ATOMIC ENERGY CENTRAL SCHOOL, MYSURU

Session: 2025 -26

Class :X **Subject : Computer Science**

WORKSHEET NO:1

Name of the Topic : NLP & AIPC

Section A:

1. Explain 4W framework
2. Define : (a) Project (b) Stackholder
3. What is text normalization in NLP?
4. What are stop words?
5. What is the meaning of (a) Syntax and (b) Semantics in NLP?
6. What is the lemmatization and stemming of the word ‘coming’?
7. What is tokenization in NLP?
8. Give any two applications of Natural Language Processing.
9. What is a dictionary in NLP?
10. Define corpus. How is it used in NLP?

11 Name any one technique used in NLP.

12 AI in personal computers can help detect security threats. (True or False)

13 Name a productivity app that uses AI for grammar and style checking.

14 NLP allows machines to understand both spoken and written language. (True or False)

15 Tokenization in NLP refers to converting text into speech. (True or False)

16 NLP is only used in English and cannot process other languages. (True or False)

17 Chatbots and virtual assistants rely on NLP to interact with users. (True or False)

18 Sentiment analysis is not related to NLP. (True or False)

19 NLP has no role in spam detection or email filtering. (True or False)

20 Named Entity Recognition is a technique used in NLP. (True or False)

21 AI features in personal computers include voice typing and smart replies. (True or False)

22 AIPC means only using AI in mobile phones, not in desktops or laptops. (True or False)

23 AI in personal computing can help with cybersecurity and malware detection. (True or False)

24 Auto-correct and grammar suggestions in word processors are powered by AI. (True or False)

25 Face recognition for device unlocking is an example of AIPC. (True or False)

26 AI is not used in improving battery life or system performance in personal computers. (True or False)

27 Personal computers with AI can learn user habits to personalize the experience. (True or False)

28 Stemming always returns a valid word in the dictionary. (True or False)

29 Lemmatization considers the context and grammar of a word. (True or False)

30 The word “better” would be reduced to “good” by a stemmer. (True or False)

31 Stemming is generally faster than lemmatization. (True or False)

32 Lemmatization is more accurate than stemming but also more computationally expensive. (True or False)

33 Both stemming and lemmatization are used to reduce words to their root forms in NLP. (True or False)

34 Lemmatization does not require a dictionary or corpus. (True or False)

35 **What is the main purpose of stemming in NLP?**
A. To count the frequency of words
B. To remove stop words
C. To reduce words to their base/root form
D. To convert speech into text

36 **Which of the following is a key difference between stemming and lemmatization?**
A. Stemming uses machine learning
B. Lemmatization uses a dictionary; stemming does not
C. Lemmatization is faster than stemming
D. Stemming only works in English

37 **Which tool is likely to convert "running" to "run" by understanding it’s a verb?**
A. Stop word remover
B. Lemmatizer
C. Tokenizer
D. Stemmer

38 **What would a stemmer likely reduce the word “connection” to?**
A. Connect
B. Connection
C. Connecting
D. Connec

39 **Which of the following statements is true?**
A. Stemming provides more accurate results than lemmatization
B. Lemmatization is mostly used in search engines only

C. Lemmatization requires understanding the word's part of speech
D. Stemming uses dictionaries and grammar rules

40 **Which of the following is the most appropriate scenario to use lemmatization instead of stemming?**
A. When you need fast, rough root word extraction for search indexing
B. When you don't care about word meaning
C. When accuracy and proper grammar context are important
D. When dealing with programming keywords only

Section B:

41 Differentiate between Script bot and Smart bot.
42 How does text normalization reduce the vocabulary of a corpus?
43 How many tokens are there in the sentence given below?
Transparency is all about knowing who, why, what, how and how much. Seeking and receiving information is a human right that can act as a safeguard against corruption and increase trust in decision-makers and public institutions.
44 What is the significance of converting the text into a common case? Give example.
45 Explain lemmatization and stemming

Section C:

46 Through a step-by-step process, explain TFIDF for the given corpus
Document 1: To the swinging and the ringing
Document 2: of the bells, bells, bells
Document 3: Of the bells, bells, bells, bells
Document 4: Bells, bells, bells
Document 5: To the rhyming and the chiming of the bells.
47 With a neat diagram explain all stages of AIPC
48 Through a step-by-step process, explain Text Normalization for the given corpus:
Document 1: Row, row, row your boat
Document 2: Gently down the stream
Document 3: Merrily, merrily, merrily, merrily
Document 4: Life is but a dream
49 Explain ANN with a help of a diagram
50 Through a step-by-step process, Explain BoW algorithm for the given corpus
Document 1: Johny Johny, Yes Papa,
Document 2: Eating sugar? No Papa
Document 3: Telling lies? No Papa
Document 4: Open your mouth, Ha! Ha! Ha!