Reg No.:	Name:

## APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

## SIXTH SEMESTER B.TECH DEGREE EXAMINATION, APRIL 2018

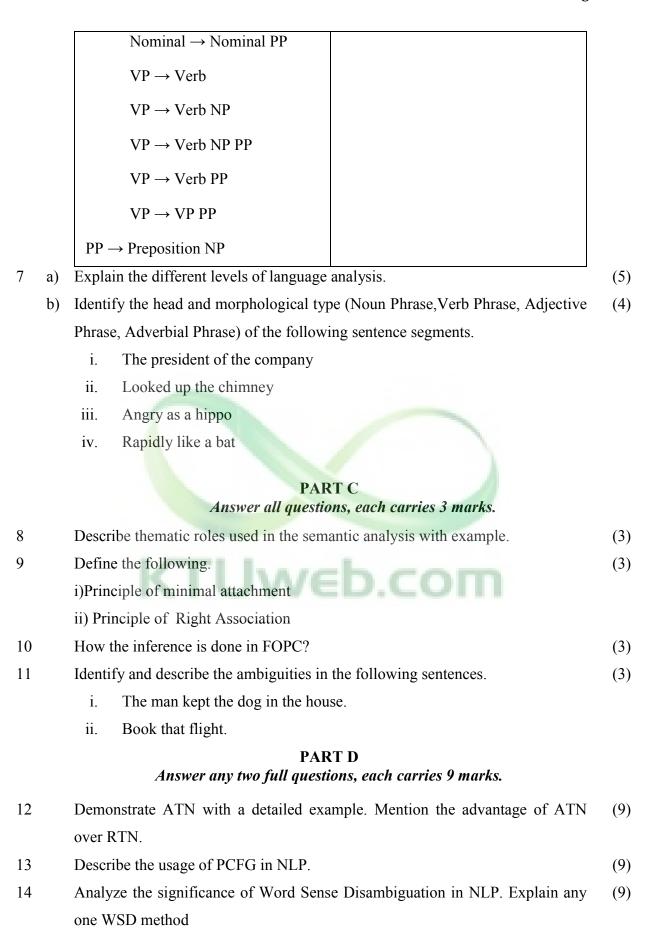
**Course Code: CS366** 

Course Name: NATURAL LANGUAGE PROCESSING					
Max. Marks: 100 Duration: 3 Hours					
		PART A  Answer all questions, each carries 3 marks.	Marks		
1		What is Natural Language Processing? Discuss with some applications.	(3)		
2		Analyze the usage of feature structures in NLP.	(3)		
3		State the difference between homonymy and polysemy and give an example of	(3)		
		each			
4		What is meant by the semantics of a natural language, and how this differs from	(3)		
		the pragmatics?			
			()		
		PART B  Answer any two full questions, each carries 9 marks.			
5		Design a finite state transducer with E-insertion orthographic rule that parses from surface level "foxes" to lexical level "fox+N+PL" using FST.	(9)		
6	a)	Differentiate between top-down and bottom-up parsing.	(3)		
	b)	Given the following CFG grammar from ATIS System, USA. Perform syntactic analysis of the following sentence using any of the parsing method.	(6)		

"Book the flight through Houston."

$S \rightarrow NP VP$	$Det \rightarrow that \mid this \mid a \mid the$
$S \rightarrow Aux NP VP$	Noun → book   man   flight
$S \rightarrow VP$	$Verb \rightarrow book \mid include \mid$
$NP \rightarrow Pronoun$	prefer   man
NP → Proper-Noun	Pronoun $\rightarrow$ I   she   me
NP → Det Nominal	Proper-Noun → Houston   TWA
Nominal → Noun	Aux → does
Nominal → Nominal Noun	Preposition → from   to   through

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## **PART E**

	Answer any four full questions, each carries 10 marks.	
15	Analyse how statistical methods can be used in machine translation	(10)

Explain the architecture of an Information Retrieval system with a neat (10) diagram.

- Explain the process of multi-document summarization. (10)
- Describe Text Coherence. Discuss the significance of Text Coherence in (10)

  Discourse Segmentation
- Write the FOPC representation for following sentences (10)
  - i) All vegetarian restaurants serve vegetarian food.
  - ii) I arrived in New York.
  - iii)I ate a vegetable fried rice from Indian Coffee house.
  - iv) There is restaurant near Delhi which serves Italian food.
- Describe the different components of a typical conversational agent. (10)

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