



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-01)

Date : 11-12-2025

Admission No.:

Duration : 2 Hrs.

Max. Marks : 50

Roll No.:

SECTION A – Objective Type Questions (24 Marks)

Q1. Employability Skills (Any 4)

- i. (c) Not going out for vacations
- ii. (d) Stress
- iii. (c) Sender
- iv. (c) To whom?
- v. (d) Protecting and restoring the ecosystem
- vi. (c) Dispose-off the e-waste with the help of a certified partner

Q2 (Any 5)

- i. b) Data Science Lifecycle
- ii. b) Test
- iii. True
- 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. (c) To select, modify, or create new features to improve performance
- ii. (c) Batch Processing and Stream Processing
- iii. (a) RMSE
- iv. (d) iterative
- v. (c) By adjusting weights and biases
- vi. (c) Understanding the Audience

Q4 (Any 5)

- i. a. Both A and R true, R correct explanation
- ii. a. Both A and R true, R correct explanation
- iii. (d) Green job
- iv. (d) It is an iterative process
- v. (b) Large
- vi. (d) Root Mean Squared Error

Q5 (Any 5)

- i. **b.** Both A and R true, but R is not explanation
- ii. **a.** Both A and R true, R correct explanation
- iii. **(b) Cross Validation**
- iv. **(a)** 1→iv, 2→iii, 3→i, 4→ii
- v. **(a) Deepfake AI**
- vi. **(c) Story**

SECTION B – Subjective Questions

Q6.

- (a) **Personality** refers to the unique patterns of thoughts, feelings, and behaviours that make an individual different from others.
- (b) **Personality disorders** are long-term unhealthy behaviour patterns that cause problems in functioning and relationships.

Q7.

Interpersonal skills are abilities that help individuals communicate and interact effectively with others. They are important for entrepreneurs because they help in negotiation, leadership, team coordination, and building customer relationships.

Q8.

Other four stages:

1. **Understanding**
2. **Evaluating**
3. **Responding**
4. **Remembering**

Q9.

- Lack of infrastructure
- Government regulations
- Poor market conditions
- High competition
- Limited access to resources

Q10.

Yes, it is a **green job** because it promotes environmental sustainability, conserves water, and reduces dependency on natural water sources.

Q11.

It helps evaluate classification models by showing the number of correct and incorrect predictions for each class, enabling calculation of accuracy, precision, recall, and F1 score.

Q12.

- What problem will the app solve?
- Who are the users?
- What features are required?
- What platforms will it run on?
- What data is needed?

Q13.

This phase involves selecting ML algorithms, designing model architecture, preparing datasets, feature engineering, and building the initial model for evaluation.

Q14.

A node multiplies inputs by weights, adds bias, applies an activation function, and if the output passes the activation threshold, it sends data to the next layer.

Q15.

1. **Chatbots** – Generate natural responses to users.
2. **Content creation** – Producing articles, summaries, captions automatically.

Q16.

- Setting
- Plot
- Conflict
- Resolution

50–80 Word Questions (Any 3)

Q17.

- a) Data sources: GPS data, traffic cameras, sensors, weather data, public transport data.
- b) Most relevant V: **Velocity** (real-time fast-moving data).
- c) ML helps predict congestion patterns using historical and real-time data to forecast peak times.
- d) Prescriptive analytics: rerouting suggestions, adaptive traffic signals, optimal public transport schedules.

Q18.

Confusion Matrix

- True Positive (TP) = 80
- False Negative (FN) = 20
- False Positive (FP) = 10
- True Negative (TN) = 90

a) Accuracy = (TP + TN) / Total
 $= (80 + 90) / 200 = \mathbf{0.85 \text{ or } 85\%}$

b) Precision = TP / (TP + FP)
 $= 80 / (80 + 10) = \mathbf{0.8889 \text{ or } 88.89\%}$

c) **Recall** = $TP / (TP + FN)$
= $80 / (80 + 20) = 0.8$ or **80%**

d) **F1 Score**
= $2 \times (Precision \times Recall) / (Precision + Recall)$
= $2 \times (0.8889 \times 0.8) / (1.6889)$
= **0.842** or **84.2%**

Q19.

- a) **Perceptron:** A single neuron model used for binary classification (e.g., AND gate classifier).
- b) **CNN:** Deep learning model for image tasks (e.g., classifying cats/dogs).
- c) **RNN:** Model for sequential data (e.g., text prediction).
- d) **GAN:** Two-network system generating realistic data (e.g., AI-generated faces).

Q20.

- a) Models: Image generation models, text generation models, video generation models, audio generation models.
- b) It personalizes emails by analyzing customer behaviour and generating customised wording.
- c) Ethical concern: Risk of misleading content or copyright violation.
- d) Advantage: Ability to rapidly create multiple variations of dynamic videos tailored to user interests.

Q21.

- a) Goal: To propose data-driven solutions to reduce congestion and improve traffic flow.
- b) Data analysed: Peak hours, accident hotspots, vehicle speed patterns.
- c) Recommendation: New traffic signals, improved routes, or enhanced public transport.
- d) Best tool: **Data visualisation tools like Tableau / Power BI.**

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