



B.K. BIRLA CENTRE FOR EDUCATION

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

PRE MID TERM : 2025-26 ARTIFICIAL INTELLIGENCE (417)

Class: X

Date: 01-08-2025

Admission No. :

Time : 1 hr.

Max Marks: 25

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 (07 MARKS):**
 - i. This section has 01 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 (18 MARKS):**
 - i. This section has 14 questions.
 - ii. A candidate has to do 8 questions.
 - iii. Do as per the instructions given.
 - iv. Marks allotted are mentioned against each question/part.

ANSWER KEY

SECTION A: OBJECTIVE TYPE QUESTIONS

Q.(1) Answer any 7 out of the given 10 questions :

(7 x 1 = 7)

- (i) Which one of the following is a sign of Good Stress ?
 - (a) **Excited**
 - (b) Pain in body
 - (c) Fever
 - (d) Irritating nature
- (ii) The self management skills of an employee are very important at the workplace to acquire
 - (a) Driving skill
 - (b) Maintenance skill
 - (c) **Self confidence**
 - (d) Physical strength
- (iii) Which of the following acts as an interface between the user and the computer ?
 - (a) **Operating System**
 - (b) Excel
 - (c) Impress
 - (d) LibreOffice Calc
- (iv) Which of the following is a valid file extension for Word file ?
 - (a) .jpg
 - (b) **.docx**
 - (c) .text
 - (d) .txt
- (v) 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
- (vi) What is the primary purpose of model evaluation in machine learning ?
 - (a) To reduce the size of the dataset
 - (b) To measure the model's performance and ensure it generalizes well to unseen data**
 - (c) To increase the complexity of the model
 - (d) To avoid the need for real world testing
- (vii) In which scenario is a model said to be “underfitting” ?
 - (a) The model performs poorly on both training and test sets**
 - (b) The model performs well on both training and test sets
 - (c) The model memorizes the training data but fails to generalize
 - (d) The model performs well on the training set but poorly on the test set
- (viii) What does the success of AI mainly depend on ?
 - (a) The size of the machine
 - (b) The amount, quality and type of data it receives**
 - (c) The speed of the algorithm
 - (d) The location of the AI system
- (ix) Which of the following tools is an open source data mining and machine learning tool designed for data analysis, visualization and exploration ?
 - (a) Microsoft Excel
 - (b) Tableau
 - (c) Orange data Mining**
 - (d) SPSS
- (x) What is the main thing that drives Artificial Intelligence (AI) technology ?
 - (a) Human intelligence
 - (b) Algorithms**
 - (c) Machines
 - (d) Data

SECTION B: SUBJECTIVE TYPE QUESTIONS

Answer any 6 out of the given 10 questions:

(6 x 2 = 12)

Q. (2) What do you understand by “Ability to work Independently” ?

Ans. : Ability to work independently means that you believe in doing the job by yourself with minimum support and supervision from others. You have the ability to manage your own time, priorities and resources to get the work completed.

Q. (3) How is Self awareness helpful in enhancing your ability to work independently ?

Ans. : It helps you :

- Improve your skills by recognising your passion and your commitments in life
- Channelise your energy in your favour with full productivity
- Focus on your weakness
- By giving happiness with the credibility of your work
- Bringing good leadership qualities at the workplace
- Manage your emotions and behaviour to strengthen your relationships in personal and professional life

Q. (4) What do you mean by an Operating System ? Name any two operating system.

Ans. :

An **Operating System** is a system software that manages the hardware and software resources of a computer. It acts as an interface between the user and the computer hardware, enabling users to run

applications and perform tasks like file management, memory management, process control, and input/output operations.

Two examples of Operating Systems are:

1. **Windows**
2. **Linux**

Q. (5) What is the use of antivirus software ? Name any two commonly used anti virus software.

Ans. :

Antivirus software is used to **detect, prevent, and remove malicious software (malware)** such as viruses, worms, trojans, and spyware from a computer or device. It helps protect the system from data loss, unauthorized access, and performance issues caused by malware.

Two commonly used antivirus software are:

1. **Norton Antivirus**
2. **McAfee Antivirus**

Q. (6) Why is it important to maintain a balance between bias and variance in a machine learning model ?

Ans. : It is important to maintain a balance between bias and variance in a machine learning model to ensure the model performs consistently on both training and test data.

Q. (7) What is precision in model evaluation, and why is it important in spam detection ?

Ans. : Precision of the model is an important aspect for evaluation. So, if the Precision is more, that would mean that False Positive cases are less than the True Positive cases.

In email spam detection, False Positives can be costly, leading to missed business opportunities or communication breakdowns. Precision is critical when the cost of a False Positive is high, such as in fraud detection systems where unnecessary transaction rejections can cause inconvenience to customers.

Q. (8) Why is it important to split the dataset into training and testing sets ?

Ans. : Splitting the training set data is a crucial step in model evaluation, allowing for a systematic assessment of the model's performance by creating distinct datasets for training, validation, and testing. Let's learn more about splitting the training set using the Train-Test split in detail.

Q. (9) What is Data Science ?

Ans. : **Data Science** is a field of study that involves **collecting, analyzing, and interpreting large amounts of data** to extract meaningful insights and support decision-making. It combines techniques from **statistics, computer science, and domain knowledge** to understand patterns, make predictions, and solve complex problems using data.

Data Science is widely used in areas like healthcare, finance, marketing, and technology to improve services, forecast trends, and automate tasks.

Q. (10) Write and explain any two disadvantages of no-code tools.

Ans. :

Lack of flexibility : No code platforms are great for quick development, but they often come with limited customization options.

Automation Bias : No code tools often rely on automated systems to make decisions or suggestions, and users may become biased toward these automated suggestions.

Security Issues : No code platforms generally don't prioritize security, leaving limited options for users to control how their data is protected.

Q. (11) What is Teachable Machine ?

Ans. : **Teachable Machine** is a **web-based tool developed by Google** that allows anyone to **create machine learning models easily**, without writing any code. It helps users train a computer to recognize patterns using images, sounds, or body poses by providing examples and then testing the model in real time.

Teachable Machine is often used for educational purposes, experiments, and quick prototyping. It's especially useful for beginners to understand how artificial intelligence (AI) and machine learning work.

Answer any 2 out of the given 4 questions :

(2 x 3 = 6)

Q.(12) What are the tips for practicing the four steps for effective Time management ? Write and explain any three.

Ans. : Plan your activities to avoid any delay or postponement of assigned tasks.

- Organise your work.
- Find a place with minimum disturbanceso that you are able to complete your assigned task.
- Make a reasonable 'To-do' list.
- Prioritise your task based on its importance.
- Spend your time efficiently.
- Look for activities that save you from wasting time on insignificatnt activities.

Q.(13) What precautions will you take to protect your computer from computer viruses ? Write any three.

Ans. :

Install Antivirus Software: Use trusted antivirus software and keep it updated to detect and remove threats.

Keep Software Updated: Regularly update your operating system, browsers, and other software to fix security vulnerabilities.

Avoid Suspicious Emails and Links: Do not open emails, links, or attachments from unknown or untrusted sources.

Use Strong Passwords: Create strong, unique passwords and avoid sharing them.

Enable Firewall: Use a firewall to block unauthorized access to your computer.

Download from Trusted Sources: Only download software, apps, and files from official or reputable websites.

Backup Important Data: Regularly back up your important files to an external drive or cloud storage.

Avoid Using Public Wi-Fi for Sensitive Tasks: Use secure and private internet connections for banking and personal activities.

Q.(14) List the different evaluation model and explain any three.

Ans. : Evaluation techniques involve assessing a machine learning model's performance on training and test data.

Overfitting Model : The model fits the training data perfectly, including noise, but performs poorly on the testing data, leading to poor generalisation.

Underfitting Model : The model is too simplistic, failing to capture the pattern in both the training and testing data.

Perfect Fit Model : The model balances complexity and generalisation, fitting the training data well and performing well on the testing data.

Model selection : Splitting helps compare models and choose the best one based on performance on the testing set.

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

Ans. :

Custom Code/ High Code	Low Code	No Code
High code development refers to the conventional method of software creation, where developers build applications by writing code manually from the ground up using programming languages.	Low code development involves using platforms or tools that offer visual interfaces and pre built components, simplifying and accelerating the application development process.	No code development extends the principles of low code by enabling users to create applications without the need for any coding or scripting knowledge.
Coders are needed to write all the code manually	Programmers are required to write some code manually	Coding knowledge is not necessary, allowing anyone to create the product.
It is expensive	It is less expensive compared to high code	It is less expensive compared to low code
You have the flexibility to create anything and customise your product in any way you desire	You can customise your product only to a certain extent using code	No code AI tools have limited customisation options, as they are restricted to the functions available within the tool.

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