CBCS SCHEME - Make-Up Exam

USN | | | | | | | | | |

BAI601

Sixth Semester B.E./B.Tech. Degree Examination, June/July 2025
Natural Language Processing

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Briefly explain various levels of natural language processing.	7	L2	CO1
	b.	Explain GB Theory in detail.	7	L2	CO1
	c.	Find the probability of the test sentence P(they play in the big garden) in the following training set using bi-gram model. "There is a big garden" "Children Play inside beautiful garden" "They play inside beautiful garden".	6	L2	CO1
		OR			
Q.2	a.	Explain X-bar theory with example.	7	L2	CO1
	b.	Describe C-structure and f-structure for the sentence. 'She saw stars' using the CFG rules as below : S → NP VP VP →V {NP} {NP} PP* {S'} PP → P NP NP → Det N {PP} S' → Comp S	7	L2	CO1
	c.	Describe Paninion Framework for Indian languages.	6	L2	CO1
		Module – 2			
Q.3	a.	Describe DFA and NFA. Mention the properties of finite Automation.	7	L2	CO2
	b.	Explain CYK algorithm in detail.	7	L2	CO2
	c.	Explain the minimum Edit distance algorithm and compute the minimum edit distance between PAECFLU and PEACEFUL.	6	L2	CO2
		OR			
Q.4	a.	What is POS Tagging? Explain rule based taggers and hybrid tagger.	7	L2	CO2
	b.	Explain early parsing algorithm in detail.	7	L2	CO2
	c.	List out the disadvantages of probabilistic context free grammer.	6	L2	CO2
		Module – 3			
Q.5	a.	In detail explain Navie Bayes classifiers.	10	L2	CO3
	b.	How to optimize sentiment analysis.	10	L2	CO3
		OR			
Q.6	a.	Write the Naive Bayes algorithm and explain how to train the Naïve Bayes classifier.	10	L2	CO3
	b.	How to use Naïve Bayes for text classification. Explain in detail.	10	L2	CO3

		Module – 4			
Q.7	a.	What are the Design features of information retrieval system? Explain in detail.	10	L2	CO4
	b.	Explain different alternative models of IR.	10	L2	CO4
		OR			
Q.8	a.	Explain part of Speech Tagger and various numbers of part of speech taggers.	10	L2	CO4
	b.	Explain FrameNet and its applications.	10	L2	CO4
		Module – 5			
Q.9	a.	Explain Language Divergence and Typology in detail.	10	L2	CO5
	b.	What is the standard architecture for Machine Translation (MT)? Explain.	10	L2	CO5
		OR			
Q.10	a.	Explain Decoding in MT, and also show the probability of generating each token form the state.	10	L2	CO5
	b.	Explain how languages are translated in low-resource situations.	10	L2	CO5

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