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VELAGAPUDI RAMAKRISHNA

SIDDHARTHA ENGINEERING COLLEGE

(AUTONOMOUS)

IV/IV B.Tech. DEGREE EXAMINATION, NOVEMBER - 2023

Seventh Semester

INFORMATION TECHNOLOGY

20IT7404A NATURAL LANGUAGE PROCESSING

Time: 3 hours ***Max. Marks: 70***

Part-A is compulsory

Answer One Question from each Unit of Part - B

Answer to any single question or its part shall be written at one place only

PART-A

10 x 1 = 10M

1.	a.	What is the purpose of regular expressions in NLP?	**(CO1 K1)**
	b.	Name four text normalization techniques.	**(CO1 K1)**
	c.	Define N-gram model in NLP.	**(CO2 K1)**
	d.	Write applications of sentiment analysis.	**(CO2 K1)**
	e.	Difference between open class and closed class of words.	**(CO3 K1)**
	f.	How the lexicon useful in NLP.	**(CO3 K1)**
	g.	Explain Parts of Speech tagging?	**(CO3 K1)**
	h.	What are the ways to represent the knowledge?	**(CO4 K1)**
	i.	Write about word sense disambiguation problem in NLP.	**(CO4 K1)**
	j.	Describe augmented grammar in syntactic analysis.	**(CO4 K1)**

20IT7404A

PART-B

4 x 15 = 60M

UNIT-I

2. a. Explain basic regular expression patterns in detal. **(CO1 K2) 9M**

   b. Find minimum edit distance between two strings "INTENTION", "EXECUTION" with step by step explanation. **(CO1 K1) 6M**

(or)

3. a. Explain text cleansing methods in detail. **(CO1 K2) 9M**

   b. Differentiate Stop word removal and Rare word removal with an example. **(CO1 K4) 6M**

UNIT-II

4. a. Define unigram, bigram, trigram, quadrigram models with suitable examples. **(CO2 K1) 8M**

   b. Demonstrate about extrinsic evaluation and intrinsic evaluation and formulate perplexity evaluation of language model. **(CO2 K2) 7M**

(or)

5. a. Write brief note on advanced issues in language modeling. **(CO2 K1) 5M**

   b. Apply Naïve Bayes classifier to text dataset with step by step process. **(CO2 K1) 10M**

UNIT-III

6. a. Explain HMM parts of speech tagging with an example. **(CO3 K2) 8M**

   b. Develop an example for converting a generic CFG into CNF. **(CO3 K3) 7M**

(or)

7. a. illustrate pseudo code and explain chart parsing algorithm. **(CO3 K2) 10M**

   b. Compare top-down and bottom-up parsing. **(CO3 K4) 5M**

UNIT-IV

8. a. Examine various atomic elements of first order logic. **(CO4 K2) 8M**

   b. Define the relationship between event and time. And explain Reichenbach's approach with an example. **(CO4 K1) 7M**

(or)

9. a. Discover in detail about relations between senses. **(CO4 K3) 8M**

   b. Summarize description logics with suitable examples. **(CO4 K1) 7M**

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