Velagapudi Ramakrishna Siddhartha Engineering College::Vijayawada
(Autonomous)

VR20

IV /IV B Tech Degree Examinations(November/2023)

Seventh Semester

Department of Information Technology

20IT7404A – NATURAL LANGUAGE PROCESSING

Time: 3Hrs	**MODEL QUESTION PAPER**	Max Marks:70

Part – A is Compulsory
Answer one (01) question from each unit of Part – B
Answers to any single question or its part shall be written at one place only

Cognitive Levels(K): K1-Remember;K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create

Q. No		Question	Marks	Course Outcome	Cog. Level
Part - A			**10X1=10M**		
1	a	Write a RE to find the English article "the".	1	CO1	K2
	b	What is meant by Word Normalization?	1	CO1	K1
	c	Write a formula to calculate Perplexity?	1	CO2	K1
	d	Define Naive Bayes model?	1	CO2	K1
	e	Draw the parse tree for 'a flight'	1	CO3	K2
	f	Define Treebank?	1	CO3	K1
	g	What is the task of Named Entity Recognition?	1	CO3	K1
	h	Define λ-reduction?	1	CO4	K1
	I	List the pairs of words for hyponym.	1	CO4	K1
	j	How to represent the subsumption relation between C and D.	1	CO4	K2
Part - B					**4X15 =60M**
UNIT - I					
2	a	Compute the minimum edit distance between intention and execution using the minimum edit distance algorithm.	8	CO1	K4
	b	How Text wrangling and Cleansing are performed by using NLTK.	7	CO1	K3
(OR)					
3	a	Explain how the Stop word removal and Rare word removal are performed using NLTK with examples.	7	CO1	K3
	b	Construct a regular expression for the following languages i) The set of all alphabetic strings. ii) The set of all lowercase alphabetic strings ending in a 'b'. iii) The set of all strings with two consecutive repeated words. iv) The set of all strings from the alphabet a,b such that each a is immediately preceded and immediately followed by a 'b'.	8	CO1	K4
UNIT - II					
4	a	Write a short notes on how to evaluate language models	8	CO2	K3
	b	Explain with an example on training and testing the naive Bayes with add-one smoothing	7	CO2	K2
(OR)					
5	a	Illustrate Laplace smoothing with an example	8	CO2	K3
	b	Discuss Naive Bayes Classifiers?	7	CO2	K2
UNIT - III					
6	a	Identify the categories of English word classes and explain in detail.	8	CO3	K2
	b	Parse the sentence "Book the flight through Houston" using CKY algorithm	7	CO3	K4
(OR)					
7	a	Describe Hidden markov model with suitable example	7	CO3	K2
	b	Construct suitable example for grammar equivalence and normal form.	8	CO3	K3
UNIT – IV					

8	a	Discuss about modus ponens and explain how it is used in forward chaining?	7	CO4	K2
	b	Discuss about word senses and relations between word Senses.	8	CO4	K2
(OR)					
9	a	Write a short notes on the semantics of First-Order Logic	8	CO4	K2
	b	Illustrate Description Logics with suitable examples	7	CO4	K4