## [5154]- 703
## B.E. (I.T.)
## Natural Language Processing
## (2012 Pattern) (Semester - I)(Elective - II) (End Sem.) (414457 E)

*Time :2½ Hours]*                    *[Max. Marks :70*

*Instructions to the candidates:*

1) *Solve any 1 out of Q1 or Q2 and any 1 out of Q3 or Q4 and*
2) *Solve any 1 out of Q5 or Q6 and any 1 out of Q7 or Q8 and any 1 out of Q9 or Q10.*
3) *Draw neat diagrams and assume suitable data wherever necessary.*
4) *Figures to the right indicate full marks.*

**Q1) a)** Explain with an example semantic and pragmatic level of language understanding in natural language processing. **[6]**

    **b)** State natural language processing system evaluation methods? **[4]**

**OR**

**Q2) a)** State and explain applications of Natural Language Processing. **[6]**

    **b)** Which are elements of noun phrases? Explain with appropriate example. **[4]**

**Q3) a)** Describe the Person and Number features in natural language processing. **[6]**

    **b)** Classify following sentences **[4]**

       i)    Large have green nose        ii)    I apple eat

       For each of the following explain:

       1)    Syntactically correct or not,    2)    Semantically correct or not

**OR**

**Q4) a)** Describe bottom-up chart parsing algorithm with example. **[6]**

    **b)** Explain definite clause grammar. **[4]**

*Q5)* a)   Explain human preferences in encoding uncertainty during parsing   **[8]**

   b)   Describe estimating probabilities for part of speech tagging.   **[8]**

<center>OR</center>

*Q6)* a)   Describe probabilistic context-free grammar with example.   **[8]**

   b)   Describe a simple context dependent best first parser.   **[8]**

*Q7)* a)   Describe  lexical resource wordnet used in natural language processing.**[8]**

   b)   Describe semantic web ontology and its applications?   **[8]**

<center>OR</center>

*Q8)* a)   Write a short note on description logic.   **[8]**

   b)   Explain word senses and ambiguity in natural language processing.   **[8]**

*Q9)* a)   Describe automatic machine translation and metric used for its evaluation.
      **[9]**

   b)   Explain sentiment analysis with an example.   **[9]**

<center>OR</center>

*Q10)*a)   How is natural language processing useful in automatic speech processing.
      **[9]**

   b)   State use of natural language processing in automatic text summarization.
      **[9]**

<center>❄❄❄❄</center>