



B.K. BIRLA CENTRE FOR EDUCATION

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



TERM-1 EXAMINATION (2026-27)- SET 02
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 x 4 = 4 marks)

Q. Answer

- i **(b) Being preoccupied**
- ii **(d) He wrote a letter to his sister.**
- iii **(b) Eat junk food like burgers**
- iv **(b) Animation**
- v **(c) Resources**
- vi **(a) Landfill waste**

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

Q. Answer

- i **(b) Slicing**
- ii **(b) Two-dimensional data structure**

- iii (a) First row, second column
 - iv (b) [20, 30, 40]
 - v (c) 10
 - vi (b) 5W1H Problem Canvas
- Q 3. Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)
- Q. Answer
- i (b) Identifying why a mobile phone company's sales dropped
 - ii (d) Fictional Storytelling
 - iii (d) All of these
 - iv (b) Precision
 - v (b) To enable computers to see, observe, and understand the visual world
 - vi (b) A collection of numbers representing pixel values
- Q 4. Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)
- Q. Answer
- i (c) RGB
 - ii (a) More pixels per unit area, resulting in finer detail
 - iii (b) Histogram equalization
 - iv (a) Pixels
 - v (b) Image Preprocessing
 - vi (b) By enabling organisations to make informed, data-driven decisions
- Q 5. Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)
- Q. Answer
- i (b) By using predictive analytics to improve patient care and data-driven research to develop new medicines
 - ii (b) GDPR
 - iii (c) Unfair outcomes and discrimination
 - iv (c) Predictive Model
 - v (c) It helps find patterns, make smart predictions, and improve decision-making
 - vi (c) They analyse past shopping trends and track real-time sales data

SECTION B: SUBJECTIVE TYPE QUESTIONS

Answer any 3 out of the given 4 questions on Employability Skills (2 x 3 = 6 marks)

Answer each question in 20 – 30 words.

Q6. What is Active Listening?

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Active listening is the process of carefully hearing, understanding, and responding to a speaker while giving full attention and avoiding unnecessary interruptions.

Q7. What is Personality?

Personality refers to the unique combination of a person's thoughts, feelings, behaviours, attitudes, and characteristics that makes them different from others.

Q8. Define Spreadsheet.

A spreadsheet is an electronic document that organises data in rows and columns and allows users to perform calculations, analysis, and data management.

Q9. Who is an Entrepreneur?

An entrepreneur is a person who identifies a business opportunity, takes calculated risks, organises resources, and starts or manages a business to earn profit.

Answer any 4 out of the given 6 questions in 20 – 30 words each (2 x 4 = 8 marks)

Q10. What is F1 Score?

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F1 Score is the harmonic mean of Precision and Recall. It provides a balanced measure of a classification model's performance, especially with imbalanced datasets.

Q11. Name any two techniques used in Diagnostic Analytics to find the root cause.

Two techniques used in Diagnostic Analytics to identify root causes are **Root Cause Analysis (RCA)** and **Drill-down Analysis**.

Q12. What is Deep Learning?

Deep Learning is a branch of Machine Learning that uses artificial neural networks with multiple layers to learn complex patterns from large amounts of data.

Q13. What does Instance Segmentation do in Computer Vision?

Instance Segmentation identifies and separates each individual object instance in an image, assigning a specific pixel-level mask to every detected object.

Q14. What is Unstructured Data?

Unstructured data is information that does not follow a predefined format or structure. Examples include images, videos, audio recordings, emails, and social media posts.

Q15. What are the six key attributes that define Big Data?

The six key attributes of Big Data are **Volume, Velocity, Variety, Veracity, Value, and Variability**. These describe its size, speed, diversity, reliability, usefulness, and changing nature.

Answer any 4 out of the given 6 questions in 50– 80 words each (3 x 4 = 12 marks)

Q16. Explain three advantages of Big Data.

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1. **Better decision-making:** Big Data helps organisations analyse large amounts of information and make accurate, data-driven decisions.
2. **Improved customer experience:** Businesses can understand customer behaviour and provide personalised products and services.

3. **Predictive analysis:** Big Data helps identify trends and predict future outcomes, allowing organisations to plan effectively and reduce risks.

Q17. Explain any three characteristics of Data.

1. **Volume:** It refers to the huge amount of data generated and collected from different sources.
2. **Velocity:** It refers to the speed at which data is generated, collected, and processed.
3. **Variety:** It refers to different forms of data, such as text, images, videos, audio, and numerical data.

Q18. Explain the role of DBA Programmer in Data Collection.

A **DBA (Database Administrator) Programmer** manages databases used for collecting and storing data. They design database structures, create tables, maintain data accuracy, and ensure secure data storage. They also develop queries and programs to collect, retrieve, and organise data efficiently. DBAs ensure that authorised users can access the required data while protecting it from unauthorised access.

Q19. Explain:

a. Resizing Images

Image resizing is the process of changing the dimensions or resolution of an image. It can make an image smaller or larger while maintaining its required proportions. Resizing helps reduce storage requirements and computational processing time. It is commonly used to make images suitable for Computer Vision models.

b. Histogram Equalization

Histogram equalization is an image preprocessing technique used to improve the contrast of an image. It redistributes the intensity values of pixels so that details become more visible, especially in images that are too dark or have poor contrast.

Q20. Explain any three applications of Computer Vision.

1. **Face Recognition:** Computer Vision can identify or verify people by analysing facial features.
2. **Medical Imaging:** It helps doctors analyse X-rays, CT scans, and MRI images to detect diseases and abnormalities.
3. **Autonomous Vehicles:** Computer Vision enables vehicles to identify roads, traffic signs, pedestrians, and other objects for safer navigation.

Q21. Explain Primary Data Source with examples.

Primary data is information collected directly by a person or organisation for a specific purpose. It is original and collected firsthand from the source. Common methods include **surveys, interviews, questionnaires, observations, experiments, and focus groups**. For example, a company may conduct a customer survey to collect feedback about a newly launched product.

***** “ALL THE BEST !” *****