



B.K. BIRLA CENTRE FOR EDUCATION

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

ANNUAL EXAMINATION: 2025-26 ARTIFICIAL INTELLIGENCE (843)

Class: XI /SET-01

Date: 18-02-2026

Admission No. :

Time : 2 Hrs.

Max Marks: 50

Roll No. :

General Instructions:

1. Please read the instructions carefully.
2. This Question Paper consists of 21 questions in two sections: Section A & Section B.
3. Section A has Objective type questions whereas Section B contains Subjective type questions.
4. Out of the given (5 + 16 =) 21 questions, a candidate has to answer (5 + 10 =) 15 questions in the allotted (maximum) time of 2 hours.
5. All questions of a particular section must be attempted in the correct order.
6. **SECTION A - OBJECTIVE TYPE QUESTIONS (24 MARKS):**
 - i. This section has 05 question.
 - ii. Marks allotted are mentioned against question/part.
 - iii. There is no negative marking.
 - iv. Do as per the instructions given.
7. **SECTION B – SUBJECTIVE TYPE QUESTIONS (26 MARKS):**
 - i. This section has 16 questions.
 - ii. A candidate has to do 10 questions.
 - iii. Do as per the instructions given.
 - iv. Marks allotted are mentioned against each question/part.

MARKING SCHEME

SECTION A: OBJECTIVE TYPE QUESTIONS

Q.(1) Answer any 4 out of the given 6 questions on Employability Skills.

(4 x 1 = 4)

- i. One of the significant ways of being _____ is learning to say 'no' without upsetting others.
 - a. passive
 - b. assertive*
 - c. passive-aggressive
 - d. aggressive
- ii. Which of these is not an example of oral communication?
 - a. group discussion
 - b. telephone call
 - c. video conferencing
 - d. email*
- iii. If an idea is innovative and the way it is implemented is also innovative, the growth opportunities of the business will
 - a. decrease
 - b. increase *
 - c. Neither a or b
 - d. Both a and b
- iv. Which among the following businesses is involved in developing the raw materials into finished products to meet the needs of its customers?
 - a. entrepreneurship
 - b. trading
 - c. manufacturing *
 - d. service

v. Green policies seek to provide_____ with a decent living and a decent job in a healthy environment.

a. companies b. sectors of society* c. workers d. either a or b

vi. Which of the following mission aims to conserve, restore and expand forest cover?

a. Swachh Bharat Mission b. Green India Mission*
c. National Mission on sustainable agriculture d. 'Liter of Light' Mission

Q.(2) Answer any 5 out of the given 6 questions.

(5 x 1 = 5)

i. _____extracts information from the spoken and written words using algorithms.

a. Machine learning b. Computer vision
c. Data science d. Natural language processing*

ii. _____ helps develop intelligent machines and software that learn, function, and react like humans.

a. Deep Learning b. Machine Learning
c. Artificial Intelligence* d. Robotics

iii. What is the primary goal of data science?

a. Automating tasks b. Extracting meaningful insights from data*
c. Enhancing computer vision d. Developing machine learning algorithms

iv. Which industry is NOT actively seeking AI integration?

a. Financial services b. Healthcare
c. Craft and Artisanal * d. Agriculture

v. Which of the following is a primary responsibility of a Machine Learning Engineer?

a. Designing hardware components b. Building AI systems and algorithms*
c. Managing IT infrastructure d. Writing user interface code

vi. In which sector are Autonomous Vehicle Engineers primarily employed?

a. Retail b. Automobile * c. Media d. Tourism

Q.(3) Answer any 5 out of the given 6 questions.

(5 x 1 = 5)

i. What would be the output of the following code?

```
import numpy as np
arr_2d = np. array ( [ [1, 2, 3], [4, 5, 6], [7, 8, 9] ] )
print (arr_ 2d)
```

a. [12 3] [4 5 6] [7 8 9] b. (1 2 3) (4 5 6) (7 8 9)
c. [[1 2 3] (4 5 6) [7 8 9]] d. [[1, 2, 3], [4, 5, 6], (7, 8, 9)] *

ii. What is the main purpose of the Pandas library?

a. Web development b. Data manipulation and analysis *
c. Game development d. Graphics design

iii. What are the two main data structures provided by Pandas?

a. List and Tuple b. Array and Matrix
c. Series and DataFrame * d. Dictionary and Set

iv. Which of the following is not one of the five different stages of design thinking?

a. Empathise b. Ideate c. Evaluate * d. Prototype

v. How do "Individual Brainstorming" help introverts?

a. They can express their ideas in writing * b. They can voice their thoughts
c. They learn to stand for themselves d. They get to know others

vi. What is crucial for a successful problem-defining process?

a. Basic analysis and evaluation * b. Data cleansing
c. Defining the features d. AI Modelling

Q.(4) Answer any 5 out of the given 6 questions.

(5 x 1 = 5)

- i. What method employs automated software to gather specific information and data from websites?
 - a. Social Media Data Tracking
 - b. Web Scraping*
 - c. Satellite Data Tracking
 - d. Online Data Platforms
- ii. Kaggle, GitHub, KDNuggets, and Google Dataset Search are examples of what type of secondary data source?
 - a. Books, textbooks, and encyclopedias
 - b. Web Scraping
 - c. Satellite Data Tracking
 - d. Online Data Platforms*
- iii. Which measure of central tendency is most affected by extreme values (outliers)?
 - a. Mean *
 - b. Median
 - c. Mode
 - d. All are equally affected
- iv. What is the goal of linear regression?
 - a. To find a polynomial relationship between variables
 - b. To estimate the probability of an event
 - c. To fit a straight line that minimises the sum of squared differences between observed and predicted values *
 - d. To group data into clusters
- v. Which of the following is used when a situation might belong to more than one class at the same time?
 - a. Multi-label classification *
 - b. Binary classification
 - c. Multi-class classification
 - d. Imbalanced classification
- vi. For which one of these relationships could we use a regression analysis?
 - a. Relationship between political party membership and opinion about Euthanasia.
 - b. Relationship between gender and whether person has a mole
 - c. Relationship between weight and height *
 - d. Relationship between eye colour (blue, brown, etc.) and hair colour (black, blond, etc.).

Q.(5) Answer any 5 out of the given 6 questions.

(5 x 1 = 5)

- i. What is a key characteristic of a rule-based chatbot?
 - a. Uses Natural Language Processing and Machine Learning
 - b. Works with established rules and decision trees *
 - c. Provides personalised interactions based on user preferences
 - d. Prone to biases in training data
- ii. What ethical considerations are associated with AI-based chatbots?
 - a. Difficulty in understanding complex language
 - b. Significant development expenditures
 - c. Privacy, manipulation, and responsible use *
 - d. Consistent and accurate responses
- iii. Which phase of NLP involves studying and identifying a language's word structure and breaking down text into words, phrases, and paragraphs?
 - a. Syntactic Analysis
 - b. Lexical Analysis *
 - c. Semantic Analysis
 - d. Pragmatic Analysis
- iv. What is one potential consequence of biased AI systems mentioned in the text?
 - a. Decreased trust in technology *
 - b. Increased fairness in decision-making
 - c. Enhanced user satisfaction
 - d. Greater reliance on AI systems
- v. What is the primary cause of facial recognition algorithms having difficulty identifying people with darker complexions?
 - a. Poor camera quality
 - b. Lack of diverse training data *
 - c. Over-representation of older faces
 - d. Use of outdated algorithms

- vi. What is meant by bias awareness in the context of AI?
- Understanding that AI systems can show unfair preferences *
 - Ensuring AI systems are technologically advanced
 - Using only the latest AI algorithms
 - Avoiding the use of AI in sensitive areas

SECTION B: SUBJECTIVE TYPE QUESTIONS

Answer any 3 out of the given 5 questions on Employability Skills.

(3 x 2 = 6)

Answer each question in 20-30 words.

Q6. What is the meaning of Goal Setting?

Answer:

Q7. What is grooming?

Answer: Grooming is the practice of maintaining a neat, clean, and presentable appearance and good personal hygiene.

Q8. Define word processor.

Answer: A word processor is a software application used to create, edit, format, save, and print text documents.

Q9. What is the use of print preview?

Answer: Print Preview is used to see how a document will look on paper before printing. It helps in checking layout, margins, and formatting.

Q10. Define: a. Entrepreneur b. Employee

Answer: a. Entrepreneur: A person who starts and manages a business by taking financial risks to earn profit.

b. Employee: A person who works for an organisation or company and receives salary or wages.

Answer any 4 out of the given 6 questions in 20-30 words each.

(4 x 2 = 8)

Q11. What do you mean by Computer Vision?

Answer: Computer Vision is a field of AI that enables machines to see, analyse, and understand images and videos.

Q12. What are the responsibilities of a Data Scientist in the AI field?

Answer: A Data Scientist:

- Collects and organises data
- Analyses data to find patterns

- Builds models to solve problems
- Helps in decision-making using data insights

Q13. Define testing data.

Answer: Testing data is the part of the dataset used to check the accuracy and performance of a trained AI or machine learning model.

Q14. List any two application of KNN.

Answer: • Image recognition

- Recommendation systems
- (Also used in handwriting recognition, medical diagnosis, etc.)

Q15. List the five phases of NLP.

Answer: • Lexical Analysis

- Syntactic Analysis
- Semantic Analysis
- Discourse Integration
- Pragmatic Analysis

Q16. Why is privacy a significant concern in AI ethics?

Answer: Privacy is a concern because AI systems collect and process personal data, which can be misused, leaked, or accessed without permission.

Answer any 3 out of the given 5 questions in 50-80 words each. (3 x 4 = 12)

Q17. Explain any four common job roles in AI.

Answer: • **Data Scientist:** Analyses data and finds useful patterns.

- **Machine Learning Engineer:** Builds and trains AI models.
- **AI Researcher:** Develops new AI techniques and algorithms.
- **Computer Vision Engineer:** Works on image and video-based AI systems.

Q18. Explain any four features of Python.

Answer: • Easy to learn and use

- Free and open source
- Large library support
- Platform independent

Q19. Elaborate the five different stages of design thinking.

Answer: • **Empathise:** Understand the user's problem

- **Define:** Clearly define the problem
- **Ideate:** Think of possible solutions
- **Prototype:** Create a sample solution
- **Test:** Test the solution and improve it

Q20. Differentiate between Primary Data and Secondary data.

Answer:

Primary Data	Secondary Data
Collected first-hand	Already collected by someone else
Original and fresh	Not original
More reliable	Less reliable
Example: Surveys, interviews	Example: Books, websites

Q21. Define: a. Causation b. Outlier c. Correlation d. Classification

Answer: a. Causation: A relationship where one event causes another event.

b. Outlier: A data value that is very different from the rest of the data.

c. Correlation: A relationship showing how two variables are related to each other.

d. Classification: A process of grouping data into different categories or classes.

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