

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA - SEMESTER-V EXAMINATION – WINTER - 2017

Subject Code:2650014**Date:30/11/2017****Subject Name: Language Processing (LP)****Time:10:30 AM TO 01:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) What is natural language processing (NLP)? Explain applications of NLP in brief. **07**
 (b) Explain Syntax, Semantics & Pragmatics. **07**
- Q.2** (a) What is ambiguity in language processing? Discuss how to resolve the ambiguity. **07**
 (b) Natural Language Understanding requires a capability to represent and reason about knowledge of the word? Justify? **07**
- OR**
- (b) Describe fore-tracking parser & Backtracking Parser? **07**
- Q.3** (a) How the natural language processing systems are evaluated? Explain. **07**
 (b) Draw the DFA for the following: **07**
1. Strings which starts with 'a*' or 'b*' and ends with 'abb'
 2. String with same no. of occurrences of letter 'a', followed by letter 'b' and followed by 'c'.
- OR**
- Q.3** (a) Write an algorithm for converting an arbitrary context-free grammar into Chomsky normal form. Explain it with a suitable example. **07**
 (b) Draw FSA to recognize sheep talks. **07**
- Q.4** (a) Describe the following with suitable example: **07**
 (a) Probabilistic Models
 (b) N-Grams
 (b) Explain various Context-Free Rules & Trees and also Explain about Sentence-Level Constructions. **07**
- OR**
- Q.4** (a) Describe the following with suitable example: **07**
 (a) English Word Classes
 (b) POS Tagging
 (b) Explain 1) Sentence-Level Construction, 2) Agreement in context-free grammar. **07**
- Q.5** (a) What is feature structure? Explain unification feature structure with example **07**
 (b) Define the term representing meaning (RM). Explain categories, event, representing time linguistically relevant concept in RM. **07**
- OR**
- Q.5** (a) Explain the concept of verifiability, unambiguous Representation, canonical form and Inference in RM. **07**
 (b) Explain First-order predicate calculus (FOPC) in detail. **07**
