

CBSE CLASS X

Artificial Intelligence (417)

QUESTION PAPER

From previous CBSE Board Exam questions

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Questions: 53

Maximum Marks: 90

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SELECTIONS USED

Source	Previous-year board
Subject	Artificial Intelligence
Lessons	Natural Language Processing
Year	2022-2026
Questions selected	53

Composition — Types: 24 MCQ · 11 Short · 5 Long · 4 Very short · 2 competency · 2 Case-based · 2 fill_in_blank · 1 Assertion–reason

Q1. § 1.2: Introduction to AI Domains § Test Yourself § Reflection Time

[4]

Categorise the following examples under the given three AI domains — Data Science, NLP and Computer Vision with justification :

- (a) Recommendation Websites
- (b) Voice-based Virtual Assistants
- (c) Spam Filters
- (d) Airline Route Planning

Previously asked in: 2025 104/S Q20

♦ Revisiting AI Project Cycle & Ethical Frameworks for AI

1.2 Introduction to AI Domains

6.2 Applications of NLP

Q2. § Unit Overview § Test Yourself § Reflection Time

[4]

Consider the following scenarios and identify which AI domain would be most appropriate for each, with justification:

- (A) An AI based education platform needs to translate to English language and analyze thousands of student essays to provide instant feedback on grammar, content quality and writing style. [2]
- (B) An AI based application installed on a busy crossing in a metropolitan city scans all vehicles driving through that crossing during peak traffic hours and categorizes them into four wheelers and two wheelers. [2]

Previously asked in: 2026 104 Q18

♦ Revisiting AI Project Cycle & Ethical Frameworks for AI

1.2 Introduction to AI Domains

6.2 Applications of NLP

Computer Vision Applications – Object Detection and Classification

Q3. § 5.2 Computer Vision Tasks

[2]

Differentiate between Computer Vision (CV) and Natural Language Processing (NLP).

Previously asked in: 2024 104 Q11

♦ Computer Vision

5.2 Computer Vision Tasks

6.2 Applications of NLP

Q4. § Unit Overview and Learning Objectives**[2]**

With reference to data processing, expand the term TFIDF. Also give any two applications of TFIDF.

Previously asked in: 2023 104 Q16

♦ Natural Language Processing

6.2 Applications of NLP

6.5 Text Processing

Q5. § 6.2 Applications of Natural Language Processing § 6.6 Natural Language Processing: Use Case Walkthrough**[1]**

This real life application of NLP is used to provide an overview of a news item or blog post, while avoiding redundancy from multiple sources and maximising the diversity of content obtained. Which is this application ?

- (a) Chatbot
- (b) Virtual Assistant
- (c) Sentiment Analysis
- (d) Automatic Summarisation

Previously asked in: 2024 104 Q2 (ii)

♦ Natural Language Processing

6.2 Applications of NLP

Q6. § 6.2 Applications of Natural Language Processing § 6.3 Stages of Natural Language Processing (NLP) § Test Yourself and Reflection**[1]**

Time

Which of the following words represent an example of a lemma resulting from lemmatisation for "caring" in context to Natural Language Processing (NLP) ?

- (a) Care
- (b) Cared
- (c) Cares
- (d) Car

Previously asked in: 2024 104 Q2 (iv)

♦ Natural Language Processing

6.5 Text Processing

Q7. § Unit Overview and Learning Objectives § 6.3 Stages of Natural Language Processing (NLP) § Test Yourself and Reflection Time**[1]**

Which of the following applications is not associated with Natural Language Processing (NLP) ?

- (a) Sentiment Analysis
- (b) Speech Recognition
- (c) Spam Filtering in emails
- (d) Stock Market Analysis

Previously asked in: 2024 104 Q3 (vi)

♦ Natural Language Processing

6.2 Applications of NLP

Q8. § Unit Overview and Learning Objectives**[1]**

Bag of Words is a _____ model which helps in extracting features out of the text which can be helpful in machine learning algorithms.

- (a) Data Science (DS)
- (b) Virtual Reality (VR)
- (c) Natural Language Processing (NLP)
- (d) Computer Vision (CV)

Previously asked in: 2024 104 Q4 (iii)

♦ Natural Language Processing

6.5 Text Processing

Q9. § 6.2 Applications of Natural Language Processing**[1]**

Which NLP application helps in converting natural speech into text in real time ?

- (A) Keyword Extraction tool
- (B) Translation of books from English to Hindi language
- (C) Auto generated captions on YouTube
- (D) Classifying raw text into pre-defined groups

Previously asked in: 2026 104 Q3 (v)

♦ Natural Language Processing

6.2 Applications of NLP

Q10. § Test Yourself and Reflection Time**[1]**

Assertion (A) : Converting text to lowercase is preferable in text preprocessing.

Reason (R) : It ensures that "Hello" and "hello" are treated as the same word by the machine.

- (A) Both (A) and (R) are true and (R) is the correct explanation of (A).
- (B) Both (A) and (R) are true, but (R) is not the correct explanation of (A).
- (C) (A) is true, but (R) is false.
- (D) (A) is false, but (R) is true.

Previously asked in: 2026 104 Q5 (ii)

♦ Natural Language Processing

6.5 Text Processing

Q11. § 6.2 Applications of Natural Language Processing § 6.4 Chatbots § 6.6 Natural Language Processing: Use Case Walkthrough**[1]**

A company wants to analyze customer reviews to understand satisfaction levels. Which NLP application would be most suitable ?

- (A) Text classification
- (B) Sentiment analysis
- (C) Keyword extraction
- (D) Language translation

Previously asked in: 2026 104 Q5 (v)

♦ Natural Language Processing

6.2 Applications of NLP

Q12. § Test Yourself and Reflection Time**[2]**

How is Stemming different from Lemmatization ? Explain how the word "Wolves" would be processed by stemming and lemmatization.

Previously asked in: 2026 104 Q16

♦ Natural Language Processing

6.5 Text Processing

Q13. § Unit Overview and Learning Objectives § 6.3 Stages of Natural Language Processing (NLP) § Test Yourself and Reflection Time**[1]**

A corpus contains 4 documents in which the words such as 'an, is, the' were appearing frequently. Identify the term that is used for such words.

- (A) Stop word
- (B) Rare word
- (C) Missing word
- (D) Removable word

Previously asked in: 2024 104 Q2 (vi)

♦ Natural Language Processing

6.5 Text Processing

Q14. § 6.2 Applications of Natural Language Processing § 6.3 Stages of Natural Language Processing (NLP) § 6.6 Natural Language Processing: Use Case Walkthrough [1]

Which application of NLP helps to provide an overview of a news item or blog post ? It also avoids redundancy from multiple sources and maximises the diversity of content obtained.

- (A) Virtual Assistants
- (B) Sentiment Analysis
- (C) Text Classification
- (D) Automatic Summarization

Previously asked in: 2024 104 Q3 (v)

♦ Natural Language Processing 6.2 Applications of NLP

Q15. § Unit Overview and Learning Objectives § Test Yourself and Reflection Time [1]

Mention any two commonly used applications of NLP.

Previously asked in: 2022 104 Q8

♦ Natural Language Processing 6.2 Applications of NLP

Q16. § 6.3 Stages of Natural Language Processing (NLP) [1]

Name the process of dividing whole corpus into sentences.

Previously asked in: 2022 104 Q10

♦ Natural Language Processing 6.5 Text Processing

Q17. § 6.3 Stages of Natural Language Processing (NLP) § 6.6 Natural Language Processing: Use Case Walkthrough [1]

Which of the following applications of NLP (Natural Language Processing) is associated with spam filtering in e-mails ?

- (A) Virtual Assistants
- (B) Sentiment Analysis
- (C) Text Classification
- (D) Automatic Summarization

Previously asked in: 2024 104 Q4 (v)

♦ Natural Language Processing 6.2 Applications of NLP

Q18. § Unit Overview and Learning Objectives § 6.3 Stages of Natural Language Processing (NLP) § Test Yourself and Reflection Time [1]

In the context of NLP, which of the following words represents a stem resulting from stemming for "Studies" ?

- (A) Study
- (B) Stud
- (C) Studi
- (D) Studied

Previously asked in: 2024 104 Q5 (iv)

♦ Natural Language Processing 6.5 Text Processing

Q19. § Test Yourself and Reflection Time [2]

What is Tokenization? Count how many tokens are present in the following statement:

I find that the harder I work, the more luck I seem to have.

Previously asked in: 2022 104 Q15

♦ Natural Language Processing 6.5 Text Processing

Q20. § Test Yourself and Reflection Time**[2]**

Kaira, a beginner in the field of NLP is trying to understand the process of Stemming. Help her in filling up the following table by suggesting appropriate affixes and stem of the words mentioned there:

Previously asked in: 2022 104 Q16

♦ Natural Language Processing

6.5 Text Processing

Q21. § Unit Overview and Learning Objectives § 6.3 Stages of Natural Language Processing (NLP) § Test Yourself and Reflection Time**[4]**

With reference to NLP, explain the following terms in detail with the help of suitable example:

- Term frequency
- Inverse Document Frequency

Previously asked in: 2022 104 Q20

♦ Natural Language Processing

6.5 Text Processing

Q22. § 6.5 Text Processing § Test Yourself and Reflection Time**[2]**

What is the primary difference between Human Language and Computer Language ?

Previously asked in: 2024 104 Q15

♦ Natural Language Processing

6.2 Applications of NLP

Q23. § Unit Overview and Learning Objectives**[4]**

Document 1 : NLP is a domain of AI.

Document 2 : NLP stands for Natural Language Processing.

Consider the following documents : Implement all the four steps of Bag of Words (BoW) model to create a document vector table.

Previously asked in: 2024 104 Q20

♦ Natural Language Processing

6.5 Text Processing

Q24. § 6.2 Applications of Natural Language Processing § 6.4 Chatbots § 6.6 Natural Language Processing: Use Case Walkthrough**[1]**

Email filters, spam filters, smart assistants are the examples of:

- (a) Pocket Assistants
- (b) CV
- (c) NLP
- (d) Evaluation

Previously asked in: 2023 104 Q3 (i)

♦ Natural Language Processing

6.2 Applications of NLP

Q25. § 6.3 Stages of Natural Language Processing (NLP) § Test Yourself and Reflection Time**[1]**

For _____ the whole corpus is divided into sentences. Each sentence is taken as a different data so now the whole corpus gets reduced to sentences.

- (a) Text Regulation
- (b) Sentence Segmentation
- (c) Tokenisation
- (d) Stemming

Previously asked in: 2023 104 Q3 (iii)

♦ Natural Language Processing

6.5 Text Processing

Q26. § 6.1 Introduction § 6.3 Stages of Natural Language Processing (NLP) § Test Yourself and Reflection Time**[1]**

With reference to NLP, consider the following plot of occurrence of words versus their value: In the given graph, X represents:

- (a) Rare / valuable words
- (b) Punctuation words
- (c) Popular words
- (d) Pronoun

Previously asked in: 2023 104 Q3 (vi)

♦ Natural Language Processing 6.5 Text Processing

Q27. § Unit Overview and Learning Objectives § 6.6 Natural Language Processing: Use Case Walkthrough § Test Yourself and Reflection Time**[1]**

Which of the following is a feature of document classification?

- (a) Helps in classifying the type and genre of a document.
- (b) Helps in creating a document.
- (c) Helps to display important information of a corpus.
- (d) Helps in including the necessary words in the text body.

Previously asked in: 2023 104 Q4 (i)

♦ Natural Language Processing 6.2 Applications of NLP

Q28.**[1]**

Which of the following words represents an example of stemming for the word 'Sharing'?

- (A) Share
- (B) Shared
- (C) Shares
- (D) Shar

Previously asked in: 2025 104/S Q2 (iv)

♦ Natural Language Processing 6.5 Text Processing

Q29. § Test Yourself and Reflection Time**[1]**

_____ is a term used for any word or number or special character occurring in a sentence. (Token / Punctuator)

Previously asked in: 2023 104 Q5 (i)

♦ Natural Language Processing 6.5 Text Processing

Q30. § Unit Overview and Learning Objectives § 6.3 Stages of Natural Language Processing (NLP) § Test Yourself and Reflection Time**[1]**

In the sentence 'She reads the book', which of the following is a stop-word that should be removed during text preprocessing?

- (A) She
- (B) reads
- (C) the
- (D) book

Previously asked in: 2025 104/S Q3 (vi)

♦ Natural Language Processing 6.5 Text Processing

Q31. § Unit Overview and Learning Objectives § 6.3 Stages of Natural Language Processing (NLP) § 6.6 Natural Language Processing: Use Case Walkthrough [1]

In Natural Language Processing (NLP), _____ occur/s very frequently in the corpus but do/does not add any value to it.

- (A) Text Normalisation
- (B) Stop words
- (C) Start words
- (D) Tokenisation

Previously asked in: 2025 104/S Q4 (i)

♦ Natural Language Processing 6.5 Text Processing

Q32. § Test Yourself and Reflection Time [1]

The first step of Bag of Words algorithm is Text Normalisation. Which of the following task is done in this step?

- (A) Creating document vectors
- (B) Collecting and pre-processing data
- (C) Adding the words to a dictionary
- (D) Creating a vector of words

Previously asked in: 2025 104/S Q4 (iv)

♦ Natural Language Processing 6.5 Text Processing

Q33. § 6.2 Applications of Natural Language Processing § 6.6 Natural Language Processing: Use Case Walkthrough [1]

Sentiment analysis of customer reviews on various online stores is an example of _____.

- (A) Machine Learning
- (B) Computer Vision
- (C) Natural Language Processing (NLP)
- (D) Speech Recognition

Previously asked in: 2025 104/S Q5 (i)

♦ Natural Language Processing 6.2 Applications of NLP

Q34. § 6.1 Introduction [1]

Consider the following sentence:

On seeing her son's result, Pooja's face turned red with anger.

The word "red" demonstrates which characteristic of natural language ?

- (A) Redundancy
- (B) Context-dependent meaning
- (C) Grammatical structure
- (D) Temporal change

Previously asked in: 2026 104 Q2 (ii)

♦ Natural Language Processing Characteristics of Natural Language – Ambiguity (Polysemy/Context-dependent meaning)

Q35. [1]

Two popular examples of pocket assistants are _____ and _____.

Previously asked in: 2023 104 Q2 (i)

♦ Natural Language Processing Pocket Assistants / Virtual Assistants (e.g., Siri, Google Assistant)

Q36. § Unit Overview and Learning Objectives

[4]

Create a document vector table from the following documents by implementing all the four steps of Bag of words model. Also depict the outcome of each step.

Document 1: Sameera and Sanya are classmates.

Document 2: Sameera likes dancing but Sanya loves to study mathematics.

Previously asked in: 2023 104 Q19

◆ Natural Language Processing

6.3 Stages of NLP

6.5 Text Processing

Q37. § Unit Overview and Learning Objectives

[4]

Document 1 : CV is an upcoming field.

Document 2 : Image Feature is an important part of CV.

You have two documents :

Document 1 : CV is an upcoming field.

Document 2 : Image Feature is an important part of CV.

Implement all four steps of the Bag of Words (BoW) model to create a document vector table. Depict the outcome of each step.

Previously asked in: 2025 104/S Q19

◆ Natural Language Processing

6.3 Stages of NLP

6.5 Text Processing

Q38. § Unit Overview and Learning Objectives § Test Yourself and Reflection Time

[4]

Consider the following two documents :

Document 1 : ML and DL are part of AI.

Document 2 : DL is a subset of ML.

Implement all four steps of the Bag of Words (BoW) model to create a document vector table. Depict the outcome of each step.

Previously asked in: 2024 104 Q19

◆ Natural Language Processing

6.3 Stages of NLP

6.5 Text Processing

Q39. § Unit Overview and Learning Objectives

[4]

Document 1 : Data Science requires information.

Document 2 : Information analysis requires data.

Implement all the four steps of Bag of Words (BoW) model to create a document vector table.

Previously asked in: 2026 104 Q21

◆ Natural Language Processing

6.3 Stages of NLP

6.5 Text Processing

Q40. § 6.3 Stages of Natural Language Processing (NLP)

[1]

What is NLP?

Previously asked in: 2022 104 Q7

◆ Natural Language Processing

Q41. § Unit Overview and Learning Objectives § 6.3 Stages of Natural Language Processing (NLP) § Test Yourself and Reflection Time

[2]

Explain the following picture which depicts one of the processes on NLP. Also mention the purpose which will be achieved by this process.

Previously asked in: 2022 104 Q18

◆ Natural Language Processing

6.3 Stages of NLP

6.5 Text Processing

Q42. § Unit Overview and Learning Objectives

[4]

Consider the text of following documents:

Document 1: Sahil likes to play cricket

Document 2: Sajal likes cricket too

Document 3: Sajal also likes to play basketball

Apply all the four steps of Bag of words model of NLP on the above given documents and generate the output.

Previously asked in: 2022 104 Q19

♦ Natural Language Processing

6.3 Stages of NLP

6.5 Text Processing

Q43. § 6.4 Chatbots

[2]

Define Chatbot. What are its types?

Previously asked in: 2023 104 Q13

♦ Natural Language Processing

6.4 Chatbots

Q44. § 6.2 Applications of Natural Language Processing § 6.4 Chatbots

[1]

Which domain of AI is used for interacting with virtual assistants such as Siri and Alexa ?

- (a) Machine Learning (ML)
- (b) Computer Vision (CV)
- (c) Natural Language Processing (NLP)
- (d) Technical Vision (TV)

Previously asked in: 2024 104 Q5 (vi)

♦ Natural Language Processing

6.4 Chatbots

Q45. § 6.4 Chatbots

[1]

Which type of chat bot requires coding and works on bigger databases directly ?

- (A) Script bot
- (B) Smart bot
- (C) Traditional bot
- (D) Rule-based bot

Previously asked in: 2026 104 Q4 (vi)

♦ Natural Language Processing

6.4 Chatbots

Q46. § 6.4 Chatbots

[2]

What are the primary differences between Script-bots and Smart-bots ?

Previously asked in: 2024 104 Q12

♦ Natural Language Processing

6.4 Chatbots

Q47. § 6.2 Applications of Natural Language Processing § 6.4 Chatbots

[1]

Name any two currently popular virtual assistants.

Previously asked in: 2022 104 Q9

♦ Natural Language Processing

6.4 Chatbots

Q48. § 6.4 Chatbots**[2]**

Differentiate between Script-bot and Smart-bot.

Previously asked in: 2025 104/S Q12; 2022 104 Q13 — 2×

♦ Natural Language Processing

6.4 Chatbots

Q49. § 6.4 Chatbots**[1]**

Which type of chat-bot has a wide functionality, is flexible and powerful, and works on bigger databases directly ?

Previously asked in: 2024 104 Q5 (vi)

♦ Natural Language Processing

6.4 Chatbots

Q50. § 6.4 Chatbots**[1]**

Select the correct features of Smart Bot:

- (a) Smart-bots are flexible and powerful
- (b) Coding is required to take this up on board
- (c) Smart bots work on bigger databases and other resources directly
- (d) All of the above

Previously asked in: 2023 104 Q3 (ii)

♦ Natural Language Processing

6.4 Chatbots

Q51. § 6.2 Applications of Natural Language Processing**[1]**

Smart Assistants such as Alexa, Siri are the examples of:

- (a) Natural Language Processing
- (b) Data Science
- (c) Machine Learning
- (d) Computer Vision

Previously asked in: 2023 104 Q5 (iii)

♦ Natural Language Processing

6.2 Applications of NLP

6.4 Chatbots

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