



B.K. BIRLA CENTRE FOR EDUCATION

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



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

MARKING SCHEME

Class : XII A/B/C (SET-02)
Date : 11-12-2025
Admission No.:

Duration : 2 Hrs.
Max. Marks : 50
Roll No.:

SECTION A – Objective Questions (24 Marks)

Q1. Employability Skills (Any 4)

- i. c) Sender
- ii. d) Collect data → Visualize data → Observe relationships → Create narrative
- iii. a) Intrinsic motivation
- iv. c) To whom?
- v. d) Protecting and restoring the ecosystem
- vi. d) Wait until Priya finishes speaking, then respond

Q2. (Any 5)

- i. a) The arrangement of content changes
- ii. b) Test
- iii. (b) 20% – 80%
- iv. a) 1=D, 2=B, 3=E, 4=A, 5=C
- v. d) 1 & 4 (DataRobot & Watson Studio)
- vi. d) Collect data → Visualize data → Observe relationships → Create narrative

Q3. (Any 5)

- i. (a) Regression predicts quantity; classification predicts label
- ii. (c) Batch & Stream Processing
- iii. (c) Understanding the audience
- iv. (d) iterative
- v. (c) By adjusting weights and biases
- vi. (b) MSE

Q4. (Any 5)

- i. a. Both true; R explains A
- ii. a. Both true; R explains A
- iii. d) Green job
- iv. d)
- v. (a) RMSE
- vi. True

Q5. (Any 5)

- i. **b.** Both true but R not explanation
- ii. **a.** Both true; R explains A
- iii. **b) Cross Validation**
- iv. **Computer Vision / Image Recognition**
- v. **b) Predictive**
- vi. **c) Story**

SECTION B – Subjective Questions

Q6. Sentence vs Phrase

A **sentence** has a subject and verb and expresses a complete idea.

Example: “She is reading a book.”

A **phrase** is a group of words without a complete idea.

Example: “Reading a book.”

Q7. Interpersonal Skills & Importance

Interpersonal skills help individuals communicate and build relationships effectively. Entrepreneurs need them to negotiate, lead teams, build customer trust, and manage collaborations.

Q8. Spreadsheet Correction

(a) Formula should start with =

Correct formula: **=B2 + C2**

(b) In D3 it shows: **=B3 + C3** (sum of next row values)

Q9. Environmental Barriers to Entrepreneurship

- Lack of infrastructure
- Government regulations
- Poor market conditions
- Natural calamities
- High pollution levels

Q10. Benefits of Green Jobs

- Reduce environmental pollution
- Promote sustainable development
- Save energy and resources
- Create eco-friendly employment opportunities

Q11. Purpose of Confusion Matrix

It evaluates classification models by showing correct & incorrect predictions for each class, helping compute accuracy, precision, recall, and F1 score.

Q12. Questions to Decompose “Build an App”

- What is the purpose of the app?
- Who are the users?

- What features are needed?
- What platform (Android/iOS)?
- What data is required?

Q13. Build/Design Phase

In this phase, the ML model is designed: selecting algorithms, preparing data, feature engineering, choosing metrics, and building the model architecture.

Q14. Identify Elements

- (i) **(X1, X2, X3)** → Inputs
- (ii) **b** → Bias

Predicted output formula:

$$Y = f(w_1X_1 + w_2X_2 + w_3X_3 + b)$$

Q15. Loss Function & Types

A loss function measures how far the model's predictions are from actual values.
Two categories: **Regression loss** & **Classification loss**

Q16.

- Characters
- Setting
- Plot
- Conflict
- Resolution

Q17.

- a) Data sources: GPS, cameras, sensors, weather, public transport, mobile data.
- b) Most relevant V: **Velocity** (real-time fast-changing data).
- c) ML predicts traffic surges using historical + real-time patterns.
- d) Strategies: Dynamic signal control, optimized routes, predictive alerts, public transport optimization.

Q18.

Car A P A-P (A-P)²

1	5.0	4.5	0.5	0.25
2	6.0	5.5	0.5	0.25
3	7.5	8.0	-0.5	0.25
4	8.0	7.0	1.0	1.00
5	9.0	9.5	-0.5	0.25

Sum = 2.0

a) $MSE = 2 / 5 = 0.4$

b) $RMSE = \sqrt{0.4} \approx 0.632$

Q19.

(a) Perceptron

Basic neural unit for binary classification (e.g., AND/OR classifier).

(b) CNN

Extracts spatial features from images (e.g., identifying cats/dogs).

(c) RNN

Handles sequences (e.g., next-word prediction).

(d) GAN

Generator + discriminator create realistic images (e.g., deepfake faces).

Q20. (1) Exposition – given

1. **(2) Rising Action** – conflicts build
2. **(3) Climax** – turning point
3. **(4) Falling Action** – consequences unfold
4. **(5) Resolution/Denouement** – story concludes

Q21.

- a) Goal: Reduce congestion through data-driven decisions.
- b) Data analysed: Peak hours, accident spots, speed patterns.
- c) Recommendation: New signals, route optimization, better public transport.
- d) Best tool: **Tableau / Power BI** for visualization.

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