q.1	**(a)**	Explain NLP pipeline?	**03**
	(b)	Explain Markov model in brief.	**04**
	(c)	Explain phases of Natural Language Processing in detail.	**07**
Q.2	**(a)**	Explain Unigram Language Model.	**03**
	(b)	Differentiate between Bigram and Trigram.	**04**
	(c)	List down all Applications of Language Modeling and explain any two.	**07**
		OR	
	(c)	With suitable example describe Part-of-Speech Tagging.	**07**
Q.3	**(a)**	Describe skip-gram.	**03**
	(b)	Explain Named Entity Recognition.	**04**
	(c)	Describe Embedding representations for words Lexical Semantics with example.	**07**
		OR	
Q.3	**(a)**	Explain word embedding in brief.	**03**
	(b)	Short note on Comparison of Smoothing Techniques.	**04**
	(c)	Describe nearest neighbor algorithm for Word Sense Disambiguation.	**07**
Q.4	**(a)**	What is Sentiment Mining?	**03**
	(b)	State different algorithms used for relation extraction.	**04**
	(c)	For Information Retrieval how we can use NLP?	**07**
		OR	
Q.4	**(a)**	State different algorithms used for relation extraction.	**03**
	(b)	Short note on Cross-Lingual IR.	**04**
	(c)	Describe phases of IR-based question answering model.	**07**
Q.5	**(a)**	Why we need Machine Translation.	**03**
	(b)	Write a short note on rule-based machine translation.	**04**
	(c)	Explain with example how does parameter learning in SMT performed?	**07**
		OR	
Q.5	**(a)**	Explain Problems of Machine Translation.	**03**
	(b)	Describe Knowledge Based Machine Translation System.	**04**
	(c)	Describe Encoder-decoder architecture with diagram.	**07**

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