BK BIRLA CENTRE FOR EDUCATION
SARALA BIRLA GROUP OF SCHOOLS
SENIOR SECONDARY CO-ED DAY CUM BOYS' RESIDENTIAL SCHOOL
ANNUAL EXAMINATION (2024-25)

ARTIFICIAL INTELLIGENCE (843)

INDIAN PUBLIC SCHOOLS' CONFERENCE

Class : XI SCIENCE/COMMERCE/ARTS　　　　　　　　　　**Duration : 2 Hr**
Date   : __-02-2024　　　　　　　　　　　　　　　　　　**Max. Marks : 50**
Admission No.:　　　　　　　　　　　　　　　　　　　　**Roll No.:**

General Instructions:
1) All questions are compulsory.
2) Attempt all questions in sequence order.
3) The paper is divided into three sections – A, B & C
4) Section-A contains 14 questions carry 1 mark each, Section-B contain 12 questions carry 2 marks each and Section-C contain 4 questions carry 3 marks each.

Section-A

1. Which of these is not an appropriate non-verbal communication at work ?　　　1
   (a) Putting arm around a coworker's shoulder (b) Shaking hands firmly
   (c) Looking at the speaker with a smile　　　　　(d) Standing with an upright posture

2. _____ refers to a group of people who have complementary skills ad work towards a　　1
   common goal.
   (a) Group   (b) Company   (c) Team   (d) None of these

3. Which of the following statements is true ?　　　1
   (a) Headers are text or images inserted in the bottom margin.
   (b) If you insert a footer in one page, it will appear on all pages.
   (c) Headers are used to insert borders in a document.
   (d) You cannot insert date, time, page number, etc.., in a header or footer.

4. _____ means not to give up and keep going even when a difficult situation comes up.　　1
   (a) Values   (b) Attitude   (c) Perseverance   (d) None of these

5. _____ comes from natural sources or processes that are constantly replenished.　　1
   (a) Non Renewable energy (b) Renewable energy (c) Green Energy   (d) None of these

6. Generative AI focusses on:　　　1
   (a) Optimizing computer algorithms (b) Creating new data like text, images, or code
   (c) Analyze large datasets for patterns (d) Upgrading computer hardware.

7. Assertion / Reason :　　　1
   Statement 1: The job market for AI is saturated, making it difficult to find a job.
   Statement 2: The demand for AI professionals is high, but the supply of qualified candidates is limited.
   (a) Statement 1 is correct, but statement 2 is incorrect.
   (b) Statement 1 is incorrect, but statement 2 is correct.
   (c) Both the statements are correct.
   (d) Both the statements are incorrect.

8. Statement 1: Comments are essential for writing good python code. 1
   Statement 2: Comments explain the purpose of code sections and improve maintainability.
   (a) Statement 1 is correct, but statement 2 is incorrect.
   (b) Statement 1 is incorrect, but statement 2 is correct.
   (c) Both the statements are correct.
   (d) Both the statements are incorrect.

9. Statement 1: Design thinking is a linear process with clearly defined steps. 1
   Statement 2: Each phase of design thinking builds upon the previous one in a sequential order.
   (a) Statement 1 is correct, but statement 2 is incorrect.
   (b) Statement 1 is incorrect, but statement 2 is correct.
   (c) Both the statements are correct.
   (d) Both the statements are incorrect.

10. Explain communication cycle briefly. 1

11. At the animal shelter, after counting the cats, they are weighed. The counts are _____ values 1
    while weights are _____ values.
    (a) continuous, discrete   (b) continuous, qualitative (c) discrete, continuous
    (d) qualitative , continuous

12. Who coined the term 'Machine Learning' ? 1

13. Define the following : (a) Intent   (b) Entity 1

14. Define : Ethics 1

Section- B

15. What are the three types of business activities ? Explain any two. 2

16. **Mention some policy initiatives for green economy in India.** 2

17. Imagine you are creating a new AI assistant for your classmates. What tasks would you want it 2
    to help you with in your studies ? How would this AI assistant use its knowledge to be helpful
    and informative ?

18. A social bot is an agent that communicates more or less autonomously on social media, often 2
    with the task of influencing the course of discussion and / or the opinions of its readers. Divide
    the class into two groups and conduct a debate on:
    (a) "Are social bots ethical ?"
    (b) Is using Chatbots as therapy bots ethical ?

19. Write a Python program to print the table of a given number. (Using any loop) 2
    Example: If a user enter 2, then the following output will be displayed.
    2 x 1 = 2
    2 x 2 = 4
    …
    2 x 10 =20

20. Elaborate the five phases of Design Thinking. 2

21. Describe the 5W1H model. 2

22. The ages of a group of people in a community are : 25,28,30,35,40,45,50,55,60,65. Write a 2
    Python program to calculate the mean, median and mode of the ages.

23. A= $\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$ B= $\begin{bmatrix} 5 & 6 \\ 7 & 8 \end{bmatrix}$ C= $\begin{bmatrix} 9 & 10 \\ 11 & 12 \end{bmatrix}$ 2

Find the sum of the matrices, A, B and C:
A + (B + C)

24. List the difference between Artificial Intelligence and Machine Learning. Mention at-least three points.   2

25. Differentiate between: 2
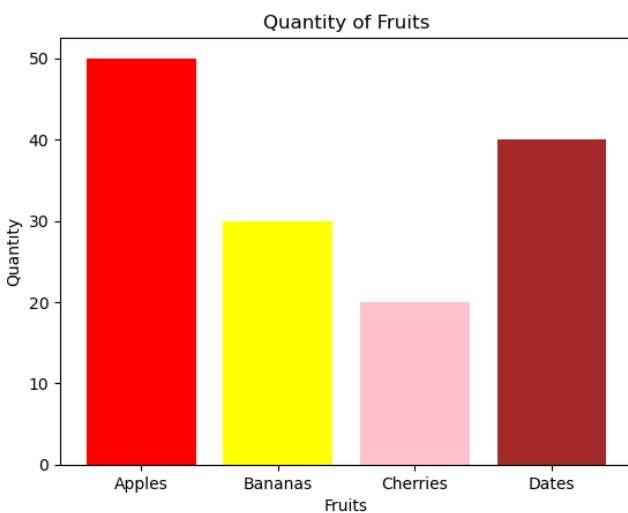Extraction based and Abstraction based summarization.

26. What do you understand about AI bias ? Discuss in detail with some examples.   2

Section- C

27. Write a python program / statements to create a dataframe 'df1' for the following data.   3

	Name	Age	Designation
0	Alice	28	Engineer
1	Bob	34	Manager
2	Charlie	25	Analyst
3	Diana	30	Designer

28. Write a python code to create a bar graph of the following data: 3
Note: show xlabel, ylabel and title also

29. Define K-Nearest Neighbour (KNN). Write two advantages and dis-advantages of it. Name any three applications of KNN.   3

30. List all the phases of Natural Language Processing and explain each type.   3

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