CBSE CLASS X

Artificial Intelligence (417)

QUESTION PAPER

From previous CBSE Board Exam questions

Code: DY4OAC **Questions: 31** **Maximum Marks: 60** **Generated: 2026-06-21 02:53**

SELECTIONS USED

Source	Previous-year board
Subject	Artificial Intelligence
Lessons	Advanced Concepts of Modeling in AI
Year	2022-2026
Questions selected	31

Composition — Types: 12 MCQ · 8 Long · 6 Short · 2 true_false · 1 Assertion–reason

Q1. § Unit Overview § Reflection Time **[4]**

Will it be valid to say that not all the devices which are termed as "smart" are AI-enabled? Justify this statement. Explain any two examples from the daily life which are commonly misunderstood as AI.

Previously asked in: 2023 104 Q20

◆ **Revisiting AI Project Cycle & Ethical Frameworks for AI** 1.2 Introduction to AI Domains 2.1 Revisiting AI, ML, DL

Q2. § 1.2: Introduction to AI Domains **[1]**

Which of the following represents an example of a recommendation system ?

(a) An online clothing store that offers a wide variety of clothing options.
(b) A search engine that retrieves relevant web pages based on user queries.
(c) An e-commerce website that displays customer reviews and ratings for products.
(d) A music streaming platform that suggests songs and playlists based on user listening history.

Previously asked in: 2024 104 Q4 (iv)

◆ **Revisiting AI Project Cycle & Ethical Frameworks for AI** 1.2 Introduction to AI Domains Collaborative Filtering / Recommendation Systems

Q3. **[2]**

What is Dimensionality Reduction?

Previously asked in: 2023 104 Q12

◆ **Advanced Concepts of Modeling in AI** 2.1 Revisiting AI, ML, DL

Q4. § 2.1 Revisiting AI, ML, DL **[4]**

Ms. Sooji is a beginner in the field of Artificial Intelligence. She got confused among the core terms like Artificial Intelligence (AI), Machine Learning (ML) and Deep Learning (DL). Many a times, these terms are used interchangeably but are they the same? Justify your answer. Help her in understanding these terms by drawing a well labelled diagram to depict the interconnection of these three fields.

Previously asked in: 2023 104 Q17

◆ **Advanced Concepts of Modeling in AI** 2.1 Revisiting AI, ML, DL

Q5. § Unit-2: Advanced Concepts of Modeling in AI – Introduction | § 2.2 Modelling | § Test Yourself (MCQs and Assertion-Reasoning) **[1]**

Which learning approach would be most suitable for training an AI model to park the car correctly ?

(A) Supervised Learning
(B) Unsupervised Learning
(C) Transfer Learning
(D) Reinforcement Learning

Previously asked in: 2026 104 Q2 (v)

◆ **Advanced Concepts of Modeling in AI** | 2.1 Revisiting AI, ML, DL

Q6. § 2.1 Revisiting AI, ML, DL | § 2.2 Modelling **[1]**

When a machine possesses the ability to mimic human traits, i.e., make decisions, predict the future, learn, and improve on its own, it is said to have :

(a) Computational Skills
(b) Learning Capability
(c) Artificial Intelligence
(d) Cognitive Processing

Previously asked in: 2024 104 Q5 (ii)

◆ **Advanced Concepts of Modeling in AI** | 2.1 Revisiting AI, ML, DL

Q7. § 2.1 Revisiting AI, ML, DL **[2]**

Differentiate between Machine Learning (ML) and Deep Learning (DL).

Previously asked in: 2024 104 Q11

◆ **Advanced Concepts of Modeling in AI** | 2.1 Revisiting AI, ML, DL

Q8. § Test Yourself (MCQs and Assertion-Reasoning) **[2]**

For a healthcare organisation's objective of predicting disease outbreaks and efficiently allocating resources through the analysis of medical records, would you recommend using supervised learning or unsupervised learning as the preferred machine learning approach ? Explain your choice briefly.

Previously asked in: 2024 104 Q14

◆ **Advanced Concepts of Modeling in AI** | 2.1 Revisiting AI, ML, DL

Q9. § Test Yourself (MCQs and Assertion-Reasoning) **[2]**

Give two differences between Supervised and Unsupervised learning.

Previously asked in: 2026 104 Q14

◆ **Advanced Concepts of Modeling in AI** | 2.1 Revisiting AI, ML, DL

Q10. § 2.1 Revisiting AI, ML, DL **[4]**

Differentiate between Deep Learning, Artificial Intelligence and Machine Learning. Also draw a labelled Venn diagram depicting the relationship between AI, ML and DL.

Previously asked in: 2026 104 Q17

◆ **Advanced Concepts of Modeling in AI** | 2.1 Revisiting AI, ML, DL

Q11. § 2.2 Modelling § Test Yourself (MCQs and Assertion-Reasoning) § Reflection Time **[1]**

Assertion (A) : When a machine is able to mimic human traits, it is said to be artificially intelligent.
Reason (R) : A fully automatic washing machine is artificially intelligent.
(A) Both (A) and (R) are correct and (R) is the correct explanation of (A).
(B) Both (A) and (R) are correct and (R) is not the correct explanation of (A).
(C) (A) is correct but (R) is not correct.
(D) (A) is not correct but (R) is correct.

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

Previously asked in: 2024 104 Q2 (i)

◆ **Advanced Concepts of Modeling in AI** 2.1 Revisiting AI, ML, DL

Q12. § Unit-2: Advanced Concepts of Modeling in AI – Introduction § Activity 1: Human Neural Network – The Game § Reflection Time **[1]**

Which form of learning-based approach does the following diagram indicate ?

(A) Clustering
(B) Classification
(C) Regression
(D) Dimensionally Reduction

Previously asked in: 2024 104 Q4 (iv)

◆ **Advanced Concepts of Modeling in AI** 2.1 Revisiting AI, ML, DL

Q13. § 2.1 Revisiting AI, ML, DL § 2.2 Modelling **[1]**

Musical intelligence is a concept that

(A) assesses one's ability to regulate, measure and understand numerical symbols, abstraction and logic.
(B) measures the language processing skills both in terms of understanding or implementation in writing or verbally.
(C) evaluates the ability to process information on the environment around us.
(D) describes a person's ability to recognize and create sounds, rhythms and sound patterns.

Previously asked in: 2024 104 Q5 (i)

◆ **Advanced Concepts of Modeling in AI** 2.1 Revisiting AI, ML, DL

Q14. § 2.1 Revisiting AI, ML, DL § 2.2 Modelling § Test Yourself (MCQs and Assertion-Reasoning) **[1]**

State True/False : Machine learning and Deep learning are part of Artificial Intelligence, but not everything that is Machine learning will be Deep learning.

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

◆ **Advanced Concepts of Modeling in AI** 2.1 Revisiting AI, ML, DL

Q15. § Unit-2: Advanced Concepts of Modeling in AI – Introduction § 2.2 Modelling **[1]**

In this learning model, the data set which is fed to the machine is labelled. Name the model.

Previously asked in: 2023 104 Q4 (vi)

◆ **Advanced Concepts of Modeling in AI** 2.1 Revisiting AI, ML, DL

Q16. § Unit-2: Advanced Concepts of Modeling in AI – Introduction § 2.2 Modelling § Test Yourself (MCQs and Assertion-Reasoning) **[1]**

It refers to the unsupervised learning algorithm which can cluster the unknown data according to the patterns or trends identified out of it.

(a) Regression
(b) Classification
(c) Clustering
(d) Dimensionality reduction

Previously asked in: 2023 104 Q5 (v)

◆ **Advanced Concepts of Modeling in AI** 2.1 Revisiting AI, ML, DL

Q17. § 2.3 Artificial Neural Networks **[1]**

In a neural network, what is the function of the input layer?

(A) It performs mathematical operations on the input data.
(B) It connects neurons to the output layer for predictions.
(C) It receives and passes the raw input data to the hidden layers.
(D) It stores weights and biases for neural network training.

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

◆ **Advanced Concepts of Modeling in AI** 2.3 Artificial Neural Networks

Q18. § Test Yourself (MCQs and Assertion-Reasoning) **[4]**

Explain the following with respect to Unsupervised Learning Models :

(a) Clustering

(b) Dimensionality Reduction

Previously asked in: 2025 104/S Q18

◆ **Advanced Concepts of Modeling in AI** 2.1 Revisiting AI, ML, DL 2.2 Modelling

Q19. § Unit-2: Advanced Concepts of Modeling in AI – Introduction § Test Yourself (MCQs and Assertion-Reasoning) § Reflection Time **[1]**

Which form of unsupervised learning does the following diagram indicate ?

(a) Clustering
(b) Regression
(c) Reinforcement learning
(d) Classification

Previously asked in: 2024 104 Q4 (ii)

◆ **Advanced Concepts of Modeling in AI** 2.2 Modelling

Q20. **[1]**

Which scenario best represents a regression problem ?

(A) Identifying whether an email is spam.
(B) Grouping customers by behaviour.
(C) Predicting tomorrow's temperature.
(D) Recognizing faces in photos.

Previously asked in: 2026 104 Q4 (iii)

◆ **Advanced Concepts of Modeling in AI** 2.2 Modelling

Q21. § 2.3 Artificial Neural Networks **[4]**

What are Neural networks ? Briefly explain all the layers of a neural network.

Previously asked in: 2024 104 Q17

◆ **Advanced Concepts of Modeling in AI** 2.3 Artificial Neural Networks

Q22. § 2.2 Modelling § Test Yourself (MCQs and Assertion-Reasoning) § Reflection Time **[2]**

Give any two characteristics of a Classification Model.

Previously asked in: 2026 104 Q12

◆ **Advanced Concepts of Modeling in AI** 2.2 Modelling

Q23. § Unit-2: Advanced Concepts of Modeling in AI – Introduction § Test Yourself (MCQs and Assertion-Reasoning) § Reflection Time **[4]**

Consider the following graphs (Figure 1 and Figure 2) that demonstrate the two types of Supervised Learning Models of Artificial Intelligence. Identify and explain each model giving suitable examples of each.

Previously asked in: 2024 104 Q20

◆ **Advanced Concepts of Modeling in AI** 2.1 Revisiting AI, ML, DL 2.2 Modelling

Q24. § Unit-2: Advanced Concepts of Modeling in AI – Introduction § 2.2 Modelling § Reflection Time **[4]**

Consider the following diagram. It explains how a system of organized machine learning algorithms perform certain tasks. Identify the concept and explain its working.

Previously asked in: 2024 104 Q19

◆ **Advanced Concepts of Modeling in AI** 2.3 Artificial Neural Networks

Q25. § 2.2 Modelling § Test Yourself (MCQs and Assertion-Reasoning) **[1]**

Regression is one of the type of supervised learning model, where data is classified according to labels and data need not to be continuous. (True / False)

Previously asked in: 2023 104 Q2 (v)

◆ **Advanced Concepts of Modeling in AI** 2.2 Modelling

Q26. § 2.3 Artificial Neural Networks § Test Yourself (MCQs and Assertion-Reasoning) § Reflection Time **[1]**

Which of the following is the correct feature of Neural network?

(a) It can improve the efficiency of two models.
(b) It is useful with small dataset.
(c) They are modelled on human brains and nervous system.
(d) They need human intervention.

Previously asked in: 2023 104 Q4 (iii)

◆ **Advanced Concepts of Modeling in AI** 2.3 Artificial Neural Networks

Q27. § Unit-2: Advanced Concepts of Modeling in AI – Introduction **[1]**

The following diagram indicates :

(A) Classification
(B) Regression
(C) Reinforcement learning
(D) Clustering

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

◆ **Advanced Concepts of Modeling in AI** 2.1 Revisiting AI, ML, DL 2.2 Modelling

Q28. § Reflection Time **[1]**

An e-commerce platform analyzes customer purchase patterns to recommend "Customers who bought product X also bought product Y." This uses :

(A) Classification model
(B) Regression model
(C) Association model
(D) Clustering model

Previously asked in: 2026 104 Q3 (iii)

◆ **Advanced Concepts of Modeling in AI** Collaborative Filtering / Recommendation Systems

Q29. § 5.6 Convolution Neural Networks (CNN) **[4]**

Answer the following:

(A) Expand and define the terms CNN and ANN. [3]

(B) In the diagram of neural network given below, identify the layer that should be depicted in Box 1 and Box 2: [1]

Previously asked in: 2026 104 Q20

◆ **Computer Vision** 2.3 Artificial Neural Networks 5.6 Convolution Neural Networks (CNN)

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