TA-1-NLP- ✏️

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○ **1.** Which of the Following is not a challenge in Natural Language Processing?

    🗑️

   A   Contextual Understanding

   B   Pragmatics

   C   High RAM Requirment

   D   Multilingualism

○ **2.** _____is the process of predicting the next word in a sequence given a set of preceding words.

   A   Language Processing

   B   Language Modeling

   C   Language Understanding

   D   All of these

○ **3.** What is Part-of-Speech (POS) tagging?

   A   Assigning word meanings

   B   Assigning grammatical categories to words

C Translating words into another language

D Removing stop words

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4. What is a major limitation of grammar-based language modeling?

A It does not consider syntax

B It cannot handle ambiguous words

C It requires extensive linguistic rules

D It is based on neural networks

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5. What does a Regular Expression (RegEx) primarily do?

A Defines a search pattern for text

B Translates text into another language

C Compiles a program

D Encodes images

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6. Which tagging method uses a combination of rules and probabilistic approaches?

A Rule-based tagging

B Stochastic tagging

C Transformation-based learning

D None of the above

7. What is the Markov assumption?

A The probability of a future state depends only on the present state

B The probability of a future state depends on the entire history

C The probability of a future state is random

D The probability of a future state is based on predefined rules

8. Which NLP task benefits from using Finite-State Transducers (FSTs)?

A Morphological analysis

B Syntax parsing

C Sentiment analysis

D Image captioning

9. Which of the following is an example of a unigram probability?

A P(the | dog)

B P(walk | will the)

C P(dog)

D P(dog | the, brown)

10. Which of the following is NOT a component of an HMM?

A Transition probabilities

B Emission probabilities

C Hidden states

D Decision trees

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11. Inflectional Morphology does not change the word's core meaning or part of speech.

True

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12. Which of the following is/are spelling error detection tool?

A Levenshtein Distance

B Noisy Channel Model

C Hunspell

D All of these

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13. Which of the following is not an operation of Minimum edit distance algorithm?

A Insertion

B Deletion

C Substitution

D Searching

14. Compute the Minimum Edit Distance to convert "intention" into "execution."

5

15. Which of the metacharacter represent that string starts with certain charachter?

A $

B   ^

C   @

D   +

16. Which regular expression correctly matches a string that starts with "A" and is followed by exactly three digits, with no extra characters before or after (e.g., "A123" but not "A1234" or "A12")?

^A\d{3}$ ^A[0-9]{3}$ ^A[0-9][0-9][0-9]$

17. What will be the output of the following Python code?

import re

text = "apple 123 banana 456 cherry 789"
pattern = r"\d+"
replacement = "###"

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new_text = re.sub(pattern, replacement, text)
print(new_text)
```

apple ### banana ### cherry ###

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18. Which smoothing technique in N-gram models "hallucinates" additional training data?

A   Good-Turing

B   Backoff

C   Kneser-Ney

D   Laplace (Add-One)

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19. What is the primary purpose of the Viterbi algorithm in HMM?

A   Estimate emission probabilities

B   Find the most probable state sequence

C   Train the HMM model

D   Convert HMM to a neural network

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20. Explain Backoff in N-Grams.

21. Maximum Entropy Models (MEMM) are discriminative models that emphasize conditional probabilities, providing a more targeted approach to predictions.

True

22. Write a Python program that takes following sentence as input and tokenizes it into words.

text = "Natural Language Processing is amazing!"

23. Write a Python function that takes a list of words and applies the Porter Stemmer to reduce them to their root form.

words = ["running", "flies", "better", "easily", "studies"]

24. Which of the following statements is true about lemmatization in NLP?

A   Lemmatization reduces words to their base form using predefined rules without considering context.

B   Lemmatization converts words into their root form based on

meaning and dictionary lookups.

C   Lemmatization always produces the same output as stemming.

D   Lemmatization removes stopwords from text.

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25. What is the goal of coreference resolution in NLP?

A   Identifying whether a word is a noun or verb.

B   Resolving multiple spellings of the same word.

C   Determining which words or phrases refer to which entity in a text.

D   Removing redundant words from a sentence.

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26. Write your full name. Firstname Lastname

Add Blank Question

Multiple Choice   True / False   Short Answer

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