



# B.K. BIRLA CENTRE FOR EDUCATION

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



## TERM-I EXAMINATION (2025-26)

### ARTIFICIAL INTELLIGENCE – MARKING SCHEME (843)

Class : XI SCIENCE/COMMERCE/ARTS

Date : 03-09-2025

Admission No.:

Duration : 2 Hrs

Max. Marks : 50

Roll No.:

	<b><u>General Instructions:</u></b>	
	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.	
	<ul style="list-style-type: none"> <li>Section A has 30 questions attempt only 24 and carry 1 mark each.</li> <li>Section B has 10 questions attempt only 7 and carry 2 marks each.</li> <li>Section C has 6 questions attempt only 4 and carry 3 marks each.</li> </ul>	
	<b>Section-A</b>	
1.	Which of the following method is used to receive information from the sender? a) Listening *                      b) Speaking                      c) Telling                      d) Writing	1
2.	Which of these is a sign of good listening skill? a) Staring hard                      b) Nodding while listening * c) Passive-aggressive                      d) Aggressive	1
3.	Business idea can be a product, service or _____. a) Dynamic model                      b) Eco model c) Hybrid model *                      d) All of these	1
4.	_____is an exercise entrepreneurs do to understand if there is a market for what they have offer. a) Competition survey                      b) Population survey c) Both a and b                      d) Surveying customers *	1
5.	The green economy is a macroeconomic approach that emphasises _____. a) Investments                      b) Job creation                      c) Skill development                      d) All of these *	1
6.	Which among the following is essential for rainfall and the protection of our land resources? a) Water                      b) Waste management                      c) Tribes                      d) Forests *	1
7.	Which domain of AI allows a computer to understand, interpret, and generate human language? a) Computer Vision                      b) Natural Language Processing * c) Expert Systems                      d) Data Mining	1
8.	Data Science is mainly concerned with: a) Building robots                      b) Analyzing and interpreting large volumes of data * c) Designing operating systems                      d) Computer networking	1

9.	Which type of Machine Learning uses labelled data to train the model? a) Supervised Learning *                      b) Unsupervised Learning c) Reinforcement Learning                      d) Deep Learning	1
10.	Reinforcement Learning works by: a) Giving the model labelled data to learn b) Providing no feedback to the model c) Using rewards and penalties to guide learning * d) Randomly adjusting the model without data	1
11.	In which domain would self-driving cars mainly fall? a) Computer Vision and Robotics *                      b) NLP and Data Science c) Expert Systems only                      d) Cloud Computing	1
12.	A drawback of AI is that it can: a) Be biased if trained on biased data *                      b) Work without breaks c) Process data quickly                      d) Automate routine work	1
13.	Which of the following is true for Deep Learning? a) It performs better with very small datasets b) It is a subset of Machine Learning * c) It is unrelated to neural networks d) It does not require GPUs for large models	1
14.	A major ethical issue in AI is: a) Data bias and discrimination *                      b) High processing speed c) Automation of tasks                      d) Availability of big data	1
15.	What is one of the main benefit of pursuing a career in AI? a) Limited job roles                      b) High demand in multiple industries * c) Requires no technical skills                      d) Low income potential	1
16.	Which of the following is NOT a common job role in AI? a) AI Engineer                      b) Human Resource *                      c) Data Analysts                      d) Machine Learning Engineer	1
17.	Which industry is NOT actively seeking AI integration? a) Finance services                      b) Health care                      c) Craft and Artisanal*                      d) Agriculture	1
18.	Which of the following is a primary responsibility of a Machine Learning Engineer? a) Designing hardware component                      b) Building AI System and algorithm * c) Managing IT Infra                      d) Writing user interface code	1
19.	What is the Primary focus of AI Ethicists? a) Building AI models                      b) Designing robotics systems c) Ensuring ethical use of AI technologies *                      d) Analysing big data	1
20.	Which programming language is commonly used for AI development? a) HTML                      b) CSS                      c) Python *                      d) PHP	1
21.	Which soft skill is crucial for efficiently organising and prioritising tasks to maximise productivity and meet deadlines? a) Linear Algebra                      b) Time Management * c) Deep Learning                      d) Shell scripting	1
22.	What of the following is used for building advanced AI application and is open-source? a) Java                      b) TensorFlow *                      c) Tableau                      d) Power BI	1

23.	Which of these is a valid Python variable name? a) 2value                      b) my _count * c) my-variable                d) for	1
24.	In Python, interactive mode is used for: a) Writing multiple programs at once                      b) Testing code line-by-line in the Python shell * c) Creating .exe applications                                      d) Debugging only	1
25.	Which of the following is <b>not</b> a Python data type? a) int                      b) float                      c) real *                      d) str	1
26.	Which list operation removes the last element? a) remove()                      b) pop() *                      c) del list[0]                      d) clear()	1
27.	Which method returns all keys in a dictionary? a) keys() *                      b) values()                      c) items()                      d) get()	1
28.	What will len([10, 20, 30, 40]) return? a) 3                      b) 4 *                      c) 5                      d) Error	1
29.	Which method is used to <b>add an element</b> at the end of a list? a) append() *                      b) insert() c) extend()                      d) add()	1
30.	What will be the output of: print(3 > 2 and 2 > 5) a) True                      b) False * c) 3 > 2 > 5                      d) Error	1
SECTION - B		
31.	What is Goal Setting? Ans: Goal setting is the process of deciding what you want to achieve and planning specific, measurable steps to reach it within a set time frame. It involves: Identifying a clear target (what you want to accomplish) Breaking it down into smaller, manageable tasks Setting deadlines and priorities Monitoring progress and making adjustments if needed	2
32.	What is Team Work? Ans: Teamwork is the ability of a group of people to work together toward a common goal by sharing responsibilities, skills, and ideas. Teamwork means “working together as one unit” so that the combined effort achieves better results than working alone.	2
33.	Write any two advantage of word processor software. Ans: Two advantages of word processor software are: Easy Editing: You can quickly make changes to text (insert, delete, copy, paste) without retyping the whole document. Formatting Options: It allows changing font style, size, color, alignment, and adding features like bold or italics to make documents look professional.	2
34.	Define text formatting. Ans: Text formatting is the process of changing the appearance of text in a document to make it clear, attractive, and easy to read. It includes adjustments like font style, size, color, alignment, bold, italics, underline, line spacing, and indentation.	2

35.	What is Natural Language Processing? Ans: Natural Language Processing (NLP) is a branch of Artificial Intelligence that enables computers to understand, interpret, and respond to human languages (like English, Hindi, or French) in a way that is meaningful.	2
36.	Differentiate between data and information. Ans: <b>Data</b> refers to raw facts, figures, or symbols that by themselves may not have any clear meaning. It can be numbers, text, images, or sounds collected from various sources. <b>Information</b> is the result of processing, organizing, or analyzing data to give it meaning and context. It is data that has been interpreted and is useful for decision-making.	2
37.	What are the responsibilities of a Data Scientists in the AI field? Ans: A data scientists analyses and interpret complex data, derives insight, builds predictive models, and helps in decision-making by providing data-driven solutions to business	2
38.	What do you understand by operator precedence? Ans: Operator precedence refers to the set of rules that determine the order in which different operators in an expression are evaluated in a programming language like Python.	2
39.	Differentiate between comparison and logical operator. Ans: <b>Comparison operators</b> are used to compare two values and check their relationship, such as whether they are equal, not equal, greater than, or less than each other. They return either True or False as the result. <b>Logical operators</b> , on the other hand, are used to combine or modify the results of comparison operations or conditions. They also return True or False, but their purpose is to evaluate complex logical expressions.	2
40.	Write any two naming conventions for identifiers in python? Ans: Use lowercase letters with underscores for variable and function names Must begin with a letter(a-z) (A-Z) or an underscore( _ ).	2
SECTION – C		
41.	Differentiate between Artificial Intelligence, Machine Learning and Deep Learning. Ans: <b>Artificial Intelligence (AI)</b> is a broad field of computer science focused on creating machines or systems that can perform tasks requiring human-like intelligence, such as problem-solving, decision-making, and understanding language. <b>Machine Learning (ML)</b> is a subset of AI that enables machines to learn from data and improve their performance over time without being explicitly programmed. It focuses on creating algorithms that can identify patterns and make predictions. <b>Deep Learning (DL)</b> is a further subset of Machine Learning that uses artificial neural networks with many layers to process large amounts of complex data, such as images, speech, or natural language. It is especially powerful in applications like image recognition, speech-to-	3
42.	Describe any three applications of AI. Ans: <b>Virtual Assistants:</b> AI-powered virtual assistants like Siri, Alexa, and Google Assistant can understand voice commands, answer questions, set reminders, and perform tasks such as playing music or controlling smart devices. They use Natural Language Processing (NLP) to understand and respond to human language. <b>Self-Driven Cars:</b> Self-driving or autonomous cars use AI, computer vision, and sensors to detect obstacles, follow traffic rules, and navigate safely without human intervention. They continuously process real-time data from the surroundings to make driving decisions. <b>Spam Filters:</b> Email services use AI-based spam filters to detect and block unwanted or harmful messages. These filters analyze email content, sender information, and patterns to classify messages as spam or legitimate, improving email security and user convenience.	3

43.	<p>Explain any three traits required for an AI Professional.</p> <p>Ans: <b>Be Curious:</b> An AI professional should have a strong desire to explore new ideas, learn emerging technologies, and ask questions. Curiosity helps in discovering innovative solutions and staying updated with the rapidly changing AI field.</p> <p><b>Be Creative:</b> Creativity allows an AI professional to think beyond standard approaches and design unique, effective solutions to complex problems. It is essential for developing new algorithms, applications, and AI-driven products.</p> <p><b>Be Communicative:</b> Good communication skills are important to explain AI concepts, project goals, and results clearly to team members, clients, and non-technical audiences. Being <u>communicative ensures better teamwork and successful project execution.</u></p>	3
44.	<p>Explain: a. Imputation                      b. Dropping                      c. Interpolation</p> <p><b>a. Imputation:</b> Imputation is the process of replacing missing data in a dataset with substituted values. These values can be the mean, median, mode, or predicted values based on other data. For example, if a student's test score is missing, it can be filled with the average score of the class.</p> <p><b>b. Dropping:</b> Dropping means removing rows or columns from a dataset that contain missing or irrelevant data. This method is used when the missing data is large enough to affect the accuracy of the analysis or when it's not possible to estimate the missing values reliably.</p> <p><b>c. Interpolation:</b> Interpolation is a method of estimating missing values by using the existing values before and after the missing point. It assumes that the data follows a certain pattern or trend, and it fills in the gap accordingly. This method is often used in time-series data like temperature readings or</p>	3
45	<p>Write a program to demonstrate the use of the if-elif-else statement.</p> <p>Ans: <code>marks = int(input("Enter your marks: "))</code></p> <pre> if marks &gt;= 90:     print("Grade: A") elif marks &gt;= 75:     print("Grade: B") elif marks &gt;= 50:     print("Grade: C") else:     print("Grade: F") </pre>	3

46.	<p>Write a program to create a Data Frame using Dictionary of lists.</p> <p>Output:</p> <pre> Name Age      City 0  Alice  25   New York 1   Bob   30  Los Angeles 2 Charlie  22   Chicago 3  David  28   Houston </pre> <p>Ans:</p> <pre> import pandas as pd  # Dictionary of lists data = {     'Name': ['Alice', 'Bob', 'Charlie', 'David'],     'Age': [25, 30, 22, 28],     'City': ['New York', 'Los Angeles', 'Chicago', 'Houston'] }  # Creating DataFrame df = pd.DataFrame(data)  # Display the DataFrame print(df) </pre>	3
	<p><b>*** ALL THE BEST ! ***</b></p>	