

B.Tech. DEGREE EXAMINATION, JUNE 2023

Seventh Semester

18CSE359T - NATURAL LANGUAGE PROCESSING

(For the candidates admitted during the academic year 2018-2019 to 2021-2022)

Note:

- i. **Part - A** should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40 minutes.
- ii. **Part - B** and **Part - C** should be answered in answer booklet.

Time: 3 Hours

Max. Marks: 100

Part - A (20 × 1 Marks = 20 Marks)

Answer **All** Questions

Marks BL CC

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|---|---|---|---|---|
| 1. One of the main challenge of NLP is
(A) Handling Ambiguity of Sentences
(C) Handling POS-Tagging | (B) Handling Tokenization
(D) Handling Lemma | 1 | 1 | 1 |
| 2. Which among the following is not an application of Natural Language Programming (NLP)?
(A) Speech recognition
(C) Sentimental analysis | (B) Chatbox
(D) Market Basket Analysis | 1 | 2 | 1 |
| 3. Knowledge of the relationship of meaning to the goals and intentions of the speaker is
(A) Morphology
(C) Pragmatics | (B) Semantics
(D) Discourse | 1 | 1 | 1 |
| 4. Which of the text parsing technique can be used for noun phrase detection, verb phrase detection, subject detection, and object detection in NLP?
(A) Continuous Bag of Words
(C) Part of speech tagging | (B) Skip Gram and N-Gram extraction
(D) Dependency Parsing and Constituency parsing | 1 | 2 | 1 |
| 5. Which of the following is demerit of Top-Down Parser?
(A) Inefficient
(C) storage | (B) It is hard to implement
(D) Slow speed | 1 | 2 | 2 |
| 6. Dependency Parsing is also known as
(A) Syntactic parsing
(C) Semantic Parsing | (B) Lexical Parsing
(D) Structural Parsing | 1 | 1 | 2 |
| 7. 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) Fuzzy Logic
(C) Word Sense Disambiguation | (B) Shallow Semantic Analysis
(D) Predicate Logic | 1 | 2 | 2 |
| 8. What is Meronymy relation?
(A) A is part of B
(C) A is a kind of B | (B) B has A as a part of itself
(D) A is superordinate of B | 1 | 1 | 2 |
| 9. Coreference Resolution is
(A) Anaphora Resolution
(C) Coherence | (B) Given a sentence or larger chunk of text, determine which words refer to the same objects
(D) Cohesion | 1 | 1 | 3 |

10. Machine Translation	1	1	3
(A) converts one human language to another		(B) converts human language to machine language	
(C) converts any human language to English		(D) converts machine language to human language	
11. Which of the following is the best example of semantic networks?	1	2	3
(A) Autonomous car driver		(B) Human Food Chain	
(C) MYSIN		(D) Wordnet	
12. Coherence means	1	1	3
(A) To make sentences stick together		(B) To separate the ideas	
(C) To conclude the paragraph		(D) To confuses the reader	
13. Word2vec is used to	1	2	4
(A) Make a set of vocabularies		(B) Represent a document numerically	
(C) Generate vectors out of words		(D) Finding meaning	
14. In NLP, which algorithm decreases the weight for commonly used words and increases the weight for words that are not used very much in a collection of documents	1	2	4
(A) Term Frequency(TF)		(B) Inverse Document Frequency (IDF)	
(C) Word2Vec		(D) WordNet	
15. Language Biases are introduced due to historical data used during training of word embeddings, which one amongst the below is not an example of bias.	1	2	4
(A) Male is to hardworking, Female is to lazy		(B) Boy is to play , Girl is to learn	
(C) Man is to Money Maker, Woman is to Homemaker		(D) New Delhi is to India, Beijing is to China	
16. Which of the following is a kind of text summarization?	1	2	4
(A) Topic-based summarization		(B) Extraction-based summarization	
(C) History-based summarization		(D) Domain based summarization	
17. What is 'gradient' when we are talking about RNN?	1	1	5
(A) The most important step of RNN algorithm		(B) A parameter that can help you improve the algorithm accuracy	
(C) It is how RNN calls it's features		(D) It is a partial derivative with respect to its inputs	
18. _____ occurs when the gradients become very small and tend towards zero.	1	2	5
(A) Exploding Gradients		(B) Vanishing Gradients	
(C) Long Short Term Memory Networks		(D) Gated Recurrent Unit Networks	
19. Bag of words in text pre-processing is a	1	2	5
(A) Feature scaling technique		(B) Feature extraction technique	
(C) Feature selection technique		(D) Feature removing Technique	
20. The network that involves backward links from output to the input and hidden layers is called	1	1	5
(A) Self-organizing maps		(B) Perceptron	
(C) Recurrent Neural Network		(D) Multi layered perceptron	

Part - B (5 × 4 Marks = 20 Marks)

Answer any 5 Questions

Marks BL CO

21. List the NLP steps and explain.	4	3	1
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22. Differentiate Stemming and Lemmatization with example	4	4	1
23. Differentiate Top down and Bottom up parsing	4	4	2
24. Show the representation of semantic Frames and list its components.	4	1	3
25. What is Pronoun Resolution?	4	1	3
26. Brief the stages of summarization.	4	2	4
27. Discuss the types of similarity measures	4	4	5

Part - C (5 × 12 Marks = 60 Marks)

Answer All Questions

Marks BL CO

28. a. i. What is Collocation? Brief the approaches to find collocation.(6 Marks) ii. Identify the approaches for Part of Speech (POS) Tagging. (6 Marks)	12	2	1
OR b. Describe Vector Representation of Words with suitable example.			
29. a. Illustrate Word and Context level Semantics with appropriate examples.	12	4	2
OR b. Analyze the role of semantic labels in NLP and evaluate Semantic role labeling algorithm with example.			
30. a. Explain Intent detection and classification models and discuss the challenges during detection.	12	4	3
OR b. Describe the following: i. Discourse (4 Marks) ii. Coherence (4 Marks) iii. Text Cohesion (4 Marks)			
31. a. Analyze the Architecture of chatbot.	12	4	4
OR b. What is NLG? Elaborate its architecture. and discuss its applications.			
32. a. Implement CBOW and Skip gram approaches in word embedding	12	3	5
OR b. Elaborate LSTM architecture with necessary diagram.			

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