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-01) | **Duration : 2 Hrs.**
Date : 17-01-2026 | **Max. Marks : 50**
Admission No.: | **Roll No.:**

SECTION A – OBJECTIVE TYPE QUESTIONS

Q1. Employability Skills

i. **(b) Five**

ii. **(b) Motivation**

iii. **(c) Avoidant**

iv. **(b) 19**

v. **(c) Manages the business**

vi. **(a) Ask the canteen management to get a bigger bin**

Q2. Data Science & AI Fundamentals

i. **(b) Data collection**

ii. **(c) Business**

iii. Correct match: **(b)**
(i) Descriptive – B
(ii) Diagnostic – A
(iii) Predictive – D
(iv) Prescriptive – C

iv. Correct order: **(b) iv, ii, iii, i**

v. **(a) Supervised, Unsupervised**

vi. **(c) Computer Vision**

Q3. Computer Vision & Big Data

i. **(a) Image classification**

ii. **(b) iii**

iii. **(a) Image Acquisition**

iv. **(a) KNN**

v. **(c) The amount of data generated**

vi. **(d) Variety**

Q4. Neural Networks & Big Data

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

ii. **(b)** Both A and R are true, but R does not explain A.

iii. **(c) Verification**

iv. **(b)** A machine learning model inspired by the human brain

v. **(c)** Nodes that make up the layers of a neural network

vi. **(b)** They introduce non-linearity

Q5. Generative AI & Data Storytelling

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

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

iii. **(c)** GANs and VAEs

iv. **(b)** Communicating insights through data in a narrative format

v. **(c)** To communicate insights effectively

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

SECTION B – SUBJECTIVE TYPE QUESTIONS

Q6. Dos and Don'ts of Interviews (2 marks)

Answer:
Do prepare well, dress formally, and be confident.
Don't arrive late, interrupt the interviewer, or provide false information.

Q7. Importance of Positive Thinking (2 marks)

Answer:
Positive thinking builds confidence, reduces stress, and improves decision-making. It helps individuals stay motivated, overcome challenges, and work persistently toward achieving goals.

Q8. Mathematical Operators in OpenOffice Calc (2 marks)

Answer:
Addition (+) adds values, subtraction (–) finds difference, and multiplication (*) multiplies values in spreadsheet calculations.

Q9. Decision Making as Entrepreneurial Competency (2 marks)

Answer:
Yes, decision-making is crucial as entrepreneurs must choose wisely under uncertainty to manage risks, resources, and business growth effectively.

Q10. Examples of Green Jobs (2 marks)

Answer:
Solar panel technician, wind energy engineer, environmental scientist, waste management specialist, and energy auditor.

Q11. Types of Data Sources (2 marks)

Answer:
Primary sources include surveys and interviews. Secondary sources include databases, reports, and websites. Example: customer survey vs sales report.

Q12. Algorithms for Object Detection (2 marks)

Answer:
YOLO and SSD are object detection algorithms. YOLO detects objects in real time by predicting bounding boxes in a single pass.

Q13. Structured vs Unstructured Data (2 marks)

Answer:
Structured data is organized in tables (e.g., databases). Unstructured data lacks format, like images, videos, and text files.

Q14. FNN vs RNN (2 marks)

Answer:
FNN processes data in one direction without memory. RNN has feedback loops, enabling it to remember previous inputs.

Q15. Ethical Concerns of GANs in Social Media (2 marks)

Answer:
GANs may manipulate user behavior, spread misinformation, invade privacy, and create biased or misleading content.

Q16. Freytag's Pyramid in Data Storytelling (2 marks)

Answer:
Freytag's Pyramid includes exposition, rising action, climax, falling action, and resolution. It structures data stories logically and engagingly.

LONG ANSWERS (50–80 words)

Q17. Big Data Analytics for Retail Store (4 marks)

Answer:
Customer data such as purchase history, browsing behavior, demographics, and feedback can be analyzed. Big data analytics identifies buying trends and preferences using pattern analysis. Visualizations like bar charts, heat maps, and dashboards help present insights. These insights enable personalized offers, targeted promotions, and improved customer experience, leading to increased sales.

Q18. Structure of a Neural Network (4 marks)

Answer:
A neural network consists of input, hidden, and output layers. Neurons process inputs using weighted connections and biases. Activation functions introduce non-linearity. For example, in image recognition, inputs are pixel values processed through hidden layers to classify images.
(Diagram to be drawn in exam)

Q19. Meta's LLaMA vs Traditional LLMs (4 marks)

Answer:
Meta's LLaMA is a lightweight, open-source large language model optimized for research efficiency. Unlike traditional LLMs, it requires fewer computational resources while maintaining high performance. LLaMA supports transparency and customization.
(Diagram to be drawn in exam)

Q20. Confusion Matrix Metrics (4 marks)

Answer:

- Precision = TP / (TP + FP)
- Recall = TP / (TP + FN)
- F1 Score = 2 × (Precision × Recall) / (Precision + Recall)
- Accuracy = (TP + TN) / Total

Q21. Steps to Create a Data Story (4 marks)

Answer:
Steps include understanding the audience, defining the objective, collecting and analyzing data, selecting appropriate visuals, creating a clear narrative, and presenting actionable insights effectively.