Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA - SEMESTER– V • EXAMINATION – WINTER 2016

Subject Code: 2650014 Date:28 /11/ 2016

Subject Name: Language Processing

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)** Consider a domain where the word coffee can refer to the following concepts in a knowledge-base: a caffeinated or decaffeinated beverage, ground coffee used to make either kind of beverage, and the beans themselves. Give arguments as to which of the following uses of coffee are ambiguous and which are vague. **07**

a. I've had my coffee for today.
b. Buy some coffee on your way home.
c. Please grind some more coffee.

(b) Describes a set of semantic attachments for a small fragment of English **07**

Q.2 **(a)** Collect three definitions of ordinary non-technical English words from a dictionary of your choice that you feel are flawed in some way. Explain the nature of the flaw and how it might be remedied. **07**

(b) Write a short note on Probabilistic Models. **07**

OR

(b) Explain the Finite-State Morphological Parsing with example. **07**

Q.3 **(a)** How to Compute the minimum edit distances with example. **07**

(b) Explain the N-grams for spelling and pronunciation. **07**

OR

Q.3 **(a)** Write a short note on Finite-state Parsing methods in detail. **07**

(b) Consider the following examples. **07**

The sheep are baaaaing.
The sheep is baaaaing.

Create appropriate lexical entries for the words the, sheep, and baaaaing. Show that your entries permit the correct assignment of a value to the NUMBER feature for the subjects of these examples, as well as their various parts.

Q.4 **(a)** Explain the Finite-State Automata in detail. **07**

(b) Give a set of facts and inferences necessary to prove the following assertions: **07**

a. McDonalds is not a vegetarian restaurant.
b. Some vegetarians can eat at McDonalds.

Don't just place these facts in your knowledge-base. Show that they can be inferred from some more general facts about vegetarians and Mc-Donald's

OR

Q.4 **(a)** Write down short note on Syntax-Driven semantic analysis. **07**

(b) Write down the algorithm for deterministic recognition of FSAs. **07**

Q.5	**(a)**	Write short note on Morphological Parsing with Finite-State Transducers.	**07**
	(b)	Write a short note on WordNet.	**07**

OR

Q.5	**(a)**	Write down the algorithm on an Inference based resolution.	**07**
	(b)	Explain the Reference resolution in detail.	**07**

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