Exam.Code:0917
Sub. Code: 33434

2076
B.E. (Computer Science and Engineering)
Fifth Semester
CS-501: Natural Language Processing

Time allowed: 3 Hours **Max. Marks: 50**

NOTE: ***Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Part.***

x-x-x

1	i) What is limitation of one-hot encoded vectors?	(1)
	ii) Briefly explain how PP attachment ambiguity can be resolved using selectional restrictions in sentence "Stolen painting found by tree".	(1)
	iii) Briefly explain importance of Unification Grammars in natural language processing.	(1)
	iv) What is Morphological Analysis?	(1)
	v) How n-gram taggers are used for part of speech tagging of words?	(1)
	vi) What is importance of Vector Semantics in natural language processing?	(1)
	vii) How feature structures can be defined using Directed Acyclic Graphs (DAGs) for grammars with features?	(1)
	viii) What is Cross-Lingual Information Retrieval?	(1)
	ix) Briefly explain difference between Knowledge Graph and Semantic Network.	(1)
	x) What is coreference resolution?	(1)
	PART-A	
2	a) Explain different lexical and semantic relations in WordNet.	(5)
	b) Explain fastText word embedding with Continuous Bag of Words (CBOW).	(5)
3	a) Explain difference between Pragmatic Knowledge and Discourse Knowledge with help of examples.	(5)
	b) Explain different steps in building knowledge graph from text with example.	(5)
4	a) Explain importance of noun phrase chunking in natural language processing.	(5)
	b) Explain difference between Stemming and Lemmatization.	(5)
	PART-B	
5	a) Explain Lesk's algorithm for resolving ambiguous words with help of example.	(5)
	b) Write Top-down depth first parse of sentence "The old man cried" along with current state and backup states in each step.	(5)
6	a) How logical forms of sentences are used to represent their semantic structures?	(5)
	b) Explain need of discourse structure with help of example.	(5)
7	a) What is machine translation? Explain different steps of direct machine translation.	(5)
	b) Explain different steps of k-mean clustering algorithm for document clustering.	(5)

x-x-x