



B.K. BIRLA CENTRE FOR EDUCATION

SARALA BIRLA GROUP OF SCHOOLS
A CBSE DAY-CUM-BOYS' RESIDENTIAL SCHOOL



PERIODIC TEST 1 2026-2027 ARTIFICIAL INTELLIGENCE (417) Set-02

Class: X

Date:

Admission No.

Time : 1 hr. 30 mins

Max Marks: 25

Roll No. :

General Instructions:

1. Please read the instructions carefully.
2. This Question Paper contain two sections: Section A & Section B.
3. Section A has Objective type questions whereas Section B contains Subjective type questions.
4. All questions of a particular section must be attempted in the correct order.
5. **SECTION A - OBJECTIVE TYPE QUESTIONS (07 MARKS):**
 - i. This section has 01 question.
 - ii. Marks allotted are mentioned against question/part.
 - iii. There is no negative marking.
 - iv. Do as per the instructions given.
6. **SECTION B – SUBJECTIVE TYPE QUESTIONS (18 MARKS):**
 - i. This section has 12 questions.
 - ii. A candidate has to do 8 questions.
 - iii. Do as per the instructions given.
 - iv. Marks allotted are mentioned against each question/part.

SECTION A: OBJECTIVE TYPE QUESTIONS

Q.(1) Answer any 7 out of the given 10 questions :

(7 x 1 = 7)

- (i) a. Image recognition
- (ii) b. Step-by-step guidance
- (iii) a. Image recognition
- (iv) b. Step-by-step guidance
- (v) b. Learning from Data
- (vi) d. Recommendation systems
- (vii) b. Marked or tagged data
- (viii) b. Unlabelled dataset
- (ix) a. Preposition
- (x) d. Adjective

SECTION B: SUBJECTIVE TYPE QUESTIONS

Answer any 6 out of the given 10 questions:

(6 x 2 = 12)

Q. (2) Explain any two applications of statistical data.

- **Business Decision Making:** Statistical data helps companies analyse sales trends, customer preferences, and market demand to make better decisions.
- **Healthcare Analysis:** It is used to track diseases, evaluate treatments, and improve healthcare services through data analysis.

Q. (3) Write and explain any two concerns of AI.

- **Job Displacement:** AI can automate tasks, which may reduce the need for human workers in some industries.
- **Lack of Transparency:** Some AI systems work like “black boxes,” making it difficult to understand how decisions are made.

Q. (4) What is Virtue-based ethical framework?

It is an ethical approach that focuses on moral values and character traits such as honesty, kindness, and integrity while making decisions.

Q. (5) What is Data Exploration?

Data exploration is the process of analysing and understanding the collected data using statistics and visualisation techniques to find patterns and insights.

Q. (6) Define Machine Learning.

Machine Learning is a branch of AI that enables computers to learn from data and improve performance without being explicitly programmed.

Q. (7) What do you mean by a training data set?

A training dataset is the set of data used to teach an AI model so that it can learn patterns and make predictions.

Q. (8) Define Convolutional Neural Network.

A Convolutional Neural Network (CNN) is a type of deep learning model used mainly for image recognition and processing.

Q. (9) What is Classification?

Classification is a supervised learning technique where data is grouped into predefined categories or classes.

Q. (10) Why is body language important?

Body language is important because it helps convey feelings and attitudes, supports verbal communication, and improves understanding between people.

Q. (11) What are Writing Skills?

Writing skills refer to the ability to express ideas clearly and effectively in written form using proper grammar, vocabulary, and structure.

Answer any 2 out of the given 4 questions:

(2 x 3 = 6)

Q. (10) What is the need of ethical frameworks for AI?

Ethical frameworks are needed in AI to guide responsible development and use. They help ensure fairness, prevent bias, protect privacy, and make AI systems accountable and transparent in their decisions.

Q. (11) Explain how computer vision is critical to a self-driving car.

Computer vision enables a self-driving car to “see” and understand its surroundings using cameras and sensors. It helps the car:

- Detect pedestrians, vehicles, and obstacles
- Recognize traffic signs and signals
- Understand road conditions and lane markings
- Make real-time decisions for safe navigation

Without computer vision, the car would not be able to interpret visual data, making autonomous driving impossible.

Q. (12) Differentiate between Machine Learning and Deep Learning

Machine Learning	Deep Learning
Subset of AI that learns from data	Subset of ML using neural networks
Works well with smaller datasets	Requires large amounts of data
Needs human feature selection	Automatically extracts features
Less complex models	More complex (multi-layered networks)
Example: Spam detection	Example: Image recognition

Q. (13) Explain the working of Neural Network.

A neural network works in layers:

- **Input Layer:** Receives input data
- **Hidden Layers:** Process data using weights and activation functions
- **Output Layer:** Produces the final result

The network learns by adjusting weights based on errors using a process called training. This helps it improve accuracy over time and make better predictions.

***** ALL THE BEST *****