

Time: 3 Hours

Max. Marks: 80

**Note: Q.1 is compulsory.**

**Attempt any three questions out of remaining five questions.**

**Q.1**

**20 marks**

- A. Differentiate between inflectional and derivational morphology.
- B. Illustrate with suitable example different levels of NLP.
- C. Identify the morphological type (Noun phrase, Verb Phrase, Adjective Phrase) of following sentence segments.
  - 1. that happy puppy
  - 2. the brightest
  - 3. leave Boston in the morning
  - 4. the building on the corner
  - 5. a cheap restaurant
- D. Explain Regular Expression.

**Q.2**

**20 marks**

- A. Explain lexicon, lexeme and the different types of relations that hold between lexemes.
- B. Illustrate Parts-of-speech tagging and explain different categories of POS tagging.

**Q.3**

**20 marks**

- A. What is morphological parsing? Explain FST with example.
- B. Explain Text Classification in detail.

**Q.4**

**20 marks**

- A. Describe N-gram language model. List the problems associated with N-gram model.
- B. Define the term sentiment analysis. Explain Aspect based sentiment analysis in details.

**Q.5**

**20 marks**

- A. Describe Hidden Markov Model (HMM).
- B. Define Text Classification and explain its types.

**Q.6 Write Short note on following**

**20 Marks**

- A. Dictionary based approach of WSD
  - B. Parsing
  - C. Lemmatization
  - D. Ambiguities
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