**Module 2**

1. Compare and contrast BFS and DFS Algorithm
2. Describe a language using FSA
3. Explain the components needed to build a morphological parser
4. Compare and contrast FST and FSA
5. Explain how to define an FST. Explain with an example
6. Explain what is p-subsequential transducer
7. Explain architecture of 2-level morphological parsing system with proper diagram
8. Write short note on Lexicon Free FSTs
9. Explain how N grams are used for word prediction
10. Explain how Ngrams are used for spell correction.
11. Create FST for e-insertion rule.

**Module 3**

1. Explain with 3 examples what is open word class and closed word class.
2. Write short note on Tagsets used in English language.
3. Explain Penn Treebank Tagset
4. Explain the various types of Tagging algorithm
5. Explain rule based tagging algorithm with the help of an example
6. Explain Stochastic Tagging Algorithms with an example.
7. Explain Transformation based Tagging Algorithm.Describe its pros and cons.
8. Explain how to formulaize HMM Tagger.
9. Explain Viterbi algorithm for HMM Decoding.
10. Write a short note on MEM Tagging algorithm
11. Write a short note on the CRF Tagging algorithm.

**Module 4**

1.What are the different components in Lexical Semantic Analysis?

2.What is Word net? Explain with an example

3. What is Synset? Explain with an example.

4. Explain the different approaches to Word Sense Disambiguation.

5. Explain Robust Word Sense Disambiguation with different approaches in detail

6. Explain Lesk Algorithm

**Module 5**

1. What is Reference Resolution? What are the components in Reference Resolution?

Find the components in the following sentences.

Guiliani left Bloomberg to be mayor of a city with a big budget problem. It is unclear how he will be able to handle it during his term.

Captain Farragut was a good seaman, worthy of the frigate he commanded. His vessel and he were one. He was the soul of it.

2. What are the five types of referring expression ?

3. Explain the three types of referents that complicate the reference resolution problem

4. Explain the Syntactic and Semantic Constraints on Coreference

**Module 6**

1. Explain the different approaches for Machine Translation.

2. Explain in detail Rule Based Machine Translation

3. Explain with block diagram the working of Information Retrieval System

4. Explain the different steps in text processing for Information Retrieval

5. Explain the different steps in Question Answering System.

6. Explain the classification of approaches in Question Answer System

7. Explain with diagram the steps in Text Categorization

8. Explain the different classification techniques used in text categorization

9. What is text summarization? Which are the different types of text summarization?

10. Explain with diagram general working of a text summarization system.

11. Explain with diagram a general sentiment analysis system

12. Explain the different feature selection methods in sentiment analysis

13. Explain the classification of sentiment analysis system.

14. Explain what is Named Entity Recognition. Give the different named entity categories.

15. Explain with diagram the different steps in a Named Entity Recognition System.

16. Explain the different classification approaches for Named Entity Recognition.

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