KENDRIYA VIDYALAYA SANGATHAN, GURUGRAM REGION

FIRST PRE BOARD EXAMINATION 2025-26

CLASS:X **Max.Marks:50**

SUBJECT: ARTIFICIALINTELLIGENCE **TIME: 2 HRS.**

General Instructions:

1. Please read the instructions carefully.
2. This Question Paper consists of **21questions** in two sections: Section A & Section B.
3. Section A has Objective type questions whereas Section B contains Subjective type questions.
4. Out of the given(5+16=)21 questions, a candidate has to answer(5+10=)15 questions in the allotted(maximum) time of 2 hours.
5. All questions of a particular section must be attempted in the correct order.
6. **SECTIONA-OBJECTIVETYPEQUESTIONS(24MARKS):**
   - i. This section has 05 questions.
   - ii. Marks allotted are mentioned against each question/part.
   - iii. There is no negative marking.
   - iv. Do as per the instructions given.
7. **SECTION B- SUBJECTIVE TYPE QUESTIONS(26 MARKS):**
   - i. This section has16 questions
   - ii. A candidate has to do 10 questions.
   - iii. Do as per the instructions given.
   - iv. Marks allotted are mentioned against each question/part.

SECTION A:OBJECTIVE TYPE QUESTIONS

Q1.	**Answer any 4 out of the given 6 questions on Employability Skills(1x 4= 4marks)**	
i.	SMART methods can be used to set goals to make you successful in your career and personal life. What does "M" in SMART stands for? (a) Monthly (b) Main (c) Mine (d) Measurable	1
ii.	What is one common time management mistake? (a) Procrastination (b) Manage Distractions (c) Taking Breaks (d) Scheduling Tasks	1

iii.	Hari's customer comes to his store and starts shouting at him. He does not get angry. He listens to what his customer is saying. He is _____: (a) Trying new ideas (b)patient (c) confident (d) hardworking	1
iv.	I am the software that starts working as soon as the computer is switched on. Who am I?: (a) Web Browser (b) Operating System (c) Office Software (d) Anti-virus Software	1
v.	Which of these are effective components of a good feedback? (a) Opinion based (b) Specific (c) Direct and honest (d) Detailed and time consuming	1
vi.	According to United Nations, Which of the following is not a sustainable development goal? (a) Clean water and sanitation (b) Population (c) Gender equality (d) Reduced inequalities	1
Q2	**Answer any 5 out of the given 6 questions (1x5= 5marks)**	
i.	Google Maps, the search giant's technology, with AI-enabled mapping, scans road information and uses algorithms to determine the optimal route to take, be it on foot or in car, bike, bus or train. It also gives voice instructions about the route. Which of these AI domains are the prime factor of Google Maps services?? a) Computer Vision b) NLP c) Data d) All of these	1
ii.	Which of the following are some ethical issues around AI? a) Bias and Fairness b) Accountability c) Cyber Security and Malicious Use d) All of these	1
iii.	How you can identify the problem scoping in the project. a) Understand why the project was started b)Define the project's primary objectives c) Outline the project's work statement. d)All of the above	1
iv.	The primary purpose of data exploration in AI project cycle is a) To make data more complicated b)To simplify complex data c) To discover patterns and insights in data d)To visualize data	1

v.	Which one of the following is the second stage of AI project cycle? a) Data Exploration b) Data Acquisition c) Modeling d) Problem Scoping	1
vi.	**Assertion**: Ethics provide guidance in distinguishing right from wrong. **Reasoning**: Ethics consist of a set of values and morals that aid individuals in making moral judgments and decisions. a) Both Assertion and Reasoning are true, and Reasoning is the correct explanation of the Assertion**.** b)Assertion is true, but Reasoning is false. c) Both Assertion and Reasoning are true, but Reasoning is not the correct explanation of the Assertion. d)Assertion is false, but Reasoning is true.	1
Q.3	**Answer any 5 out of the given 6 questions (1x5= 5marks)**	
i	A machine learning algorithm that groups similar customer purchases into clusters for recommendation systems uses: a) Supervised Learning b) Unsupervised Learning c) Reinforcement Learning d) Neural Networks	1
ii.	An email spam filter that learns to identify spam emails based on labeled examples is an application of : a) Transfer Learning b) Unsupervised Learning c) Reinforcement Learning d) Supervised Learning	1
iii.	Artificial Neural Networks are inspired by the structure and function of : a) High – speed processors b) Complex mathematical models c) Quantum computers d) The human brain	1
iv.	**Assertion** : Unsupervised Learning is a type of learning without any guidance. **Reasoning**: Unsupervised learning models work on unlabeled datasets, where the data fed into the machine is random and the person training the model may not have any prior information about it. a) Both Assertion and Reasoning are true, and Reasoning is the correct explanation of the Assertion. b)Assertion is true, but Reasoning is false. c) Both Assertion and Reasoning are true, but Reasoning is not the correct explanation of the Assertion.	1

	d)Assertion is false, but Reasoning is true.	
v.	If a machine identifies similar songs based on listening habits, which model and method is being used? Identify the learning approach and Model.	1
vi.	**Assertion:** Gray scale images consist of varying shades of gray and use one byte per pixel. **Reason:** Each pixel in gray scale has three intensity values ranging from 0 to 255. a) Both Assertion and Reasoning are true, and Reasoning is the correct explanation of the Assertion. b) Both Assertion and Reasoning are true, but Reasoning is not the correct explanation of the Assertion. c) Assertion is true, but Reasoning is false. d)Assertion is false, but Reasoning is true.	1
Q.4	**Answer any 5 out of the given 6 questions (1x5= 5marks)**	
i.	Which of the following is **NOT** a performance metric for evaluating AI models? a)Accuracy b)Precision c)Recall d)Debugging	1
ii.	With respect to evaluation, for which of the following does the prediction and reality match? a) True positive and False positive b) True positive andTrue negative c) False positive and False negative d) True positive and False negative	1
iii.	A high F1 score generally suggests: a) A significant imbalance between precision and recall b) A good balance between precision and recall c) A model that only performs well on specific data points d) The need for more training data	1
iv.	Is the percentage of times the predictions out of all the observations are correct. a) Precision Rate b) Recall c) Accuracy Rate d) F1score	1
v.	A_____is a technique using a chart or table that lists the predicted values of an AI model and the actual/correct outcome values. a) Classification Metric b) Regression Metric c) Confusion Matrix d) Deep learning Metric	1

vi.	Which of the following is not a Computer Vision task? a) Object detection b) Image segmentation c) Voice modulation d) Image classification	1
Q.5	**Answer any 5 out of the given 6 questions (1x5= 5marks)**	
i.	What will be the colour in the image, if R=G=B=0?	1
ii.	Which of the following comes under NLP? a) Chat bots b) Price comprise on websites c) Facial recognition d) All of the above	1
iii.	What is the lemma of the word "Taking"? a) Tak b)Take c) Taking d)Taker	1
iv.	For the whole corpus is divided into sentences. Each sentence is taken as a different data so now the whole corpus gets reduced to sentences. a) Text Regulation b) Sentence Segmentation c) Tokenization d) Stemming	1
v.	Which of the following is the type of data used by NLP applications? a) Images b) Numerical data c) Graphical data d) Text and Speech	1
vi.	_____refers to use of linguistic analysis using AI to detect emotional and language tone in written text or speech-to text. a) Text classification b) Sentiment analysis c) Automatic text summarisation d) Chatbot	1
	<u>SECTION B SUBJECTIVE TYPE QUESTIONS</u> **Answer any 3 out of the given 5 questions in 20-30 words each (2X3=6marks)**	
Q.6	Write down the common communication barriers you may come across when you move to a new city or country.	2
Q.7	Shina always remain cool and calm while doing any activity or during exam time. There is no sign of stress on her body or mind. Name any four Stress management techniques Shina may have followed.	2
Q.8	**"*The Trojan Horse was a wooden horse said to have been used by the Greeks during the Trojan War to enter the city of Troy and win the war".*** What does Trojan horse mean in computer terminology?	2
Q.9	How has entrepreneurship contributed to society?	2
Q.1	Mention any two human activities that are responsible for environmental degradation.	2

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<tr><td>0</td><td></td><td></td></tr>
<tr><td colspan="3">Answer any 4 out of the given 6 questions in 20-30 words each (2X4=8 marks)</td></tr>
<tr><td>Q.11</td><td>An autonomous vehicle is learning to navigate through a city and receives rewards for safe driving and penalties for violations.
a) What kind of learning is being implemented?
b) How does this method help the AI system learn to perform the task better over time?</td><td>2</td></tr>
<tr><td>Q.12</td><td>What do you mean by Bioethics?</td><td>2</td></tr>
<tr><td>Q.13</td><td>What are Fundamental Principles of Ethical Frameworks?</td><td>2</td></tr>
<tr><td>Q.14</td><td>Explain the difference between gray scale and RGB images.</td><td>2</td></tr>
<tr><td>Q.15</td><td>Differentiate between a script-bot and a smart-bot.</td><td>2</td></tr>
<tr><td>Q.16</td><td>Draw the confusion matrix for the following data
• the number of true positive = 45
• the number of true negative=35
• the number of false positive = 15
• the number of false negative = 5</td><td>2</td></tr>
<tr><td colspan="3">Answer any 3 out of the given 5 questions in 25-40 words each (4x 3= 12marks)</td></tr>
<tr><td>Q.17</td><td>Explain neural networks. Describe the three layers of neural networks.</td><td>4</td></tr>
<tr><td>Q.18</td><td>Create a 4W Project Canvas for the following:

Due to increasing number of vehicles on the roads, the rates of road accidents is also increasing at alarming speed due to non-compliance of traffics rules. In order to minimize road accidents, an awareness campaign is launched time to time. Moreover, strict traffic rules are implements and strict provisions are made under law. Awareness about road safety must be taken care of in developing 4W Project Canvas.</td><td>4</td></tr>
<tr><td>Q.19</td><td>Ms. Namita is new to the field of Artificial Intelligence. She got confused among the core terms like Artificial Intelligence(AI), Machine Learning(ML) and Deep Learning(DL). Many a times, these terms are used interchangeably but are they the same? Help her in understanding these terms by drawing a well labelled diagram to depict the interconnection of these three terms.</td><td>4</td></tr>
<tr><td>Q.20</td><td>An AI model made the following sales prediction for a new tablet which they have recently launched:
<table>
<tr><td>Confusion Matrix</td><td colspan="2">Reality</td></tr>
<tr><td></td><td>Yes</td><td>No</td></tr>
</table>
</td><td>4</td></tr>
</table>

	Prediction	**Yes**	**50**	**30**
		No	**20**	**4**

(i) Identify the total number of wrong predictions made by the model.
(ii) Calculate precision, recall and F1 Score.

Q.2 1	What are the steps of Text Normalization? Explain them briefly.	4