

Duration: 3 Hrs

Total Marks: 80

- Note: 1) Question No.1 is compulsory.  
2) Attempt any three questions out of the remaining five.  
3) Figures to the right indicate full marks.

- Q. 1 a) What is Natural language processing (NLP)? Discuss various stages involved in NLP process with suitable example. 10  
b) Explain derivational & inflectional morphology in detail with suitable examples. 10
- Q. 2 a) What is parsing? Explain Top-down & Bottom-up approach of parsing with suitable example. 10  
b) Discuss various approaches to perform Part-Of-Speech (POS) tagging. 10
- Q. 3 a) What is language model? Write a note on N-Gram language model. 10  
b) Explain CFG with suitable example. Discuss following potential problems in CFG such as :  
1) Agreement 2) Sub categorization 3) Movement.. 10
- Q. 4 a) Define discourse & pragmatic analysis. Discuss reference resolution problem in detail. 10  
b) What is the role of FSA in Morphological analysis? Explain FST in detail. 10
- Q. 5 a) What is stemming. Explain Porter's stemming algorithm in detail. 10  
b) Explain with suitable examples following relationships between word meanings:  
Homonymy, Polysemy, Synonymy, Antonymy, Hyponymy, Hypernymy, Meronymy 10
- Q. 6 Write a note on : ( any 2) 20  
a) Information Retrieval.  
b) Machine translation.  
c) Sentiment analysis.  
d) Wordnet.