Question Paper Code	13935

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2025
Seventh Semester

Computer Science and Engineering
(Common to Computer Science and Engineering (IoT))

20CSEL704 - NATURAL LANGUAGE PROCESSING
Regulations - 2020

Duration: 3 Hours   Max. Marks: 100

PART - A (MCQ) (10 × 1 = 10 Marks)
Answer ALL Questions

		Marks	K–Level	CO
1.	Natural Language Processing majorly deals with_____ processing. (a) Textual data (b) Numeric data (c) Image data (d) Visual data	1	K1	CO1
2.	------ predicts a word based on the previous n−1 words. (a) Unigram model (b) N-gram model (c) Hidden Markov model (d) Continuous space model	1	K1	CO1
3.	What is the term for all forms of a word with a shared meaning (e.g., "go," "goes," "going")? (a) Morpheme (b) Stemming (c) Lexeme (d) Tokenization	1	K1	CO2
4.	Syntactic analysis primarily focuses on -------- (a) Word structure (b) Sentence structure (c) Sentence meaning (d) Word meaning	1	K1	CO2
5.	Many words have more than one meaning; we have to select the meaning which makes the most sense in context. This can be resolved by _____ (a) Word Sense Disambiguation (b) Fuzzy logic (c) Word Sense Ambiguation (d) Semantic analysis	1	K2	CO3
6.	What does the phenomena that operates at Discourse level include? (a) Cohesion and Resolution (b) Connection and Resolution (c) Cohesion and Corrosion (d) Cohesion and Coherence	1	K1	CO3
7.	Which of the following is an example of natural language generation? (a) Converting speech to text (b) Translating a document from English to French (c) Writing a news article (d) Analyzing social media posts	1	K1	CO4
8.	What is the primary purpose of machine translation in NLP? (a) To recognize and classify named entities (b) To translate text from one language to another (c) To perform tokenization (d) To identify the sentiment of a text	1	K1	CO4
9.	Which of the following is a Classical IR model? (a) Boolean model (b) Information logic model (c) Cluster model (d) Interaction model	1	K1	CO5
10.	Which technique is used to predict the probability of a sequence of words in a given context? (a) Sentiment analysis (b) Named entity recognition (c) Machine translation (d) Language modeling	1	K1	CO6

PART - B (12 × 2 = 24 Marks)
Answer ALL Questions

		Marks	K–Level	CO
11.	Outline the challenges of Natural Language Processing.	2	K2	CO1
12.	Infer the need of language modeling in Natural Language Processing.	2	K2	CO1
13.	Tell the goals of word level analysis.	2	K1	CO2
14.	Find the PoS tags for the given sentence "The cat sat on the mat".	2	K1	CO2

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create   **13935**

15.	Outline the importance of semantic analysis in Natural Language Processing.	2	K2	CO3
16.	What do you mean by cohesion in Discourse processing?	2	K1	CO3
17.	Summarize the scope and limitations of Natural Language Generation system.	2	K2	CO4
18.	How is Bag-of-words model useful in Machine Translation?	2	K1	CO4
19.	Define the terms with respect to information retrieval: relevance, index.	2	K1	CO5
20.	Compare Boolean model with Probabilistic model in Information Retrieval.	2	K2	CO5
21.	Recall the role of NLP in sentiment analysis.	2	K1	CO6
22.	Interpret the significance of statistical methods for Natural Language Processing.	2	K2	CO6

PART - C (6 × 11 = 66 Marks)
Answer ALL Questions

23.	a)	Explain the key challenges and tools for processing Indian languages in NLP.	11	K2	CO1
		OR			
	b) (i)	Outline the key components of Constituency grammar and Dependency grammar with examples.	6	K2	CO1
	(ii)	Summarize the key applications of Natural Language Processing.	5	K2	CO1
24.	a) (i)	Compare Deterministic Finite Automaton (DFA) with Non- Deterministic Finite Automaton (NFA) with examples.	6	K2	CO2
	(ii)	Show the steps involved to perform Morphological parsing process.	5	K2	CO2
		OR			
	b)	Outline the procedure for syntactic analysis in Natural Language Processing. Trace the procedure for the sentence "The dog chased the cat".	11	K2	CO2
25.	a)	Explain how to find the overall meaning of the given sentence "The Bank is on the river" with the help of Semantic analysis procedure.	11	K2	CO3
		OR			
	b)	Summarize the core tasks and applications of Discourse processing with an illustrative example.	11	K2	CO3
26.	a) (i)	Examine the architecture of Natural Language Generation (NLG) system with a neat sketch.	6	K4	CO4
	(ii)	Appraise the problems in machine translation in Natural Language Generation (NLG) system.	5	K4	CO4
		OR			
	b)	Examine the key roles and contributions of Indian languages for machine translation in Natural Language Generation (NLG) system with an example.	11	K4	CO4
27.	a)	Outline the design features of Information Retrieval system and its impact on Natural Language Processing.	11	K2	CO5
		OR			
	b)	Explain the comparison between Classical and Non-classical Information Retrieval models with respect to principle, functionality, complexity and applications.	11	K2	CO5
28.	a)	Illustrate how to perform the Spam filtering with a suitable statistical method of Natural Language Processing.	11	K2	CO6
		OR			
	b)	Demonstrate the procedure for Text summarization and its impact on Natural Language Processing with suitable example.	11	K2	CO6

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create

13935