B.E. (Computer Technology) Seventh Semester (C.B.S.)

Elective – II : Natural Language Processing

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Notes : 1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Solve Question 11 OR Questions No. 12.
8. Due credit will be given to neatness and adequate dimensions.
9. Assume suitable data wherever necessary.
10. Illustrate your answers whenever necessary with the help of neat sketches.

1.	a)	List and explain the key issues in Natural language processing.	**7**
	b)	Explain various stages of Natural language processing.	**7**

OR

2.	a)	What are different NLP applications areas of NLP? Explain.	**7**
	b)	Explain the problems of Ambiguity in natural language processing.	**7**

3.	a)	List various language models. Discuss Hidden Markov models with example.	**7**
	b)	Consider the following sentence, "I went to temple for worshipping the God". Give the output of POS Tagger for this sentence.	**6**

OR

4.	a)	What is sequence labelling? Why it is needed? Explain with example.	**7**
	b)	Explain different parameters for evaluating language models.	**6**

5.	a)	Write short notes on. 1) Statistical parsing. 2) Probabilistic CFGs.	**6**
	b)	Explain grammar formalisms and tree Banks.	**7**

OR

6.	a)	Discuss lexicalised PCFGs.	**6**
	b)	Explain the process of efficient parsing of context-free grammars (CFGs).	**7**

7.	a)	What is semantic parsing? Explain how to achieve it?	**7**
	b)	Discuss word-sense disambiguation by giving suitable examples.	**6**

OR

8.	a)	What is semantic Role Labelling? Explain with example.	**7**
	b)	Discuss lexical semantics in semantic Analysis.	**6**

9.	a)	What is sentiment Analysis? Explain the application areas of sentiment analysis.	**7**
	b)	How to achieve automatic summarization in NLP? Explain.	**6**

<div align="center">**OR**</div>

10.	a)	What is Named Entity Recognition? Explain its significance with respect to information Extraction.	**7**
	b)	How to do subjectivity analysis? Explain.	**6**
11.	a)	What are the basic issues in Machine Translation? Explain.	**7**
	b)	How to do machine translation for synchronous grammar? Explain.	**7**

<div align="center">**OR**</div>

12.	a)	Write short notes on:	**14**

      i)   Phrase based translation.
      ii)   Statistical translation.
      iii) Rule based Machine translation.
      iv) Example based machine translation.

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