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-01

Class: X **Time : 3 hr**
Date: 11/09/26 **Max Marks: 50**
Admission No. …… **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. Communication skills are very important in any _____.
a. Occupation b. Business c. Both a) and b) d. None of the above

ii. 'Communication' is derived from the _____ word.
a. Latin Word b. Devanagari Word c. Latin Work d. None of the above

iii. When you are under _____ for a prolonged period of time, it can cause health problems and mental troubles as well.
a. Stress b. Discipline c. Timeliness d. Goal – Setting

iv. A person's _____ is an acquired or natural ability that allows them to execute a specific job or task with a high level of proficiency.
a. Weaknesses b. Strength c. Interest d. Abilities

v. Extension of notepad file _____.
a. .txt b. .bmp c. .jpg d. .psd

vi. GUI stands for :

a. Graphical User Interaction b. Graphical User Interface

c. Graphical Upper Interface d. None of these

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

i. _____ is a concept to unify statistics, data analysis, machine learning and their related methods in order to understand and analyze actual phenomena with data.

(a) Computer Vision (b) Natural Language Processing

(c) Data Science (d) Computer Science

ii. ____ is the sub-field of AI that is focused on enabling computers to understand and process human languages.

(a) Deep Learning (b) Machine Learning

(c) NLP (d) Data Science

iii. When a machine possesses the ability to mimic the following human traits, it is said to have artificial intelligence. Identify the positive traits that an Al machine should possess.

(i) Make decisions (ii) Bias

(iii) Predict (iv) Learn and improve on its own

(a) (i), and (iii) only

(b) (i), (iii) and (iv) only

(c) (ii) and (iv) only

(d) (i), (ii), and (iv) only

iv. Statement 1 The goal of Artificial intelligence is to create intelligent machines that can mimic human behavior.

Statement 2 Need AI for today's world to solve complex problems.

(a) Both Statement 1 and Statement 2 are correct

(b) Both Statement 1 and Statement 2 are incorrect

(c) Statement 1 is correct but Statement 2 is incorrect

(d) Statement 2 is correct but Statement 1 is incorrect

v. 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

vi. The Indian Government banned a few apps stating "servers in the hostile nation are receiving and using the acquired data improperly. Which terminology suits best for this action?

(a) AI Ethics (b) Data Privacy

(c) AI Bias (d) AI Access

Q. 3 Answer any 5 out of the given 6 questions (1 x 5 = 5)

i. Machine Learning focuses on_____.

(a) Building Circuits (b) Learning from Data

(c) Simulating Emotions (d) Physical Robots

ii. Which of the following is labelled data?

(a) Unmarked data (b) Marked or tagged data

(c) Raw data (d) Unusable data

iii. Which of the following uses unsupervised learning?
(a) A chatbot answering FAQs using predefined rules.
(b) A model predicting exam scores based on past performance.
(c) Grouping photos in a gallery into "vacation", "family", and "pets" categories.
(d) A weather prediction system using historical data.

iv. Identify the role of the input layer in a neural network.
(a) Computation (b) Receive data
(c) Predictions (d) Activation functions

v. An Al 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

vi. 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.

Q. 4 Answer any 5 out of the given 6 questions **(1 x 5 = 5)**

i. Which metric measures how many positive predictions made by the model are actually correct?
(a) Recall (b) Precision
(c) Accuracy (d) F1-Score

ii. Which term refers to the actual value being positive, but the model predicting it as negative?
(a) True Positive (b) False Positive
(c) False Negative (d) True Negative

iii. What is a False Positive (FP)?
(a) When the model incorrectly predicts a positive value when the actual value is negative
(b) When the model correctly predicts a positive value
(c) When the model incorrectly predicts a negative value when the actual value is positive
(d) When the model correctly predicts a negative value

iv. Calculate the F1 score of the model, when a model correctly predicts 120 positive sentiments out of 200 positive instances. However, it also incorrectly predicts 40 negative sentiments as positive.
(a) 0.8 (b) 0.67 (c) 0.72 (d) 0.82

v. What does the classification accuracy of a model indicate?
(a) The ability of the model to classify negative cases
(b) The number of false positives in the dataset
(c) The proportion of incorrect predictions
(d) The percentage of correct predictions out of total predictions

vi. What does "Error" refer to in model evaluation?
(a) The difference between the model's prediction and the actual outcome
(b) The total number of correct predictions
(c) The total number of false positives in the model
(d) The percentage of false negatives in the model

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

i. What does the success of Al mainly depend on?
(a) The size of the machine (b) The amount, quality and type of data it receives
(c) The speed of the algorithms (d) The location of the Al system

ii. How do Al systems learn?
(a) By using human intelligence (b) Through algorithms and data
(c) By interacting with people (d) By collecting physical objects

iii. What does CTR stand for in digital advertising?
(a) Click Time Rate (b) Customer Tracking Rate
(c) Click-Through Rate (d) Content Time Rate

iv. Which of the following is the main advantage of the Low/No-Code Al approach?
(a) It requires advanced coding skills
(b) It allows people with limited technical skills to build Al models
(c) It focuses only on complex algorithms
(d) It is only for professional Al developers

v. What is the main purpose of Data Science?
(a) To create computers (b) To extract meaningful insights from data
(c) To design websites (d) To write computer programs

vi. What is the primary goal of Computer Vision?
(a) To understand and interpret visual information from the world
(b) To simulate human brain activity
(c) To create 3D models from images
(d) To develop algorithms for natural language processing

SECTION B: SUBJECTIVE TYPE QUESTIONS

Answer any 7 out of the given 10 questions: **(2 x 7 = 14)**

Q. (2) What is Verbal communication?

Q. (3)What are the advantages of working independently?

Q. (4) What is Operating System?

Q. (5) Why is data backup important?

Q. (6) What is the Al project cycle?

Q. (7) What do you understand by statistical data?

Q. (8) Why is it important to maintain a balance between bias and variance in a machine learning model?

Q. (9) What is Teachable Machine?

Q. (10) How are face filters used in Computer Vision?

Q. (11) What is classification in Computer Vision?

Answer any 4 out of the given 6 questions: **(3 x 4 = 12)**

Q.(12) Explain any three applications of Statistical Data.

Q.(13) What is Rule-based Approach? Write any one drawback of it.

Q.(14) Explain the concept of a confusion matrix and its components.

Q.(15) Differentiate between Custom Code, Low Code and No Code.

Q.(16) Explain any three role does Computer Vision play in Self-driving Cars?

Q.(17) An Al model made the following predictions for Book Sales forecast. Calculate Accuracy and precision for the following confusion matrix:

Confusion Matrix	True Positives	True Negatives
Predicted Positive	50	40
Predicted Negative	12	10

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