SRM VALLIAMMAI ENGINEERING COLLEGE

(An Autonomous Institution)

SRM Nagar, Kattankulathur – 603 203

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

QUESTION BANK

VI SEMESTER

1904004 – NATURAL LANGUAGE PROCESSING

Regulation – 2019

Academic Year 2024-2025 (Even Semester)

Prepared by

Ms.Shanthi. S ,Assistant Professor (Sel.Gr)

SRM VALLIAMMAI ENGINEERING COLLEGE
(An Autonomous Institution)
SRM Nagar, Kattankulathur – 603 203.

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
<u>QUESTION BANK</u>

SUBJECT : **1904004-Natural Language Processing**

YEAR/SEM: III/VI

	UNIT I INTRODUCTION		
	Origins and challenges of NLP –Language Modeling: Grammar-based LM, Statistical LM – Regular Expressions, Finite-State Automata –English Morphology, Transducers for lexicon and rules, Tokenization, Detecting and Correcting Spelling Errors, Minimum Edit Distance.		
	PART – A		
Q. No.	Questions	BT Level	Competence
1	List the origin of NLP.	BTL 1	Remembering
2	Define Natural Language processing.	BTL 1	Remembering
3	Examine the challenges of NLP.	BTL 4	Analyzing
4	What are the challenges of NLP for Artificial Intelligence?	BTL 1	Remembering
5	Examine human vs Machine with regard to Language processing.	BTL 4	Analyzing
6	Analyze the Preprocessing of Text	BTL 4	Analyzing
7	Define Language modelling	BTL 1	Remembering
8	What is pattern?	BTL 1	Remembering
9	Generalize the importance of language modelling	BTL 3	Applying
10	Summarize what is regular expression?	BTL 2	Understanding
11	What is Finite State Automata?	BTL 1	Remembering
12	Give how the morphological rules differentiates from the orthographic rules?	BTL 2	Understanding
13	How Finite Automata, Regular Grammars and Regular Expressions are related?	BTL 6	Creating
14	Assume the following words: INTENTION AND EXECUTION. Represent the minimum edit distance between the two words.	BTL 3	Applying
15	Organize the three problems in detecting and correcting spelling errors.	BTL 3	Applying
16	Generalize the 7 parameters of Finite state transducers/	BTL 3	Applying
17	Discuss what is Lexicon	BTL 2	Understanding
18	Compare and contrast the Substitution, Capture Groups, and ELIZA	BTL 2	Evaluating
19	Evaluate the Disjunction, Grouping, and Precedence	BTL 5	Evaluating
20	What are the types of text normalization?	BTL 5	Understanding
21	Analyse the Finite state transducers as generator.	BTL 4	Analyzing
22	What is sentence segmentation?	BTL 6	Creating
23	Discuss about minimum edit distance.	BTL 2	Understanding
24	What are the English verbal inflection?	BTL 5	Evaluating
	PART – B		
Q. No.	Questions	Marks	BT Level	Competence
1	(i)Explain the steps in pre-processing of text. (ii)Explain the uses, importance and examples of language modelling.	7 6	**BTL1**	**Remembering**
2	(i)Explain what is language modelling? (ii)Explain how language modelling works?	7 6	**BTL1**	**Remembering**
3	Discuss Briefly about the grammar based modelling.	13	**BTL1**	**Remembering**
4	Briefly explain what is Artificial intelligence and discuss the challenges of NLP for AI	13	**BTL1**	**Remembering**

5	Describe in detail about the various types of Statistical based modelling.	**13**		**Understanding**
6	(i)Discuss in detail about Regular expression, Disjunction, Grouping, and Precedence. (ii)What is Kleene closure? Explain with a simple example about Regular expression	**7** **6**	**BTL2**	**Understanding**
7	Explain the various types of finite Automata.	**13**	**BTL4**	**Analyzing**
8	Illustrate with example the three tasks commonly applied for any text normalization process.	**13**	**BTL3**	**Applying**
9	Discuss in detail the minimum edit distance algorithm, an example of the class of dynamic programming algorithms	**13**	**BTL5**	**Evaluating**
10	Formulate and write the operators in regular expression with example.	**13**	**BTL6**	**Creating**
11	Discuss in detail the Inflectional Morphology	**13**	**BTL5**	**Evaluating**
12	(i)Examine in detail about Morphological Parsing (ii)Explain Types of Morphemes	**7** **6**	**BTL3**	**Applying**
13	What is minimum edit distance? Discuss in detail.	**13**	**BTL2**	**Understanding**
14	How the inflectional and Derivational Morphology is related and discuss in detail about Derivational morphology	**13**	**BTL3**	**Applying**
15	Analyze the various Finite-state Morphological parsing.	**13**	**BTL4**	**Analyzing**
16	Explain how to build a finite state Lexicon.	**13**	**BTL2**	**Understanding**
17	(i)Explain the finite state transducers (ii)How to combine FST lexicon and Rules	**7** **6**	**BTL4**	**Analyzing**
	PART – C			
1	(i)Prepare the types of errors in NLP. (ii)Briefly explain Detecting and correcting and spelling errors.	**5** **10**	**BTL6**	**Creating**
2	Summarize how do we find the minimum edit distance? Find the edit distance for the word "INTENTION" AND "EXECUTION "	**15**	**BTL5**	**Evaluating**
3	Explain the sequential transducers and determinism in NLP	**15**	**BTL5**	**Evaluating**
4	Compose on word and Sentence tokenization	**15**	**BTL6**	**Creating**
5	Summarize the parsing with FST lexicon and rules.	**15**	**BTL5**	**Evaluating**

	UNIT II WORD LEVEL ANALYSIS		
	Unsmoothed N-grams -Evaluating N-grams – Smoothing - Interpolation and Back off –Word Classes - Part-of-Speech Tagging - Rule-based - Stochastic and Transformation based tagging - Issues in PoS tagging –Hidden Markov and Maximum Entropy models		
	PART – A		
Q. No.	**Questions**	BT Level	Competence
1	What is language modelling?	**BTL 1**	**Remembering**
2	Discuss about n- gram?	**BTL 2**	**Understanding**
3	Suppose the history h is"its water is so transparent that" .Assess what is the probability that the next word is the?	**BTL 5**	**Evaluating**
4	Discuss about Markov assumption	**BTL 2**	**Understanding**
5	Give the chain rule of probability?	**BTL 2**	**Understanding**
6	What is maximum likelihood Estimation (MLE)?	**BTL 1**	**Remembering**
7	Infer why Part-of-speech (POS) tagging is difficult?	**BTL 4**	**Analyzing**
8	Show the difference between Hidden Markov model and maximum entropy Markov model	**BTL 3**	**Applying**
9	Formulate the maximum likelihood.	**BTL 6**	**Creating**
10	What is Log probability?	**BTL 1**	**Remembering**
11	Define Perplexity	**BTL 1**	**Remembering**
12	Describe the difference between open class and closed class word.	**BTL 1**	**Remembering**
13	Compose the difference between the Word likelihood probabilities and Tag Transition probabilities	**BTL 3**	**Applying**
14	Examine the term Part-of-speech (POS) tagging.	**BTL 6**	**Creating**

15	Analyze the POS tagging algorithm's accuracy.	BTL 4	Analyzing
16	Point out what is meant by capture group? Give an example	BTL 4	Analyzing
17	Define the Tag set with example	BTL 1	Remembering
18	Examine the various types of smoothing.	BTL 5	Evaluating
19	Analyse what is smoothing in n-gram counts?	BTL 4	Analyzing
20	Interpret the Objective of HMM	BTL 3	Applying
21	Assess the absolute discounting	BTL 5	Evaluating
22	Compose the Viterbi Algorithm.	BTL 3	Applying
23	Compare the bigram and trigram.	BTL 2	Understanding
24	Summarize about the Bigram assumption.	BTL 2	Understanding

	PART – B			
Q. No.	Questions	Marks	BT Level	Competence
1	Explain the N-Grams with an example.	13	BTL 5	Evaluating
2	Construct and comparee the intrinsic and extrinsic evaluation of language model.	13	BTL 6	Creating
3	Analyze the various perplexity and how perplexity is also closely related to the information theoretic notion of entropy.	13	BTL 4	Analyzing
4	Describe the various types of smoothing in n-grams.	13	BTL 2	Understanding
5	Discuss the following (i) Laplace smoothing (ii) Add k-smoothing	7 6	BTL 2	Understanding
6	Explain in detail about the Interpolation and Back-off	13	BTL 1	Remembering
7	(i)Analyze the word classes (ii)Examine the various types of word classes?	7 6	BTL 4	Analyzing
8	Describe the parts-of speech tagging in NLP with an example.	13	BTL 1	Remembering
9	Explain Rule-Based Tagging	13	BTL 5	Evaluating
10	(i)Summarize stochastic POS tagging (ii)Explain Tag sequence probabilities	7 6	BTL 2	Understanding
11	Describe in detail Tagging Unknown Words	13	BTL 2	Understanding
12	Illustrate about the following: (i)Transformation-Based Learning Tagger: TBL (ii)Advantages and Disadvantages of TBL algorithm	7 6	BTL 3	Applying
13	Write short notes on: (i)Hidden Markov Model POS Tagging: HMM (ii)Discuss about Hidden Markov Model.	7 6	BTL 1	Remembering
14	Explain in detail about mmaximum Entropy Markov Model	13	BTL 1	Remembering
15	Illustrate the maximum entropy model .	13	BTL 3	Applying
16	Analyse how Maximum Entropy Markov Models (MEMM) defines using Log-linear model.	13	BTL 4	Analyzing
17	Illustrate about the following: (i)Maximum Likelihood (ii) Log-linear model. (iii) Log-likelihood function	5 4 4	BTL3	Applying

	PART – C			
1	Create the following: Bigram probabilities for eight words in the Berkeley Restaurant Project corpus of 9332 sentences.	15	BTL 6	Creating
2	Assess briefly about first-order Markov Assumption - and explain the following" tomorrow's weather is only dependent on today's weather conditions only. "	15	BTL5	Evaluating
3	Explain the parts of speech tagging in NLP and discuss POS	15	BTL5	Evaluating

	tagging algorithm's accuracy.			
4	Assume text from the web or other enormous collections, Develop extremely large language models.	**15**	**BTL6**	**Creating**
5	Explain what Inference is obtain in sequence label that yields the highest probability.	**15**	**BTL5**	**Evaluating**

	UNIT III SYNTACTIC ANALYSIS			
	Context-Free Grammars, Grammar rules for English, Tree banks, Normal Forms for grammar –Dependency Grammar –Syntactic Parsing – Ambiguity – Dynamic Programming parsing –Shallow parsing –Probabilistic CFG - Probabilistic CYK -Probabilistic Lexicalized CFGs - Feature structures - Unification of feature structures			
	PART – A			
Q. No.	**Questions**	**BT Level**	**Competence**	
1	What is a Context-Free Grammar (CFG)?	**BTL1**	**Remembering**	
2	How does CFG differ from regular grammars?	**BTL6**	**Creating**	
3	What is the purpose of a Treebank in natural language processing?	**BTL1**	**Remembering**	
4	How does Dependency Grammar differ from Phrase Structure Grammar?	**BTL6**	**Creating**	
5	Explain syntactic parsing.	**BTL4**	**Analyzing**	
6	What is syntactic ambiguity, and why is it a challenge in natural language processing?	**BTL1**	**Remembering**	
7	Discuss how dynamic programming contributes to syntactic parsing algorithms?	**BTL2**	**Understanding**	
8	What role does probability play in Probabilistic Context-Free Grammar (PCFG)?	**BTL1**	**Remembering**	
9	What are feature structures in the context of syntactic analysis?	**BTL2**	**Understanding**	
10	How does unification of feature structures contribute to linguistic analysis?	**BTL5**	**Evaluating**	
11	Illustrate with an example what is left recursion in context-free grammars, and why is it important to eliminate it?	**BTL3**	**Applying**	
12	Examine how Early parser differ from other parsing algorithms?	**BTL3**	**Applying**	
13	Define LALR parsing.	**BTL1**	**Remembering**	
14	What are the basic steps of the CYK algorithm?	**BTL1**	**Remembering**	
15	Analyse in what real-world applications is probabilistic parsing commonly employed, and how does it enhance language processing tasks?	**BTL4**	**Analyzing**	
16	Describe what is lexical ambiguity, and how does it pose challenges in syntactic analysis?	**BTL2**	**Understanding**	
17	How does probabilistic parsing contribute to improving accuracy in speech recognition systems?	**BTL5**	**Evaluating**	
18	Point out chart parsing?	**BTL4**	**Analyzing**	
19	Explain the common strategies for resolving parsing ambiguity in natural language processing.	**BTL4**	**Analyzing**	
20	Discuss the metrics that are commonly used to evaluate the performance of probabilistic parsing algorithms, and why are they important?	**BTL2**	**Understanding**	
21	Describe what is Shallow parsing?	**BTL2**	**Understanding**	
22	Illustrate the significance of probabilistic parsing.	**BTL3**	**Applying**	
23	Demonstrate the basic steps in CYK algorithm and its time complexity.	**BTL3**	**Applying**	
24	Compare Top down parsing and bottom up parsing.	**BTL5**	**Evaluating**	
	PART – B			
1	Explain the concept of context-free grammars and their significance in natural language processing. Provide an example of a context-free grammar.	**13**	**BTL1**	**Remembering**
2	Discuss the key grammar rules used in English language processing. How can these rules be represented using context-free grammars?	**13**	**BTL2**	**Understanding**
3	(i)Discuss the term "treebank" and its role in syntactic analysis. (ii)How are treebanks constructed, and what information do they capture about sentence structure?	**6 7**	**BTL2**	**Understanding**

4	Explain the concept of normal forms for grammars. How does transforming a grammar into Chomsky Normal Form (CNF) or Greibach Normal Form (GNF) simplify the parsing process?	13	BTL1	Remembering
5	(i)Compare and contrast the various types of Dependency Graph (ii) What is dependency graph? Discuss in detail.	6 7	BTL2	Understanding
6	(i)Describe the process of syntactic parsing and its importance in natural language processing. (ii)Discuss different parsing algorithms and their applications.	7 6	BTL2	Understanding
7	Explain the role of dynamic programming in syntactic parsing. How does dynamic programming contribute to the efficiency of parsing algorithms?	13	BTL5	Evaluating
8	(i)Define shallow parsing and highlight its key characteristics. (ii)Discuss the applications of shallow parsing in natural language processing.	6 7	BTL1	Remembering
9	Illustrate what is a Probabilistic Context-Free Grammar (PCFG)? How does introducing probabilities into context-free grammars enhance their performance in parsing?	13	BTL3	Applying
10	Examine the Probabilistic Cocke-Younger-Kasami (CYK) parsing algorithm. How does it differ from the traditional CYK parsing algorithm and what are all the advantages?	13	BTL3	Applying
11	Define feature structures and their role in syntactic analysis. How are feature structures used to represent linguistic information?	13	BTL1	Remembering
12	Explain the concept of Probabilistic Lexicalized Context-Free Grammars (PLCFGs). How do lexicalized grammars take into account word-level information in parsing?	13	BTL4	Analyzing
13	Compare and contrast different probabilistic parsing strategies, such as Viterbi parsing and Earley parsing. What are the advantages and limitations of each approach?	13	BTL4	Analyzing
14	Develop how context-free grammars are used to define the syntax of programming languages. Provide examples of grammar rules for common programming constructs.	13	BTL5	Evaluating
15	Illustrate lexical ambiguity with examples. How can lexical ambiguity be resolved during syntactic analysis, and what impact does it have on parsing?	13	BTL3	Applying
16	Compose the relationship between syntax and semantics in natural language processing. How does the incorporation of semantic information impact syntactic analysis?	13	BTL6	Creating
17	Explain how to convert CFG to CNF for the following G1 = {S → AB, S → c, A → a, B → b} G2 = {S → aA, A → a, B → c}	13	BTL4	Analyzing
PART – C				
1	(i)Explain the concept of Context-Free Grammars (CFGs) and how they are used in natural language processing. Provide examples to illustrate. (ii)Discuss the role of grammar rules in the context of syntactic analysis for English. How do these rules contribute to parsing sentences?	7 8	BTL5	Evaluating
2	(i)Define and explain the concept of Treebanks. How are they utilized in the development and evaluation of syntactic parsers? (ii)Discuss the importance of converting grammars into normal forms. Provide examples and explain how normal forms facilitate syntactic analysis.	5 10	BTL5	Evaluating
3	(i)Expl;ain in in detail about Feature structures and Unification of feature structures. (ii)Explain the process of syntactic parsing. Discuss different parsing techniques and their applications in natural language processing.	7 8	BTL5	Evaluating
4	(i)Develop examples of syntactic ambiguity. How does ambiguity impact the parsing process? (ii)Discuss the concept of shallow parsing and its significance in syntactic analysis. Provide examples of shallow parsing in practice.	7 8	BTL6	Creating

| 5 | (i)Prepare probabilistic Lexicalized Context-Free Grammars (PLCFGs) and discuss their applications in syntactic analysis. | **5** | | |
| | (ii)Explain the concept of feature structures and their role in capturing linguistic information. How are feature structures used in natural language processing? | **10** | **BTL6** | **Creating** |

	UNIT IV SEMANTICS AND PRAGMATICS
	Description Logics-Syntax-Driven Semantic analysis, Semantic attachments -Word Senses, Relations between Senses, Thematic Roles, Selectional restrictions-Word Sense Disambiguation, WSD using Supervised, Dictionary & Thesaurus, Bootstrapping methods -Word Similarity using Thesaurus and Distributional methods.

	PART – A		
Q. No.	**Questions**	**BT Level**	**Competence**
1	What is semantic analysis?	**BTL1**	**Remembering**
2	Analyze why Semantic Analysis is difficult?	**BTL4**	**Analyzing**
3	Integrate WordNet and Wordsense?	**BTL6**	**Creating**
4	What are the basic elements of First Order logic?	**BTL1**	**Remembering**
5	Define Lambda notation.	**BTL1**	**Remembering**
6	Evaluate the ways in which Modus Ponens can be used?	**BTL5**	**Evaluating**
7	What are the two operators of FOL?	**BTL2**	**Understanding**
8	Difference between Polysemy and Homonymy.	**BTL2**	**Understanding**
9	How does word senses can be related?	**BTL2**	**Understanding**
10	What is WSD?	**BTL2**	**Understanding**
11	What is First-Order Logic, and how is it utilized in natural language processing?	**BTL3**	**Applying**
12	How do semantic attachments aid in disambiguating word senses?	**BTL3**	**Applying**
13	What is the role of Description Logics in semantic analysis?	**BTL3**	**Applying**
14	How do relations between senses contribute to a more comprehensive semantic understanding?	**BTL4**	**Analyzing**
15	How can dictionaries and thesauri be utilized in Word Sense Disambiguation?	**BTL4**	**Analyzing**
16	Compare and contrast word similarity using thesaurus and distributional methods.	**BTL4**	**Analyzing**
17	What are the key requirements for semantic representation in natural language processing?	**BTL1**	**Remembering**
18	What challenges may arise in supervised WSD, especially when dealing with new or rare word senses?	**BTL5**	**Evaluating**
19	What advantages does bootstrapping offer in the context of WSD, and how does it address the data labeling challenge?	**BTL5**	**Evaluating**
20	What are potential drawbacks of relying solely on a thesaurus for measuring word similarity?	**BTL1**	**Remembering**
21	How do distributional methods measure word similarity, and what information do they rely on?	**BTL2**	**Understanding**
22	What is Pragmatics?	**BTL1**	**Remembering**
23	Illustrate the WSD algorithms.	**BTL3**	**Applying**
24	Examine the term word sense?	**BTL6**	**Creating**
	PART – B		
1	What is WordNet? How is "sense" defined in WordNet? Examine with example.	**13**	**BTL1**	**Remembering**
2	Explain Lesk Algorithm for WSD with suitable example. A knowledge dictionary based approach	**13**	**BTL5**	**Evaluating**
3	What do you mean by word sense disambiguation (WSD)?	**13**	**BTL1**	**Remembering**

	Discuss machine learning based (Navie based) approach for WSD			
4	Explain with suitable example following relationships between word meanings: Homonymy, Polysemy, Synonymy, Antonymy, Hypernomy, Hyponomy. Discuss in detail attachments for fragments of English sentences.	13	BTL1	Remembering
5	What is Word sense disambiguation? Explain different ways to identify correct sense of an ambiguous word.	13	BTL2	Understanding
6	Explain various approaches to semantic analysis. Discuss different semantic relationships between the words.	13	BTL2	Understanding
7	Analyze Pragmatics with suitable example. And discuss the implementation phases of language processing	13	BTL4	Analyzing
8	Explain how a supervised learning algorithm can be applied for word sense disambiguation.	13	BTL4	Analyzing
9	(i)Write short notes on Word Senses. (ii)Give FOL translations for the following sentences: 1. Vegetarians do not eat meat. 2. Not all vegetarians eat eggs.	6 7	BTL3	Applying
10	(i)Explore the relationships between different word senses. (ii)Define and elaborate on thematic roles in the context of semantics.	6 7	BTL2	Understanding
11	Define FOL. What are the basic elements of FOL. Explain with an example.	13	BTL4	Analyzing
12	List out the various algorithms used for WSD. Evaluate with example.	13	BTL5	Evaluating
13	Define distributional methods for measuring word similarity. Discuss the theoretical foundations of distributional semantics.	13	BTL3	Applying
14	(i)Explore the relationships between different word senses. (ii)Define and elaborate on thematic roles in the context of semantics.	6 7	BTL6	Creating
15	Discuss how thematic roles contribute to a deeper understanding of linguistic meaning.	13	BTL2	Understanding
16	Discuss the role of FOL in semantic analysis and representation.	13	BTL3	Applying
17	What do you mean by word sense disambiguation (WSD)? Discuss dictionary based approach	13	BTL1	Remembering
	PART – C			
1	(i)Explain the fundamental requirements for representation in natural language processing. (ii)Provide examples illustrating the challenges associated with representation in NLP.	6 9	BTL6	Creating
2	Define and explain the principles of First-Order Logic (FOL).Discuss the role of FOL in semantic analysis and representation. Provide examples illustrating the application of FOL in natural language understanding.	15	BTL5	Evaluating
3	(i)Define Word Sense Disambiguation (WSD) and its importance in NLP. (ii)Discuss the challenges of WSD and potential applications. Provide examples of successful WSD techniques.	7 8	BTL5	Evaluating
4	Define bootstrapping methods in the context of WSD. Discuss the advantages and challenges of using bootstrapping for WSD. Explain with example.	15	BTL6	Creating
5	Identify and discuss the major challenges in semantic and pragmatic processing. Evaluate potential solutions or strategies to address these challenges.	15	BTL5	Evaluating

	UNIT V DISCOURSE ANALYSIS AND LEXICAL RESOURCES			
	Discourse segmentation - Coherence –Reference Phenomena - Anaphora Resolution using Hobbs and Centering Algorithm –Co reference Resolution –Resources: Porter Stemmer - Lemmatizer, Penn Treebank, Brill's Tagger, Word Net, Prop Bank, Frame Net, Brown Corpus, British National Corpus (BNC).Programming in Python - NLTK (Natural Language Toolkit)			
	PART – A			
Q. No.	**Questions**		**BT Level**	**Competence**
1	Define discourse model.		**BTL1**	**Remembering**
2	What are the types of referring expression?		**BTL1**	**Remembering**
3	What is reference resolution?		**BTL2**	**Understanding**
4	Illustrate discourse processing?		**BTL3**	**Applying**
5	Name two algorithms for Anaphora Resolution.		**BTL2**	**Understanding**
6	What do you mean by anaphora and anaphor?		**BTL2**	**Understanding**
7	Point out the properties of Coreference relation.		**BTL4**	**Analyzing**
8	How does Penn Treebank contribute to NLP research?		**BTL6**	**Creating**
9	Differentiate tasks and dataset?		**BTL4**	**Analyzing**
10	What is the purpose of Lemmatization in NLP?		**BTL2**	**Understanding**
11	List the stages of RST parsing.		**BTL1**	**Remembering**
12	What is Co-reference Resolution, and why is it important in NLP?		**BTL3**	**Applying**
13	List examples of resources used in NLP for text processing.		**BTL1**	**Remembering**
14	Analyze how does Anaphora Resolution contribute to text understanding?		**BTL4**	**Analyzing**
15	What is the significance of Coherence in discourse analysis?		**BTL1**	**Remembering**
16	Define Discourse Segmentation in Natural Language Processing (NLP).What is the purpose of Lemmatization in NLP?		**BTL4**	**Analyzing**
17	How does FrameNet contribute to the analysis of meaning in language?		**BTL5**	**Evaluating**
18	How can NLTK (Natural Language Toolkit) be utilized for NLP tasks in Python programming?		**BTL5**	**Evaluating**
19	Analyze how does WordNet aid in addressing the challenge of word sense ambiguity? Define semantic role labeling and its relevance in natural language processing.		**BTL6**	**Creating**
20	In what ways does FrameNet contribute to capturing meaning beyond individual words?		**BTL5**	**Evaluating**
21	What is Entity based Coherence?		**BTL3**	**Applying**
22	Define the terms: pathos, ethos and logos		**BTL2**	**Understanding**
23	What is the significance of Brill's tagger?		**BTL3**	**Applying**
24	Define Prop Bank.		**BTL1**	**Remembering**
	PART – B			
1	What are the different types of referring expression? Explain with the help of example.	**13**	**BTL1**	**Remembering**
2	Explain Anaphora Resolution with the help of Hobb's algorithm.	**13**	**BTL1**	**Remembering**
3	(i)Define discourse segmentation and explain its significance in natural language processing. (ii)Discuss the challenges associated with discourse segmentation and provide examples.	**6** / **7**	**BTL1**	**Remembering**
4	(i)Discuss different strategies or methods employed in achieving coherence within a text. (ii) Provide examples of incoherent discourse and suggest ways to improve coherence.	**6** / **7**	**BTL1**	**Remembering**
5	Explain the Centering algorithm and its application in anaphora resolution.	**13**	**BTL2**	**Understanding**

6	Compare the strengths and limitations of the Hobbs and Centering algorithms in resolving anaphora.	13	BTL2	Understanding
7	Define Penn Treebank and discuss its role in lexical resources.	13	BTL2	Understanding
8	(i)Explain the functionality of Brill's Tagger in part-of-speech tagging	6	BTL4	Analyzing
	(ii)Compare the strengths and weaknesses of Penn Treebank and Brill's Tagger.	7		
9	Define Coreference resolution. Describe how the reference expressions are used to evoke and access entities in the discourse model.	13	BTL3	Applying
10	Discuss real-world applications of anaphora resolution using Hobbs and Centering algorithms.	13	BTL3	Applying
11	Discuss how Word Net enhances semantic understanding in natural language processing.	13	BTL4	Analyzing
12	Discuss the application of NLTK in handling large-scale textual data for discourse analysis.	13	BTL4	Analyzing
13	(i)Explain the basics of programming in Python with a focus on NLTK (Natural Language Toolkit).	6	BTL5	Evaluating
	(ii)Illustrate how NLTK can be used with lexical resources discussed earlier for effective natural language processing.	7		
14	(i)Discuss challenges in co-reference resolution and propose solutions.	6	BTL6	Creating
	(ii)Provide examples where co-reference resolution plays a crucial role in text understanding.	7		
15	Explore advanced natural language processing (NLP) techniques using NLTK in Python.	13	BTL2	Understanding
16	Provide examples of how lexical resources contribute to discourse-level understanding and coherence.	13	BTL5	Evaluating
17	Describe the Hobbs algorithm for anaphora resolution. Provide step-by-step details.	13	BTL3	Applying
PART – C				
1	Define discourse segmentation and explain. Illustrate how discourse segmentation contributes to text coherence. Provide real-world examples.	15	BTL6	Creating
2	Provide examples of NLTK's capabilities in co-reference resolution, semantic analysis, and other advanced NLP tasks.	15	BTL5	Evaluating
3	(i)Explore evaluation measures for lexical resources, including precision, recall, and F1-score.	7	BTL5	Evaluating
	(ii)Compare and contrast the challenges in evaluating discourse analysis and lexical resource systems.	8		
4	(i)Explore the intersections between discourse analysis and lexical resources in natural language processing.	6	BTL6	Creating
	(ii)Discuss how the insights gained from discourse analysis can enhance the development and utilization of lexical resources.	9		
5	Explain the role of speech processing in the broader context of natural language processing.	15	BTL5	Evaluating