B.K. BIRLA CENTRE FOR EDUCATION

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

PRE BOARD - III (2025-26)
ARTIFICIAL INTELLIGENCE (843) / SUBJECT-05

MARKING SCHEME

Class : XII A/B/C (SET-02) | **Duration : 2 Hrs.**
Date : 17-01-2026 | **Max. Marks : 50**
Admission No.: | **Roll No.:**

SECTION A – OBJECTIVE TYPE QUESTIONS

Q1. Employability Skills

i. **(d) all of these**

ii. **(b) Physiological**

iii. **(a) Schizoid personality disorder**

iv. **(b) 12.5**

v. **(b) lack of plan**

vi. **(a) Skill Council for Green Jobs**

Q2. Data Science & Computer Vision

i. **(a)** Statement 1 is true, Statement 2 is false

ii. **(a) sklearn.model_selection**

iii. **(c) ii only**

iv. **(b) pixels**

v. **(c) High-level processing**

vi. **(a) Edge detection**

Q3. Big Data & Neural Networks

i. **(d)** Edge detection and corner detection are ensured in images

ii. **(b) 8**

iii. **(c) To improve data quality**

iv. **(b) Data mining**

v. **(a) Data analytics**

vi. **(a)** Adjusting weights and biases to minimize error

Q4. Assertion & Reasoning / AI Concepts

i. **(c)** A is true, R is false

ii. **(a)** Both A and R are true and R explains A

iii. **(b) Convolutional Neural Network**

iv. **(a)** Adjusting weights and biases

v. **(a) Deepfake AI**

vi. **(d) Identifying features in image datasets**

Q5. Data Storytelling & Neural Networks

i. **(a)** Both A and R are true and R explains A

ii. **(a)** Both A and R are true and R explains A

iii. **True**

iv. **(c) Overcomplicating the message**

v. **(a) Loss function**

vi. **(c) Continuous value prediction**

SECTION B – SUBJECTIVE TYPE QUESTIONS

Q6. Ensuring Active Listening (2 marks)

Answer:
Active listening can be ensured by maintaining eye contact, avoiding distractions, asking clarifying questions, nodding, and giving appropriate verbal and non-verbal feedback.

Q7. Goal-setting using SMART (2 marks)

Answer:
Goal-setting is the process of defining objectives. SMART stands for Specific, Measurable, Achievable, Relevant, and Time-bound goals for better success.

Q8. Difference (Any One) (2 marks)

Sorting vs Filtering:
Sorting arranges data in order, while filtering displays selected data based on conditions. Example: Sorting marks vs filtering marks above 80.

OR

Function vs Formula:
A function is predefined, while a formula is user-created.
Example: =SUM(A1:A5) vs =A1+A2.

Q9. Barriers in Entrepreneurship (2 marks)

Answer:
Common barriers include lack of finance, poor planning, fear of failure, lack of skills, and market competition.

Q10. Green Job (2 marks)

Answer:
A green job helps protect the environment and reduce carbon footprint. Benefits include sustainability, job security, and environmental conservation.

Q11. Applications of Computer Vision (2 marks)

Answer:
Face recognition, medical imaging, autonomous vehicles, surveillance systems.

Q12. Types of Big Data Analytics (2 marks)

Answer:
Types are Descriptive, Diagnostic, Predictive, and Prescriptive analytics.
Descriptive shows past trends; Predictive forecasts future outcomes.

Q13. MSE & RMSE (2 marks)

Answer:
MSE = Mean of squared errors
RMSE = √MSE
(Numerical values depend on the given dataset in exam)

$$\text{MSE} = \frac{9 + 1 + 1 + 4 + 36 + 16 + 16 + 25 + 16 + 1}{10}$$

$$\text{MSE} = \frac{125}{10} = \boxed{12.5}$$

Step 4: Root Mean Squared Error (RMSE)

$$\text{RMSE} = \sqrt{12.5}$$

$$\text{RMSE} \approx \boxed{3.54}$$

Q14. Neural Network Inputs & Weights (2 marks)

Answer:
Inputs: Food quality, ambience, distance
Weights: Importance assigned to each factor based on preference (e.g., food quality = high weight).

Q15. Limitations of LLMs (2 marks)

Answer:
LLMs may generate biased or incorrect information, lack reasoning ability, consume high resources, and raise data privacy concerns.

Q16. Data Storytelling in Retail (2 marks)

Answer:
The company used data storytelling to present insights visually and narratively, helping stakeholders understand customer preferences and design effective marketing strategies.

LONG ANSWERS (50–80 words)

Q17. Role of Neural Networks in Future AI (4 marks)

Answer:
Neural networks will play a vital role in advancing AI by enabling machines to learn complex patterns. They support applications such as autonomous vehicles, medical diagnosis, speech recognition, and personalized recommendations. With improved architectures, neural networks will enhance automation, decision-making, and human–machine interaction.

Q18. Evaluating AI Model Performance (4 marks)

Answer:
Model performance can be evaluated using accuracy, precision, recall, F1-score, and confusion matrix. Cross-validation ensures reliability. For regression tasks, metrics like MSE and RMSE are used. These metrics help assess model effectiveness and improvement areas.

Q19. 6 V's of Big Data (4 marks)

Answer:
The 6 V's are Volume (amount of data), Velocity (speed), Variety (types), Veracity (quality), Value (usefulness), and Variability (inconsistency). Together, they define big data characteristics.

Q20. Generative AI in Advertising (4 marks)

Answer:
i) GANs, VAEs, and text generation models
ii) AI personalizes emails using user data and preferences
iii) Ethical concern: misleading or biased content
iv) Advantage: creation of engaging, customized videos at scale

Q21. Data Storytelling in Healthcare (4 marks)

Answer:
Data storytelling helps present patient feedback and treatment outcomes clearly. Visual narratives highlight problem areas, support decision-making, improve patient care quality, and enhance service delivery.