

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA - SEMESTER- V • EXAMINATION – SUMMER-2018

Subject Code: 2650014
Date: 09/05/18
Subject Name: Language Processing
Time: 10:30am to 1:00pm
Total Marks: 70
Instructions:

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

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|-----|----------------------------------------------------------------------------------------------------------------------------------------|----|
| Q.1 | (a) Define NLP. Explain application of NLP. | 07 |
| | (b) 1) Explain syntax, semantic and pragmatics. | 07 |
| Q.2 | (a) What is ambiguity in language processing? Discuss how to resolve the ambiguity. | 07 |
| | (b) Explain in detail fore-tracking parser & Backtracking Parser. | 07 |
| | OR | |
| | (b) Natural Language Understanding requires a capability to represent and reason about knowledge of the word? Justify? | 07 |
| Q.3 | (a) 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'. | |
| | (b) Draw FSA to recognize sheep talks. | 07 |
| | 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) How the natural language processing systems are evaluated? Explain. | 07 |
| Q.4 | (a) Give an algorithm for pronoun resolution and explain it with an example | 07 |
| | (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) Reference resolution. | |
| | (b) Elements of a language. | |
| | (b) Explain 1) Sentence-Level Construction, 2) Agreement in context-free grammar. | 07 |
| Q.5 | (a) Explain the concept of verifiability, unambiguous Representation, canonical form and Inference in RM. | 07 |
| | (b) Explain Semantic Analysis & Lexical Semantics? | 07 |
| | OR | |
| Q.5 | (a) Explain First-order predicate calculus (FOPC) in detail. | 07 |
| | (b) What is feature structure? Explain unification feature structure with example | 07 |