



Delhi Public School, Howrah

PERIODIC TEST – II (2025-2026)

CLASS – IX

Care must be taken not to write anything on the question paper. All the questions must be attempted in the correct sequence.

SUBJECT: ARTIFICIAL INTELLIGENCE (417)

THEORY EXAMINATION

Time Allowed:- 2 Hours

F.M.-50

General Instructions:

1. Please read the instructions carefully.
2. This Question Paper consists of 21 questions in two sections: Section A & Section B.
3. Section A has Objective type questions whereas Section B contains Subjective type questions.
4. **Out of the given (5 + 16 =) 21 questions, a candidate has to answer (5 + 10 =) 15 questions in the allotted (maximum) time of 2 hours.**
5. All questions of a particular section must be attempted in the correct order.
6. **SECTION A - OBJECTIVE TYPE QUESTIONS (24 MARKS):**
 - i. This section has 05 questions.
 - ii. Marks allotted are mentioned against each question/part.
 - iii. There is no negative marking.
 - iv. Do as per the instructions given.
7. **SECTION B – SUBJECTIVE TYPE QUESTIONS (26 MARKS):**
 - i. This section has 16 questions.
 - ii. A candidate has to do 10 questions.
 - iii. Do as per the instructions given.
 - iv. Marks allotted are mentioned against each question/part.

SECTION A: OBJECTIVE TYPE QUESTIONS

Q1. Answer any 4 out of the given 6 questions on Employability Skills (1 x 4 = 4 marks)

- i. Which of the following is NOT a part of the communication process?
A) Sender B) Receiver C) Environment D) Message
- ii. Choose the most effective way of active listening from the options given below.
A) Interrupting the speaker to give your opinion
B) Looking around while the speaker is talking
C) Nodding and maintaining eye contact
D) Avoiding questions to save time
- iii. Identify personal strength from the following.
A) Poor communication skills B) Punctuality C) Laziness D) Over-dependence on others
- iv. ICT plays an important role in education because it-
A) Reduces learning opportunities B) Helps in interactive and digital learning
C) Makes teachers less important D) Increases manual work
- v. _____ is an example of a utility app.
A) WhatsApp B) Calculator C) YouTube D) Instagram
- vi. The ALU (Arithmetic Logic Unit) inside the CPU is mainly responsible for:
A) Storing data B) Performing calculations and logical operations
C) Displaying results D) Managing power supply

Q2. Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)

- i. Auto-complete suggestion feature in search engines is an example of _____.
A) Deep Learning B) Neural Network C) Machine Learning D) Robotics
- ii. Among the following, which AI-related career demands strong mathematical skills?
A) Data Scientist B) Machine Learning Engineer C) Data Operator D) Business Intelligence Developer
- iii. _____ systems use clustering and association techniques for processing the data.
A) Weak AI B) Strong AI C) Applied AI D) Cognitive AI
- iv. The structure of a decision tree is _____.
A) Linear B) Rigid C) Non-linear D) Symmetrical
- v. Which of the following options is true about rule-based systems?
A) Static B) Dynamic C) Raw Text D) Summarized Text
- vi. _____ helps you to understand the significance of data by framing huge amounts of data in a simple and organized way.
A) Data Acquisition B) Data Exploration C) Data Visualisation D) Data Experiment

Q3. Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)

- i. _____ is not a risk of data breach.
A) Financial loss B) Identity theft C) Improved security D) Privacy invasion
- ii. The process of converting raw facts into meaningful information is called _____.
A) Data Acquisition B) Data Processing C) Data Literacy D) Data Privacy
- iii. In AI, the dependent feature is also known as _____.
A) Input variable B) Predicted output C) Data privacy D) Data security
- iv. Which method is used to collect primary data?
A) Online surveys B) Census reports C) Newspaper articles D) Government records
- v. Data that is outdated, incomplete, or inconsistent is called _____.
A) Clean data B) Good data C) Bad data D) Processed data
- vi. Select the correct example of secondary data source from the following.
A) Conducting a survey in your school B) Using government census data
C) Collecting responses in an online quiz D) Taking feedback from classmates

Q4. Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)

- i. The _____ branch of mathematics helps AI in analyzing data and identifying patterns.
A) Geometry B) Statistics C) Trigonometry D) Algebra
- ii. Which of the following is an example of using probability in real life?
A) Drawing a bar graph B) Predicting tomorrow's weather
C) Counting number of apples in a basket D) Preparing a timetable
- iii. What does AI use to analyze pixel values in an image?
A) Linear algebra B) Grammar C) Syntax D) Punctuation
- iv. Choose the correct AI application that uses optimization in mathematics.
A) Self-driven cars B) Face detection C) Delivery route planning D) Language translation
- v. In statistics, data that is collected in words or descriptions is called _____.
A) Quantitative data B) Qualitative data C) Numerical data D) Fractional data
- vi. Identify the appropriate example of a complementary event from the following.
A) Rolling a die and getting a 2 B) Drawing a card from a deck of cards
C) Both A and B D) None of them

Q5. Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)

- i. Which of the following is not a component of data literacy?
A) Reading Data B) Working with Data C) Guessing Data D) Communicating Data
- ii. _____ is an example of qualitative data.
A) Age of students B) Marks in mathematics C) Eye color of students D) Number of books in library
- iii. _____ best describes data privacy.
A) Protecting data from hackers B) Deciding who can access your personal data
C) Correcting errors in data D) Storing data in tables
- iv. Identify the appropriate example from the following that represents data interpretation.
A) Adding $10 + 15 = 25$ B) Concluding that a student needs 5 more marks to pass
C) Counting the number of students in a class D) Listing names in alphabetical order

v. Point out the correct option that represents a correct match.

A) Good Data → outdated, incomplete

B) Bad Data → accurate, consistent

C) Good Data → relevant, complete

D) Bad Data → correct, timely

vi. _____ method of data interpretation uses numerical information.

A) Qualitative

B) Quantitative

C) Tabular

D) Textual

SECTION B: SUBJECTIVE TYPE QUESTIONS

Answer any 3 out of the given 5 questions on Employability Skills (2 x 3 = 6 marks)

Answer each question in 20 – 30 words.

Q6. List any four important features of self-management skills.

Q7. An organization observes that some employees are unable to complete their tasks on time and their overall productivity is decreasing. Identify four common weaknesses that might reduce a person's productivity.

Q8. A hospital wants to improve its healthcare services using ICT in order to improve the quality of healthcare services. Suggest four practical ways in which ICT can be helpful for the improvement of the services.

Q9. Differentiate between productivity apps and entertainment apps with one example each.

Q10. Explain any two internal components of a CPU with their functions.

Answer any 4 out of the given 6 questions in 20 – 30 words each (2 x 4 = 8 marks)

Q11. Define the term Process Simulation.

Q12. Natural Language Processing (NLP) is widely applied in our daily lives. Explain any two applications of NLP and identify whether they use Natural Language Understanding (NLU) or Natural Language Generation (NLG).

Q13. What are the potential risks of data breaches? Explain any four.

Q14. In probability, an event is the outcome or a set of outcomes of a random experiment. Events can be of different types such as independent and dependent. Describe independent and dependent events with examples.

Q15. An e-commerce company wants to build a recommendation system that suggests products to users based on their previous ratings. The ratings are stored in a mathematical form of Linear Algebra. Explain how Linear Algebra is useful in AI with the help of an example.

Q16. A financial analyst is evaluating two investment options: Stock A has a 60% probability of giving a 12% return, while Stock B has a 40% probability of giving a 20% return. Discuss how probability is applied in the finance sector for better decision-making.

Answer any 3 out of the given 5 questions in 50– 80 words each (4 x 3 = 12 marks)

Q17. Explain the four main components of data literacy with suitable examples.

Q18. Sumathi a student of class IX is building a smart garden project for her science exhibition. She has a sensor that measures the moisture level of the soil, and she connected it to a small computer that displays the reading. Her classmate Jayant is working on a different project where he wants to create a travel app. This app will show the latest prices for flights to various cities. To do this, he needs to collect the prices listed on different airline websites.

Based on these two scenarios, answer the following questions:

i. Identify which project illustrate data acquisition and which one as web scrapping with proper explanation.

ii. State the main differences between the two methods.

Q19. Define the term probability. State its formula. Differentiate between certain events, impossible events, and equally likely events with examples.

Q20. A student is using a virtual assistant on their smartphone to find a recipe for a cake. He stated, "Hey AI, find me a good chocolate cake recipe with a picture." Discuss the importance of mathematics in AI to improve language understanding. Give an example.

Q21. Imagine you are part of a team at the Indian Meteorological Department (IMD) responsible for preparing a five-day weather forecast for your city. You have access to historical data on temperature, humidity, and rainfall from the past 10 years. Explain a way to use statistical concepts in analysing this data and predict the weather forecast for the upcoming days. Additionally, discuss the role of Statistics in disaster management.