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|----------------------|--|
| Nominal → Nominal PP | |
| VP → Verb | |
| VP → Verb NP | |
| VP → Verb NP PP | |
| VP → Verb PP | |
| VP → VP PP | |
| PP → Preposition NP | |

- 7 a) Explain the different levels of language analysis. (5)
- b) Identify the head and morphological type (Noun Phrase, Verb Phrase, Adjective Phrase, Adverbial Phrase) of the following sentence segments. (4)
- i. The president of the company
 - ii. Looked up the chimney
 - iii. Angry as a hippo
 - iv. Rapidly like a bat

PART C

Answer all questions, each carries 3 marks.

- 8 Describe thematic roles used in the semantic analysis with example. (3)
- 9 Define the following. (3)
- i) Principle of minimal attachment
 - ii) Principle of Right Association
- 10 How the inference is done in FOPC? (3)
- 11 Identify and describe the ambiguities in the following sentences. (3)
- i. The man kept the dog in the house.
 - ii. Book that flight.

PART D

Answer any two full questions, each carries 9 marks.

- 12 Demonstrate ATN with a detailed example. Mention the advantage of ATN over RTN. (9)
- 13 Describe the usage of PCFG in NLP. (9)
- 14 Analyze the significance of Word Sense Disambiguation in NLP. Explain any one WSD method (9)

PART E

Answer any four full questions, each carries 10 marks.

- 15 Analyse how statistical methods can be used in machine translation (10)
- 16 Explain the architecture of an Information Retrieval system with a neat diagram. (10)
- 17 Explain the process of multi-document summarization. (10)
- 18 Describe Text Coherence. Discuss the significance of Text Coherence in Discourse Segmentation (10)
- 19 Write the FOPC representation for following sentences (10)
- i) All vegetarian restaurants serve vegetarian food.
- ii) I arrived in New York.
- iii) I ate a vegetable fried rice from Indian Coffee house.
- iv) There is restaurant near Delhi which serves Italian food.
- 20 Describe the different components of a typical conversational agent. (10)

