B.K. BIRLA CENTRE FOR EDUCATION

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

TERM EXAMINATION (2025-26)

ARTIFICIAL INTELLIGENCE – MARKING SCHEME (417)

Class : IX **Duration : 2 Hrs**
Date : 10-09-2025 **Max. Marks : 50**
Admission No.: **Roll No.:**

General Instructions:

Try to attempt all questions as per given order.

All questions are compulsory.

The Question Paper is divided into Three sections Section A to C.

- Section A has 30 questions attempt 24 and carry 1 mark each.
- Section B has 10 questions attempt only 7 and carry 2 marks each.
- Section C has 6 questions attempt only 4 and carry 3 marks each.

SECTION A: OBJECTIVE TYPE QUESTIONS

Q.1 Answer any 4 out of the given 6 questions (4 x 1 = 4)

1. When we communicate verbally, we should use _____. 1
   a. Difficult words b. Simple words *
   c. Confusing words d. Abbreviations

2. What is the process called when a receiver communicates his/her response back to the sender? 1
   a. Encoding b. Decoding c. Feedback * d. Communication channel

3. _____ inculcate confidence within an individual to face and handle different situations in life. 1
   a. Self-hatred b. Self-care * c. Freedom d. Self-management

4. It is the ability to manage your impulse, emotions and behaviour. You should know yourself so you can manage your emotions and impulses. 1
   a. Self-commitment b. Self-control * c. Self-motivation d. Self-confident

5. Which of the following is a web browser? 1
   a. Internet b. Chrome * c. Windows d. None of these

6. Which shortcut key is used for Find option? 1
   a. Ctrl + X b. Ctrl + H c. Ctrl + F * d. Ctrl + P

Q.2 Answer any 5 out of the given 6 questions (5 x 1 = 5)

1. Which of the following best defines Artificial Intelligence (AI)?
   a. The ability of computers to perform tasks without using any data
   b. The ability of machines to mimic human intelligence and decision-making *
   c. A programming language used for app development
   d. A hardware device for storing large amounts of data
2. Which stage of the AI Project Cycle involves identifying the goal and success criteria?
   a. Data Acquisition b. Problem Scoping *
   c. Modelling d. Deployment
3. In the 4Ws Problem Canvas, the "Who" refers to:
   a) The resources needed for the project
   b) The people or stakeholders impacted by the problem *
   c) The steps to solve the problem
   d) The expected timeline for the project
4. Which of these is an example of AI application in healthcare?
   a) Voice-controlled smart assistants
   b) AI-based disease diagnosis from X-ray images *
   c) Social media recommendation systems
   d) Autonomous car navigation
5. Which activity is part of **data exploration**?
   a) Cleaning data and finding missing values *
   b) Designing a machine learning algorithm
   c) Deploying the AI solution
   d) Writing a problem statement
6. Which phase of the AI Project Cycle ensures that the AI system works as intended before real-world use?
   a) Deployment b) Evaluation * c) Data Acquisition d) Problem Scoping

Q.3 Answer any 5 out of the given 6 questions (5 x 1 = 5)

1. Using AI to recognize human faces in photos is an example of:
   a) Natural Language Processing b) Data Mining
   c) Computer Vision * d) Robotics
2. Which is the final stage of the AI Project Cycle where the solution is made available to users?
   a) Evaluation b) Modelling
   c) Data Acquisition d) Deployment *
3. In the Data Pyramid, **knowledge** refers to:
   a) Raw facts and figures
   b) Organized data with meaning
   c) Applying information to make decisions *
   d) Personal experiences only
4. Which practice helps maintain **data security**?
   a) Using weak passwords for convenience
   b) Sharing login details with friends
   c) Encrypting sensitive data *
   d) Disabling antivirus software

5. Data **privacy** focuses on:
   a) Preventing hackers from entering the system
   b) Protecting personal and sensitive data from unauthorized access *
   c) Converting data into charts and graphs
   d) Organizing files alphabetically

6. A survey asking people's **favourite colour** collects:
   a) Nominal data * b) Ordinal data
   c) Quantitative data d) Continuous data

Q.4 Answer any 5 out of the given 6 questions (5 x 1 = 5)

1. **Quantitative data** refers to:
   a) Data in text form
   b) Numerical data that can be measured and counted *
   c) Categories without numbers
   d) Personal opinions

2. Which of these is an example of **textual data**?
   a) A student's name in a school database *
   b) Temperature readings from a sensor
   c) The number of books in a library
   d) Price list of items in a store

3. Data **interpretation** involves:
   a) Collecting data from surveys
   b) Analyzing processed data to draw conclusions *
   c) Formatting data into tables
   d) Encrypting raw data

4. Which of these is **ordinal data**?
   a) Names of countries
   b) Roll numbers of students
   c) Customer satisfaction ratings (Excellent, Good, Average) *
   d) Mobile phone numbers

5. _____are repeating designs or sequences that can be observed in numbers, shapes, images, languages, or objects in our surroundings.
   a) Patterns * b) Iterations c) Sequences d) Statistics

6. Which of the following statements is not true?
   a. Mathematics helps in the study of patterns.
   b. With the use of mathematics, you can solve puzzles.
   c. Mathematics helps to identify an order/ arrangement in the list of images or numbers.
   d. The patterns only exist in mathematics. *

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

1. _____ measures the amount of certainty of an event.
   a. Probability * b. Calculus c. Series d. Pattern

2. _____also helps in concluding data.
   a. Statistics * b. Information c. Probability d. Sequence

3. The _____ of an event occurring is somewhere between impossible and certain.
   a. possibility b. existence c. probability * d. outcome

4. If an event is certain or sure to happen, it will have a probability of_____.
   a. 0 b. 1 * c. True d. None

5. Picking a random day of the week, and it turns out to be both Monday and Friday at the same time. Identify events.
   a. Likely events b. Unlikely events
   c. Impossible events * d. Certain events

6. If you toss a coin, the chance of getting a head or tail is an example of _____.
   a. equal probability * b. unlikely events
   c. impossible events d. certain events

SECTION – B SUBJECTIVE TYPE QUESTIONS

31. What is Oral Communication? 2
Ans: Oral communication is communication using spoken words in an interactive way to share ideas or information. It can be a direct face-to-face conversation or a telephonic conversation

32. What is Self-Control? 2
Ans: It is the ability to manage your impulse, emotions and behaviour. Know yourself so you can manage your emotions and impulses. It acts as a force to have a more successful and satisfying life

33. What do you mean by Mobile OS? 2
Ans: Mobile Operating Systems are designed to run the applications and other programs on smartphones, tablets, smart watches or other portable devices. It is a combination of an operating system and communication technology.

34. Differentiate between a File and a Folder. 2
Ans: File is defined as a program that stores the data organised in a specific format. A folder is a directory created for storing the related files or subfolders under a specific name.

35. What is the main goal of creating a confusion matrix? 2
Ans: To assess the performance of a classification model by displaying the number of true positive, true negative, false positive, and false negative predictions.

36. What is Data Acquisition? 2
Ans: Data acquisition is the process of collecting and gathering data from various sources for analysis, training, and model development.

37. Define the term Data Backup. 2
Ans: Data backup refers to the process of creating copies of data to ensure that it can be restored in the event of data loss due to natural disasters, accidents, cyber-attacks, or other unexpected events. Sometimes physical backup media is used to secure in access-controlled environments. Another method to secure data can be the cloud backup which is considered more reliable

38. What is Kaggle and how can it be useful? 2
Ans: Kaggle is an online platform for data science and machine learning competitions. It provides datasets, code, and community discussions, allowing data enthusiasts to practice and improve their skills, collaborate with others, and gain exposure to real-world problems.

39. What are patterns? 2
Ans: Patterns are regular and repeated ways in which data or events occur. For example, the sequence of even numbers (2, 4, 6, 8) or the seasonal patterns in weather data.

40. What do you mean by equal probability events? 2
Ans: Equal probability events are events that have the same chance of occurring. For example, when flipping a fair coin, the probability of getting heads or tails is equal.

SECTION – C SUBJECTIVE TYPE QUESTIONS

41. List any three uses of statistics in education. 3

Ans: Three uses of statistics in education:

- Analysing test scores and grades to evaluate student learning, identify areas for improvement, and allocate resources effectively.
- Using data to identify gaps in the curriculum and areas where students need more support.
- Analysing how students and teachers use educational technology for future implementations.

42. "Statistics is used for collecting, exploring and analyzing the data." Elaborate with the help of an example. 3

Ans: involves several key steps: First, data collection involves gathering relevant information from various sources such as surveys, experiments, or observational studies. For instance, if a company wants to understand customer satisfaction, it would collect data through customer feedback surveys. Next, exploring the data involves summarizing and visualizing it to uncover patterns and trends. This could mean creating charts or tables to see the distribution of satisfaction levels. Finally, analyzing the data involves applying statistical methods to draw conclusions and make predictions. For example, statistical tests might reveal that customers who receive timely support are more satisfied. Thus, statistics helps in making informed decisions based on data.

43. List any three best practices of cyber security. 3

Ans:Use strong, unique passwords with a mix of characters for each account.

- Activate Two-Factor Authentication (2FA) for added security.
- Download software from trusted sources only and scan files before opening.

44. Write any two difference between Continuous data and Discrete data. 3

Ans:

Continuous Data	Discrete Data
Continuous data can take any numeric value within a specified range.	Discrete data refers to distinct single values. It consists of whole numbers without decimal parts that represent distinct categories or values.
Continuous data is measurable.	Discrete data is countable.
This type of data can be infinitely subdivided and often includes decimal points.	Discrete data cannot be subdivided meaningfully.
Often used to analyse using statistical techniques such as mean, median, standard deviation, and correlation.	It is used to analyse using frequency distributions, bar charts, and probability distributions.
Examples: dimensions of classroom, height, weight, temperature, time, etc.	Examples: number of girls and boys in class, number of subjects in class 9th, count of anything.

45. Differentiate between Ethics and Moral.

Ans:

Aspects	Ethics	Morals
Definition	Rules provided by an external source	Principles regarding right and wrong held by an individual
Source	Institutions, organisations, societal norms	Personal beliefs, cultural norms, religious teachings
Application	Specific situations and professional practices	Personal behaviour and conduct
Objective	Maintain order and fairness in society	Foster personal integrity and align with personal values
Examples	Medical ethics, business ethics, legal ethics	Personal beliefs about honesty, integrity, kindness
Origin	External and often codified	Internal and subjective
Scope	Consistent within a profession or society	Varies between individuals
Enforcement	Enforced by external bodies (e.g., professional organisations, legal systems)	Self-governed and enforced by individual conscience
Flexibility	Can change over time to reflect new norms or societal changes	More stable over time, but can evolve with personal growth

46. Give any three important applications of AI in real life.

Ans: Healthcare: AI assists in diagnosing diseases, personalizing treatment plans, and analyzing medical images for early detection of conditions like cancer.

Finance: AI is used for fraud detection, algorithmic trading, and personalized financial advice, improving the accuracy and efficiency of financial operations.

Customer Service: AI-powered chatbots and virtual assistants provide 24/7 support, handle customer inquiries, and automate routine tasks, enhancing customer experience and reducing operational costs.

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