



B.K. BIRLA CENTRE FOR EDUCATION

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



TERM-1 EXAMINATION (2026-27)- SET 01
ARTIFICIAL INTELLIGENCE (843) Marking Scheme

Class : XII A/B/C

Date : 04-09-2026

Admission No.:

Duration : 3 Hrs.

Max. Marks : 50

Roll No.:

General Instructions:

- (i) Please read the instructions carefully.
- (ii) This question paper consists of 21 questions in two Sections: Section – A & Section – B.
- (iii) Section – A has Objective type questions whereas Section – B contains Subjective type questions.
- (iv) Out of the given $(5 + 16) = 21$ questions, a candidate has to answer $(5 + 11) = 16$ questions in the allotted (maximum) time of 3 hours.
- (v) All questions of a particular section must be attempted in the correct order.

(vi) Section – A: Objective Type Questions (24 marks)

- (a) This section has 5 questions.
- (b) There is no negative marking.
- (c) Do as per the instructions given.
- (d) Marks allotted are mentioned against each question/part.

(vii) Section – B: Subjective Type Questions (26 marks)

- (a) This section has 16 questions.
- (b) A candidate has to do 11 questions.
- (c) Do as per the instructions given.
- (d) Marks allotted are mentioned against each question/part.

SECTION A: OBJECTIVE TYPE QUESTIONS

Q 1. Answer any 4 out of the given 6 questions on Employability Skills ($1 \times 4 = 4$ marks)

Question	Answer
i	(b) Pay Attention
ii	(a) Communication
iii	(d) Obsessive-Compulsive Personality
iv	(a) Worksheet
v	(c) Perseverance
vi	(b) Create long-term jobs

Q 2. Answer any 5 out of the given 6 questions ($1 \times 5 = 5$ marks)

Question	Answer
i	(c) Both (a) and (b)
ii	(b) Slicing

- iii (b) NumPy
 - iv (b) [20, 30, 40]
 - v (b) John Rollins
 - vi (c) From Requirements to Collection
- Q 3. Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)
- | Question | Answer |
|----------|---|
| i | (c) Predictive Analytics |
| ii | (c) Regression |
| iii | (c) Books, Journals, and Research Papers |
| iv | (c) 10 |
| v | (b) Image Segmentation |
| vi | (a) Complementary Metal-Oxide Semiconductor |
- Q 4. Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)
- | Question | Answer |
|----------|---|
| i | (b) It identifies and isolates important visual patterns or details for recognition |
| ii | (a) Identifying different fruits in a grocery store image |
| iii | (b) Unauthorised data collection and misuse of PII |
| iv | (b) Region-Based Convolutional Neural Network |
| v | (b) Support Vector Machines |
| vi | (b) Histogram equalization |
- Q 5. Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)
- | Question | Answer |
|----------|---|
| i | (c) They analyse past shopping trends and track real-time sales data |
| ii | (a) Tracking sales data in a small store to decide which products to restock |
| iii | (c) It helps find patterns, make smart predictions, and improve decision-making |
| iv | (c) Both (a) and (b) |
| v | (b) XML file |
| vi | (b) By enabling organisations to make informed, data-driven decisions |

SECTION B: SUBJECTIVE TYPE QUESTIONS

Answer any 3 out of the given 5 questions on Employability Skills (2 x 3 = 6 marks)

Answer each question in 20 – 30 words.

- 6. **Why is feedback important?** 2
Feedback helps a person understand their strengths and weaknesses, correct mistakes, improve performance, and achieve better results in personal and professional life.
- 7. **What are the two types of motivation?**
The two types of motivation are **intrinsic motivation**, which comes from within, and **extrinsic motivation**, which comes from external rewards or recognition.
- 8. **What is an Active Cell?**
An active cell is the currently selected cell in a spreadsheet where data can be entered, edited, or formatted. It is usually highlighted.

- What is meant by a business idea?**
A business idea is a concept or plan for providing a product or service that solves a problem or fulfils a customer need.
9. **Answer any 4 out of the given 6 questions in 20 – 30 words each (2 x 4 = 8 marks)**
10. **What is Accuracy?** 2
Accuracy is the measure of how correctly a model predicts outcomes. It is calculated as the ratio of correct predictions to the total predictions.
11. **What is the purpose of the data preparation stage in data analysis?**
Data preparation involves collecting, cleaning, transforming, and organising raw data to make it accurate, consistent, complete, and suitable for analysis.
12. **What is Computer Vision?**
Computer Vision is a field of Artificial Intelligence that enables computers to interpret, analyse, and understand images and videos from the visual world.
13. **How do machines see and recognise objects?**
Machines process images as pixel values, extract important features such as shapes and colours, and use trained models to identify and classify objects.
14. **What is Structured Data?**
Structured data is organised in a fixed format, usually rows and columns, making it easy to store, search, process, and analyse using databases.
15. **How does Big Data help in optimising supply chain management?**
Big Data analyses sales, inventory, and transportation information to predict demand, optimise inventory, reduce delays, improve logistics, and make supply chains more efficient.
16. **Answer any 4 out of the given 6 questions in 50– 80 words each (3 x 4 = 12 marks)**
16. **Differentiate between Unstructured and Semi-structured Data.** 3
Unstructured data does not follow a fixed format or predefined structure. Examples include images, videos, audio files, and social media posts. **Semi-structured data** does not follow a strict tabular structure but contains some organisational elements such as tags, keys, or metadata. Examples include XML and JSON files. Semi-structured data is easier to organise and analyse than unstructured data.
17. **Explain any three disadvantages of Big Data.**
Three disadvantages of Big Data are: **(1) Privacy and security risks:** Large amounts of personal information can be misused or exposed. **(2) High cost:** Storing, processing, and managing huge datasets requires expensive infrastructure and skilled professionals. **(3) Data quality issues:** Large datasets may contain inaccurate, incomplete, or duplicate information, which can lead to incorrect analysis and poor decisions.
18. **Explain any three challenges of Computer Vision.**
Three major challenges of Computer Vision are:
(1) Variations in lighting: Changes in brightness or shadows can affect object recognition.

(2) Complex backgrounds: Objects may be difficult to identify when surrounded by many other objects.

(3) Occlusion: When an object is partially hidden by another object, the system may have difficulty recognising it accurately.

Explain:

a. Image Normalization

b. Cropping Images

19.

Image normalization is a preprocessing technique used to adjust pixel values to a standard range. It helps improve consistency and makes images easier for models to process. **Image cropping** involves removing unwanted portions of an image and keeping only the required region. Cropping helps focus on important objects or areas and can reduce unnecessary information from the image.

Differentiate between Classification and Regression.

20.

Classification is a supervised learning technique used to predict **categorical or class-based outcomes**. For example, an email can be classified as spam or not spam.

Regression is used to predict **continuous numerical values**. For example, predicting house prices based on different features. Thus, classification produces categories, while regression produces numerical values.

Explain the role of DBA Programmer in Data Collection.

21.

A **DBA (Database Administrator) Programmer** plays an important role in managing and organising collected data. They design databases, create tables, maintain data storage systems, and ensure data is accurate and secure. They may also develop programs or queries to collect, retrieve, and manage data efficiently. DBAs ensure that authorised users can access the required data when needed.

*** “ALL THE BEST !” ***