

B.TECH.**THEORY EXAMINATION (SEM–VIII) 2016-17****NATURAL LANGUAGE PROCESSING****Time : 3 Hours****Max. Marks : 100****Note : Be precise in your answer. In case of numerical problem assume data wherever not provided.****SECTION-A****1 Explain the following:****(10×2=20)**

- a) Issues and problems in NLP
- b) Lexicon
- c) Advantages of speech understanding system
- d) Left associative grammars
- e) Best first parsing
- f) Scope of ambiguity in natural languages
- g) Differentiate syntax and semantics
- h) Probabilistic context-free grammars
- i) Stochastic Part-of-Speech tagging
- j) Elements of a language

SECTION-B**2 Attempt any five of the following:****(10×5=50)**

- a) How the natural language processing systems are evaluated? Explain.
- b) What are the differences between the natural language processing and natural language understanding?
- c) What is the need of NLP system? Why is it difficult to process the natural languages?
- d) What are the issues in parsing? Describe various techniques used for parsing with suitable example.
- e) What are the different levels in language analysis? Explain with examples.
- f) Explain in detail about the organization of NLP systems.
- g) What are the different ways in which a speech dialogue system can reduce the number of errors made because of incorrect speech recognition?
- h) How the man-machine interface is designed using NLP techniques? Explain with example.

SECTION-C**Attempt any two of the following:****(15×2=30)**

- 3. How the knowledge is represented using semantic networks? Also explain how information is deduced from semantic networks.
- 4. Give an example of an NLP system or approach that only knows about individual words (not about their context). Explain what knowledge of words it needs and given an overview of how it works. Give examples to illustrate your explanation.
- 5. Write an algorithm for converting an arbitrary context-free grammar into Chomsky normal form. Explain it with suitable examples.