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SEVENTH SEMESTER B.TECH DEGREE EXAMINATION, OCTOBER 2012

IT 09 702 – NATURAL LANGUAGE PROCESSING AND KNOWLEDGE BASED SYSTEMS
(2009 Admission)

Time : Three Hours   Maximum : 70 Marks

PART A

Answer all Questions   (5 X 2 = 10)

I)

   a) What is bidirectional grammar?
   b) Write the differences between top down and bottom up parsers
   c) What are augmented Transition Networks?
   d) Express the following using FOPL

         Fido is a dog if it is a dog and is well fed.

   e) List any 2 exhaustive search techniques. Why are they called so?

PART B

Answer any 4 Questions   (4 X 5 = 20)

II)

   a) Explain the different forms of knowledge relevant for natural language understanding.
   b) Write the algorithm for top down parsing
   c) How will you build a deterministic parser?
   d) How can knowledge be represented using Semantic networks. Illustrate with an example
   e) Illustrate breadth First Searching Technique with an example
   f) Explain the different black board models.

PART C

Answer the following   (4 X 10 = 40)

III)

   a) Explain parsing algorithm for a shift reduce parser with an example

                                    (OR)

   b) "Parsing is a special case of a search problem" Justify this statement

IV)

   a) Discover all of the possible meanings of the following sentences by giving a paraphrase
       of each interpretation. For each sentence, identify whether the different meanings arise
       from structural ambiguity, semantic ambiguity or pragmatic ambiguity.

- Time flies like an arrow
- He drew one card
- Mr.Quankee was charged for illegal alien recruitment

<div align="center">(OR)</div>

b) Explain the types of Natural Language Processing Systems.

V)

a) Find the most general unifier(mgu) for the following clauses or explain why they do not unify. (x,y,z are variables)
- P(f(x),y), P(z, g(z))
- P(f(x, x),A), P(f(y, f(y,A)),A)
- P(f(A),x), P(x,A)

<div align="center">(OR)</div>

b) Write the script for "going to an Internet Café "

VI)

a) Write the algorithm for Best First Search and trace the algorithm with an example.

<div align="center">(OR)</div>

b) What is Planning? How is it achieved in Artificial Systems?