

Total Marks: 80

Duration: 3 Hrs

Note: 1) Question No.1 is compulsory.

2) Attempt any three questions out of the remaining five questions.

3) Figures to the right indicate full marks.

- Q. 1 a) What is morphology? Why do we need to do Morphological Analysis? Explain derivational & inflectional morphology in detail with suitable examples. 10
- b) What is Natural language processing (NLP)? Discuss various stages involved in NLP process with suitable example. 10
- Q. 2 a) Explains with suitable examples following relationships between word meanings: 10  
1) Homonymy 2) Polysemy 3) Synonymy 4) Antonymy  
5) Hypernymy 6) Hyponymy 7) Meronymy
- b) Explain CFG with suitable example. Discuss following potential problems in CFG such as 1) Agreement 2) Sub categorization 3) Movement 10
- Q. 3 a) What is semantic analysis? Why semantic analysis is difficult? Explain various approaches to perform semantic analysis. 10
- b) What do you mean by word sense disambiguation (WSD)? Discuss dictionary based approach for WSD. 10
- Q. 4 a) What is parsing? Explain Top-down & Bottom-up approach of parsing with suitable example. 10
- b) What is language model? Write a note on N-Gram language model. 10
- Q. 5 a) What is stemming. Explain Porter's stemming algorithm with suitable examples. 10
- b) Discuss various approaches to perform POS tagging. 10
- Q. 6 Write a note on : ( any 2) 20
- a) Sentiment Analysis.
- b) Text summarization.
- c) Wordnet.
- d) Information Retrieval

15  
40  
55