

67108-N

**M.C.A. 3rd Semester (MCA 2 Year Programme)
w.e.f. 2021-2022 Examination, November-2023
NATURAL LANGUAGE PROCESSING & SPEECH
RECOGNITION ELECTIVE-II (ii)**

Paper-21MCA23DB2

Time allowed : 3 hours]

[Maximum marks : 80

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

1. Compulsory question:

- (a) What is hardness of NLP in context of ambiguity?
- (b) Write down the steps to convert regular expression to finite automata.
- (c) What is latent Dirichlet allocation?
- (d) Why N-gram models are used?
- (e) What is Stochastic part-of-speech tagging?
- (f) How does a CFG work?
- (g) What is compositionality?
- (h) How parsing is considered as search?

Unit-I

2. What is morphology? Explain Finite state morphological parsing.

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3. Why NLP is used? Explain NLP tasks in syntax, semantics and pragmatics.

Unit-II

4. How probabilistic latent semantic are analyzed? Discuss.
5. Explain how non negative factorization is done?

Unit-III

6. What is acoustic processing of speech and how acoustic probabilities can be computed?
7. How a speech recognizer can be trained? Also discuss waveform generation for speech synthesis.

Unit-IV

8. What is the use of feature structure? Discuss unification of feature structures and how unification is implemented?
9. How is it specified that a language is regular or not? Justify the answer with an appropriate example.