

10. A discourse relation captures		1	1	3
(A) the relation between semantically connected sentences	(B) the relation between semantically disconnected sentences			
(C) the relation between semantically connected words	(D) the relation between semantically disconnected words			
11. Story Generation can be thought of as a direct application of		1	1	3
(A) Parts of Speech tagging	(B) Syntactic parsing			
(C) Text Coherence	(D) N grams			
12. Which one of the following is an example of Knowledge graph?		1	1	3
(A) Lexicon	(B) Ontology			
(C) A set of synonyms	(D) A set of Antonyms			
13. Which one of the following is an example of Information Retrieval System		1	1	4
(A) Amazon Alexa	(B) Google Translation			
(C) Google Search	(D) Chatbot			
14. Which one of the following does not require a Large Language Model		1	1	4
(A) Question Answering	(B) Chatbot			
(C) Information Extraction	(D) Spell checker			
15. Generative Artificial Intelligence is		1	1	4
(A) related to only Text	(B) related to only speech			
(C) related to to only Images	(D) related to Text, Speech and Images			
16. The input to a Natural Language Understanding system is		1	1	5
(A) A natural language text	(B) Parts of Speech of tags			
(C) Named Entity Tags	(D) A parse Tree A			
17. A vector of a word is called		1	1	5
(A) Embeddings	(B) Arrays			
(C) Strings	(D) Captions			
18. CBOW and Skip Gram are		1	1	5
(A) Deep Learning Language Models	(B) Natural Language Understanding applications			
(C) Sentiment Analysis models	(D) Summarization models			
19. The state of the art large language models are		1	1	5
(A) transformer based	(B) Neural Network based			
(C) ChatGPT based	(D) Bard Based			
20. Cosine Similarity measures		1	1	5
(A) the semantic similarity of the texts	(B) syntactic similarity of the texts			
(C) character similarity of the text	(D) character dissimilarity of texts			

PART - B (5 × 4 = 20 Marks)

Answer any 5 Questions

	Marks	BL	CO
21. Name any four real time Natural Language Processing applications that you are using in your day-to-day life.	4	1	1
22. In "N-gram model", What the word "gram" refers to? Please give your views.	4	2	1
23. Define Semantics with suitable examples.	4	1	2
24. Does Context Free Grammar cares about the context ? Give your perspectives on this.	4	2	2
25. Connect text coherence and Generative Artificial Intelligence.	4	2	3
26. What is the difference between Natural Language Understanding and Natural Language Generation.	4	1	4

27. "Recurrent Neural Networks (RNN) and Long Short Term Memory (LSTM) networks are one and the same". Is the statement true or false. Justify to your answer. 4 2 6

PART - C (5 × 12 = 60 Marks)

Answer all Questions

Marks BL CO

28. (a) Write in detail about how a Parts of Speech Tagger can be built using either by using a rule based or a machine learning based approach. 12 2 1
(OR)
(b) What is a language model? Explain in details about how N-gram works as a language model. Include necessary mathematical equations wherever necessary.
29. (a) S → NP VP
NP → Det NOMINAL
NOMINAL → Noun
VP → Verb
Det → a
Noun → flight
Verb → left
Using the above given Context Free Grammar, explain the working of both Top down and Bottom Up parser for the sentence, "A flight left". 12 3 2
(OR)
(b) Explain the working of Word Sense Disambiguation using Supervised or Unsupervised approach.
30. (a) List the Semantic Relations of WordNet and explain the use case of each relation. 12 2 3
(OR)
(b) Explain the working of Hobbs Algorithm in the resolution of pronouns for a chosen text.
31. (a) Describe in detail about the working of an Abstractive Summarization technique. 12 3 6
(OR)
(b) Explain in detail about the Machine Translation using the state-of-art encoder-decoder model.
32. (a) Explain in detail about how embeddings inculcate the semantics for a given text. 12 3 5
(OR)
(b) Explain the working of Long Short Term Memory network in the context of either Text classification or Text Generation task.

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