STD :- X   Max Marks :- 50 Marks
                                              Duration :- 2 Hours

SECTION A: OBJECTIVE TYPE QUESTIONS

Q1.	**Answer any 4 out of given 6 questions on Employability Skills (1M X 4 = 4M)**	
I.	Khushi spends all her after-school hours to practice more and more sample question papers. She wants to score full marks in her exams. This is an example of _____. a) Self-confidence b) Communication c) Self-motivation d) Self-esteem	1
II.	What is the term used when you press and hold the left mouse key and move the mouse around? a) Highlighting b) Dragging c) Selecting d) Moving	1
III	Which of the following is a valid file extension for Notepad file? a) .jpg b) .doc c) .text d) .txt	1
IV	What happens if you leave a device plugged in even after it is charged 100%? a) It can break. b) It can stop functioning. c) It can over-heat. d) Data can get corrupt.	1
V	How can an anti-virus protect your device? a) It can protect it from over-heating. b) It can increase its performance. c) It can prevent data from getting corrupt. d) It can backup data.	1
VI	The self-management skills of an employee are very important at the workplace to Acquire _____. a) Driving skills b) Maintenance skill c) Self-confidence d) Physical strength	1
Q2.	**Answer any 5 out of given 6 questions (1M X 5 = 5M)**	
I.	Price comparison websites are related to which domain of AI? a) Training b) Data Science c) Testing d) Labelled	1
II.	Data exploration provides us _____ data. a) Testing b) Training c) Graphical d) Raw	1
III	Select a game which is based on Data Science domain of AI:	1

		a) Rock Paper and Scissors	b) Mystery Animal	2
		c) Emoji Scavenger Hunt	d) Pokémon	
IV		Which of the following is not an authentic source for data acquisition?		1
		a) Sensors b) Surveys c) Web Scraping d) System Hacking		
V		_____ is a subset of Artificial Intelligence which enables machines to improve at tasks with experience (data).		1
VI		_____ is a set of multiple values which are of same datatype.		1

Q3.	Answer any 5 out of given 6 questions (1M X 5 = 5M)	

I.	Manpreet wants to develop Ni chatbot for his website to assist customers with frequently asked questions. What AI subfield is most relevant for building this chatbot ?
	     a) Natural language processing b) Computer vision
	     c) Speech recognition d) Reinforcement learning
		1

II.	Rajesh wants to use AI to make medical diagnoses based on patient data, with an emphasis on detecting complex pattern and relationships. What technology is best suited for this purpose?
	     a) Expert systems b) Machine learning
	     c) Natural language processing d) Deep learning
		1

III	For defining problem Kriti used a Canvas. What Canvas is it? a) 4 P's b) 4 Q's c) 4 W's d) 4 X's	1

IV	Garima has unable data. What kind of learning approach she must utilised for training model?
	     a) Supervised b) Unsupervised
	     c) Reinforcement d) Semi supervised
		1

V	_____ represents the data in a hierarchical form.	1
VI	API stands for _____.	1

Q4.	Answer any 5 out of given 6 questions (1M X 5 = 5M)	
I.	Sustainable development goals have set by the member of _____.	1

II.	Kalpana wants to know from Harshita that which data the model is simulated. What Harshita must have answered if she is correct?
	     a) Validation data b) Testing data
	     c) Total data d) Training data
		1

III	In __ the entire sum of the data is treated as a one unit represented by the complete circle. a) Bar chart b) Line chart c) Histogram d) Pie chart	1

IV	_____ is the first stage of air project cycle.
	     a) Problems scoping b) Data exploration
	     c) Data acquisition d) Data modelling
		1

V	Survey is a type of data acquisition method. (True/False)	1

| VI | _____ is a software library return for the python programming language for data manipulation and analysis.

    a) Pandas   b) NumPy   c) Matplotlib   d) Dataplot | 1 |

Q5.	**Answer any 5 out of given 6 questions (1M X 5 = 5M)**	
	A school has implemented a chatbot named "Homework Helper" that helps students with their homework. This chatbot uses a rule-based model, meaning it follows specific rules to answer students' questions. For example, if a student asks, "What is the capital of France?" the chatbot checks its rules and responds with "Paris." However, if a student asks a question that isn't covered by its rules, the chatbot cannot provide an answer.	
I.	What does it mean when we say the chatbot uses a "rule-based model"? a) The chatbot can learn new answers over time. b) The chatbot only follows specific, pre-programmed rules to give answers. c) The chatbot can understand and generate answers in multiple languages. d) The chatbot asks students to provide the rules for answers.	1
II.	If a student asks the Homework Helper, "What is the square root of 16?" and the chatbot responds correctly with "4," which of the following explains how it knew the answer? a) The chatbot guessed based on past answers. b) The chatbot applied a pre-defined rule for calculating square roots. c) The chatbot searched the internet for the answer. d) The chatbot asked another student for help.	1
III	A student asked the Homework Helper, "What did you eat for breakfast?" and the chatbot did not respond. Why might this have happened? a) The chatbot was busy helping another student. b) The question does not match any of the pre-programmed rules. c) The chatbot can't hear questions about food. d) The chatbot needs to be updated with breakfast rules.	1
IV	Which of the following is a limitation of the Homework Helper chatbot? a) It can answer any question perfectly. b) It can only provide answers for questions within its rule set. c) It is smarter than a human tutor. d) It learns new information from every student interaction.	1
V	How could the Homework Helper chatbot be improved to answer more questions? a) Add more rules to cover a wider range of topics. b) Make the chatbot guess answers randomly. c) Connect the chatbot to a human teacher. d) Teach the chatbot to search for answers on the internet.	1
VI	Homework Helper chatbot belongs to which domain of AI? a) Data Science b) Computer Vision c) Natural Language Processing d) Machine Learning	

SECTION B: SUBJECTIVE TYPE QUESTIONS

Answer any 3 out of the given 5 questions on Employability Skills (2 M x 3 = 6 M)

Answer question in 20 – 30 words.

Q6.	What is the significance of getting enough sleep in stress management?	2
Q7.	How can tracking time help in identifying time-wasting activities?	2
Q8.	What are 7'Cs of effective communication?	2
Q9.	Define Operating system. Give examples.	2
Q10.	Explain importance and need of Care and Maintenance of Computer.	2

Answer any 4 out of the given 6 questions (2 M x 4 = 8 M)
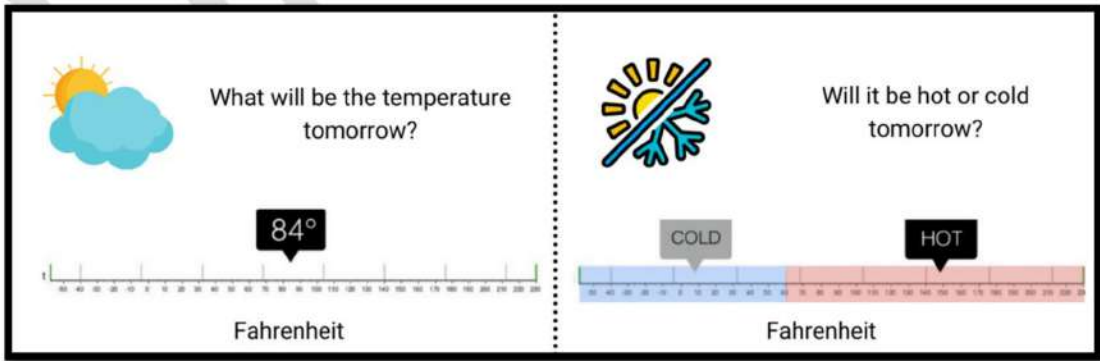
Answer question in 20 – 30 words.

Q11.	Define AI Ethics. Give Example.	2
Q12.	What is significance of "Where" in 4W Canvas?	2
Q13.	What is role of training data in AI?	2
Q14.	What must be ensured before taking down data from the Internet?	2
Q15.	What is Neural Network?	2
Q16.	What do you understand by Data Privacy?	2

Answer any 3 out of the given 5 questions (4 M x 3 = 12 M)

Answer question in 50 – 70 words

Q17.	Differentiate between the rule based and learning based AI models.	4
Q18.	Five sustainable Development Goals are mentioned below. Write one problem under each goal that you think should be addressed for achieving the goal. a. Quality Education b. Reduced Inequalities c. No Poverty d. Clean Water and Sanitation	4
Q19.	Differentiate between what is AI and what is not AI with the help of an example?	4
Q20.	Explain how AI works in the following areas (any two): a. Fraud and Risk Detection b. Airline Route Planning c. Website Recommendation	4
Q21.	 Identify the problems listed in above image can be answered through which algorithms. Explain them with an example.	4