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M.C.A. 3rd Semester (MCA2 Year Programme)
w.e.f. 2021-2022, Examination, December-2022
NATURAL LANGUAGE PROCESSING AND SPEECH
RECOGNITION (Elective II (iii))

Paper-21MCA23DB2

Time allowed : 3 hours]

[Maximum marks : 80

Note: Attempt five questions in all. Question No. 1 is compulsory. In addition to compulsory question, attempt four more questions selecting one question from each unit.

1. Compulsory Question:

- (a) Elaborate five phases of NLP.
- (b) What are advantages of automata?
- (c) What is minimum edit distance?
- (d) What is prosody in TTS?
- (e) Define human speech recognition.
- (f) What is the use of symbol table in context-free grammar?
- (g) Discuss the principles of compositionality in semantic.
- (h) Where is matrix factorization used?

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[P.T.O.]

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Unit-I

2. What is lexicon? How lexicon free finite state transducers processing is done?
3. How terms are extracted from token? Explain the concept in context of raw text extraction and tokenization.

Unit-II

4. How probabilistic models are used in NLP? Explain the concept using Bayesian method for spelling.
5. What is language model? How language models work? Discuss the types and challenges associated with language models.

Unit-III

6. What is tagging? Explain stochastic part-of-speech tagging and transformation based tagging with appropriate example.
7. Explain rules and tree formation for context free grammar. How sentence level construction is specified? Discuss.

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Unit-IV

8. What is Lexicalized PCFG? Describe how the parameters of lexicalized PCFG can be estimated? Discuss with suitable example.
9. How recurrent neural network can be used in text sequence modeling? Explain.

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