



B.K. BIRLA CENTRE FOR EDUCATION

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

Term-I Examination (2026-2027) ARTIFICIAL INTELLIGENCE (417) Set-02

Class: X

Date: 11/09/26

Admission No.

Time : 3 hr

Max Marks: 50

Roll No. :

General Instructions:

1. Please read the instructions carefully.
2. This Question Paper contain two sections: Section A & Section B.
3. Section A has Objective type questions whereas Section B contains Subjective type questions.
4. All questions of a particular section must be attempted in the correct order.
5. **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.
6. **SECTION B – SUBJECTIVE TYPE QUESTIONS (26 MARKS):**
 - i. This section has 16 questions.
 - ii. A candidate has to do 11 questions.
 - iii. Do as per the instructions given.
 - iv. 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)

- i. _____ and _____ communication is very important in work and business environments.
 - a. Listening and Writing
 - b. Clear and Concise
 - c. Both a) and b)
 - d. None of the above
- ii. An address to a large group is an example of _____ communication.
 - a. Interpersonal Communication
 - b. Written Communication
 - c. Small Group Communication
 - d. Public Communication
- iii. What are the qualities of self-motivated people?
 - a. Know what they want from life
 - b. Are focused
 - c. Know what is important
 - d. All of the above
- iv. What are the smart methods to set goals in self-management skills?
 - a. Specific & Measurable
 - b. Achievable & Realistic
 - c. Time bound
 - d. All of the above
- v. Operating system is a:
 - a. hardware
 - b. software
 - c. humanware
 - d. hardware and humanware

- vi. Which is the most important software in any computer?
- a. Application software.
 - b. System software.
 - c. Operating System (OS)
 - d. Programming software

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

(1 x 5 = 5)

i. Read the examples given below

- (i) Using Chat GPT to write an email
- (ii) Face unlock technology of mobile phones using camera
- (iii) Turning off lights with IoT device
- (iv) Hand sanitizer dispenser having sensor

Choose the options that are not AI

- (a) (i) and (ii)
- (b) (iii) and (i)
- (c) (iii) and (iv)
- (d) (i), (iii) and (iv)

ii. Search engines not only predict what popular searches may apply to your query as you start typing, but it looks at the whole picture and recognizes what you're trying to say rather than the exact search words. This is an example of

- (a) Computer Vision
- (b) Data Sciences
- (c) Natural Language Processing
- (d) Natural Language Understanding

iii. _____ is a domain of AI that depicts the capability of a machine to get and analyse visual information and afterwards predict some decisions about it.

- (a) NLP
- (b) Data Science
- (c) Augmented Reality
- (d) Computer Vision

iv. Email filters, spam filters, smart assistants are the examples of

- (a) Pocket Assistants
- (b) CV
- (c) NLP
- (d) Evaluation

v. Which of the following applications is not associated with Natural Language Processing (NLP)?

- (a) Sentiment Analysis
- (b) Speech Recognition
- (c) Spam Filtering in emails
- (d) Stock Market Analysis

vi. Which domain of AI is used for interacting with virtual assistants such as Siri and Alexa?

- (a) Machine Learning (ML)
- (b) Computer Vision (CV)
- (c) Natural Language Processing (NLP)
- (d) Technical Vision (TV)

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

(1 x 5 = 5)

i. Reinforcement learning is particularly useful for scenarios where:

- (a) Large amounts of labelled data are available
- (b) The desired outcome is clear, but the path to achieve it is unknown.
- (c) The data is structured and easily categorized.
- (d) The task requires reasoning and logical deduction.

ii. Which of these is an application of Machine Learning?

- (a) Building databases
- (b) Writing programming code
- (c) Manual data processing
- (d) Recommendation systems

iii. An AI agent playing a game and learning from its rewards and penalties is an example of:

- (a) Supervised Learning
- (b) Unsupervised Learning
- (c) Reinforcement Learning
- (d) Evolutionary Learning

iv. Which of the following types of datasets does unsupervised learning use?

- (a) Labelled dataset
- (b) Unlabelled dataset
- (c) partially labelled dataset
- (d) Fixed rules dataset

v. What type of feedback does reinforcement learning use?

- (a) Labelled data feedback
- (b) Unlabelled data feedback
- (c) Reward and penalty feedback
- (d) No feedback

vi. Which Machine Learning technique is best for grouping customers based on their shopping behaviours?

- (a) Regression
- (b) Classification
- (c) Association
- (d) Clustering

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

(1 x 5 = 5)

i. Why is it essential to evaluate a machine learning model using evaluation techniques such as train-test split?

- (a) To increase the complexity of the model
- (b) To reduce the size of the training dataset
- (c) To eliminate the need for testing data
- (d) To assess how well the model performs on unseen data

ii. Which of the following describes an overfitting scenario in model evaluation?

- (a) The model performs poorly on both training and test data.
- (b) The model performs well on both training and test data.
- (c) The model performs well on training data but poorly on test data.
- (d) The model performs poorly only on test data but memorizes random noise from training data.

iii. What does a "perfect fit" represent in model evaluation?

- (a) The ideal balance between complexity and generalisation
- (b) High bias and low variance
- (c) Low bias and high variance
- (d) Overfitting the training data

iv. A student solved 90 out of 100 questions correctly in a multiple-choice exam. What is the error rate of the student's answers?

- (a) 10%
- (b) 9%
- (c) 8%
- (d) 11%

v. When is accuracy an appropriate metric to use?

- (a) When the dataset is highly unbalanced with a significant difference between positive and negative classes.
- (b) When the dataset is balanced, and both positive and negative classes are nearly equal.
- (c) When precision is the most important factor.
- (d) When recall is the most important factor.

vi. Which metric measures how many positive predictions made by the model are actually correct?

- (a) Recall
- (b) Precision
- (c) Accuracy
- (d) F1-Score

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

(1 x 5 = 5)

i. Which approach allows users to build, train, and deploy AI models without needing any programming or coding knowledge?

- (a) Data Science (b) No-Code AI
(c) Machine Learning (d) Natural Language Processing

ii. How does Data Science support AI?

- (a) It creates raw data (b) It acts as the backbone, helping AI systems learn and improve
(c) It stores data for later use (d) It makes decisions for AI systems

iii. What does Spotify create based on your listening history?

- (a) Movie suggestions (b) Playlists
(c) Job recommendations (d) Shopping ads

iv. Which of the following is one of the main domains of AI?

- (a) Social Science (b) Data Science
(c) Physical Science (d) Mechanical Engineering

v. What is the main thing that drives Artificial Intelligence (AI) technology?

- (a) Human intelligence (b) Algorithms
(c) Machines (d) Data

vi. What is the purpose of facial recognition in smart homes?

- (a) To increase Internet speed
(b) To recognise family members for security purposes
(c) To generate digital filters
(d) To track weather changes

SECTION B: SUBJECTIVE TYPE QUESTIONS

Answer any 7 out of the given 10 questions:

(7 x 2 = 14)

Q. (2) Write any two barriers in communication.

Q. (3) What do you mean by goal setting?

Q. (4) Define the term ICT.

Q. (5) What is Utility software?

Q. (6) Define Deep Learning.

Q. (7) What do you mean by a testing data set?

Q. (8) What is Data Science?

Q. (9) What is classification in Computer Vision?

Q. (10) What is Google Cloud AutoML?

Q. (11) Why is it important to maintain a balance between bias and variance in a machine learning model?

Answer any 4 out of the given 6 questions:

(3 x 4 = 12)

Q.(12) Differentiate between data acquisition and data exploration in AI project cycle.

Q.(13) Explain the three basic layers of Artificial Neural Network.

Q.(14) Explain the different evaluation model.

Q.(15) Explain any three disadvantages of no-code tools.

Q.(16) Differentiate between Computer Vision and Image Processing.

Q.(17) Calculate the following measures for the given confusion matrix – Accuracy and Precision.

Confusion Matrix	True Positive	True Negative
Predictive Positive	100	45
Predicted Negative	65	320

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