KENDRIYA VIDYALAYA SANGATHAN TINSUKIA REGION
PRE-BOARD EXAMINATION-2025-26
CLASS-X
ARTIFICIAL INTELLIGENCE (417)

Max. Time: 2 Hours **Max. Marks: 50**

General Instructions:

1. *Please read the instructions carefully.*
2. *This Question Paper consists of **21 questions** 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. ***SECTION A - OBJECTIVE TYPE QUESTIONS (24 MARKS):***
    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 has 16 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

Q.1	Answer any 4 out of the given 6 questions on Employability Skills (1 x 4 = 4 marks)	Marks
i.	Vivek went to a supermarket for purchasing some household items and groceries for the month. The person sitting at the cash counter was very slow in dealing with the long queue of customers, which made Vivek to wait for long time for getting served. Many of the customers got irritated with the slow process, while Vivek patiently waited until his turn. Name the Self-management skill that Vivek possesses. (a) Self-confidence (b) Self-motivation (c) Self-regulation (d) Self-awareness	1
ii.	When Ravi Scored good marks in his examination, his teacher patted on his shoulder. This gesture of appreciation can be thought of as a/an _____ (a) affection (b) feedback (c) discrimination (d) distinction	1
iii.	Ritika was learning about sustainable development. A total of how many goals have been marked as SDGs by United Nations? (a) 17 (b) 16 (c) 13 (d) 14	1
iv.	The types of viruses that replicates files eating up the disk space are called _____ (a) Worms (b) Bugs (c) Amoeba (d) Trojan	1
v.	Gita started a new small-scale business in her village giving employment to some of her native villagers. The So she can be better described as a/an _____ (a) Manager (b) Entrepreneur (c) CEO (d) Investor	1

vi.	Which among the following are impacts of stress? i. loss of sleep ii. imbalance of professional and personal life iii. increased blood pressure iv. lack of efficiency in doing work (a) Only iv (b) ii,iii and iv (c) only i (d) All of the above	**1**
Q.2	**Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)**	**Marks**
i.	The weather forecasting system is an application of which AI domain? (a) NLP (b) Computer Vision (c) Data Science (d) GAI	**1**
ii.	The languages written and spoken by us are called _____ (a) Natural language (b) Native language (c) Script language (d) Local language	**1**
iii.	Virtual assistants commonly use female voices. This can be related to which concern of AI? (a) AI Ethics (b) AI creating unemployment (c) AI Bias d) Data Privacy	**1**
iv.	Deepak wanted to purchase a new camera for his digital marketing company. By the suggestion of his friend, he searches different online options for comparing the price. This is an application of which AI domain? (a) Data Science (b) Computer Vision (c) NLP (d) Neural Network	**1**
v.	**Statement 1:** In Deep Learning, the machine is trained with huge amounts of data **Statement 2:** Everything which is Machine Learning is also Deep Learning (a) Both Statement 1 & 2 are correct (b) Statement 1 is correct but statement 2 is incorrect. (c) Statement 2 is correct but statement 1 is incorrect. (d) Both the statements are incorrect.	**1**
vi.	Priya was learning Computer Vision, where she was introduced with a word for the number of pixels per unit. What is the word mentioned here?	**1**
Q.3	**Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)**	**Marks**
i.	The learning approch that works on Reward/Penalty system is _____	**1**
ii.	0 in a Grayscale image indicates: (a) White (b) black (c) Grey (d) Light White	**1**
iii.	**Statement 1**: The Stop words do not add any essence to the information which is to be transmitted through the sentence. **Statement 2:** They do not add any value to the corpus. (a) Both Statement 1 & 2 are correct (b) Statement 1 is correct but statement 2 is incorrect. (c) Statement 2 is correct but statement 1 is incorrect. (d) Both the statements are incorrect.	**1**
iv.	Niraj was learning AI Project Cycle where he finds it difficult to understand how the collected data for the AI Models is organized and structured in a stage after Data Acquisition. Here Niraj is learning about which stage of the AI Project Cycle? (a) Problem Scoping (b) Modelling (c) Data Exploration (d) Evaluation	**1**
v.	The performance of an AI model is good if the F1 Score is _____.	**1**
vi.	The cleaning up of textual data in order to reduce its complexity for better processing by machines is termed as _____ (a) Text Normalization (b) Sentence Segmentation (c) Tokenization (d) Text Summarization	**1**

Q.4	**Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)**	**Marks**
i.	AI analyzes patterns in transactional data to detect anomalies, there by prevent frauds in banking, taxation and E-commerce. This is data analysis is a the most important working principle behind_____ (a) Data Science (b) Computer Vision (c) NLP (d) Neural Networks	**1**
ii.	Which among the following is a Stop word ? (a) Arun (b) plays (c) the (d) guitar	**1**
iii.	Digital image comprises of primary colors : (a) RGB (b) Grayscale (c) CMYK (d) Black and White	**1**
iv.	For better efficiency of an AI model, Training data should be: (i) Relevant (ii) Scattered (iii) Structured (iv) Authentic (a) Both i and ii (b) Both i and iv (c) Only i (d) Only iv	**1**
v.	Manas who is a part of an AI Project makes a 4Ws canvas to identify the key elements related to the problem. Here Manas and his team is working on which stage oof AI Project Cycle? (a) Problem Scoping (b) Data Acquisition (c) Data Exploration (d)Modelling	**1**
vi.	After Lemmatization, the word "finalized" will be: (a) final (b) finally (c) finali (d) finalize	**1**
Q.5	**Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)**	**Marks**
i.	The correct formula for Precision is: (a) TN/(TP+TN) (b) TP/(TP+FN) (c) TN/(TF+FN) (d) TP/(TP+FP)	**1**
ii.	Hiranmayi was reading a book on NLP, where she came across the word which is used for the whole textual data from all the documents together. What is that word she might have read about? (a) Stop Word (b) Rare Word (c) Corpus (d) Bag of Words	**1**
iii.	_____ majorly work around analyzing the data. It incorporates techniques and theories drawn from Mathematics, Statistics, Computer Science and Information Science. (a) Neural Networks (b) AI Modelling (c) Data Science (d) Deep Learning	**1**
iv.	_____ is a mapping between Prediction and Reality (a) Precision (b) Confusion Matrix (c) F1 Score (d) Accuracy	**1**
v.	An AI model which is supposed to predict the occurrence of a virus falsely predicts when the virus actually exists. What is this condition called? (a) False Positive (b) True Positive (c) False Negative (d) True Negative	**1**
vi.	When the model's performance matches well with the true function and the model has optimum accuracy, it is called _____ (a) Perfect fit (b) Over fit (c) Under fit (d) Zero fit	**1**

SECTION B: SUBJECTIVE TYPE QUESTIONS

Answer any 3 out of the given 5 questions on Employability Skills (2 x 3 = 6 marks)
Answer each question in 20 – 30 words.

Q.6	Explain any two Barriers that affects communication.	**2**
Q.7	Gunjan is doing a project for her company, which is to be submitted within a short period of time. She was sleepless for days working on it which made her week and ill. From these what may be the possible condition do you think that Gunjan is undergoing?	**2**
Q.8	What is meant by a computer virus? Give an example for virus.	**2**
Q.9	Write any two roles of entrepreneurs towards the benefit of our society.	**2**
Q.10	Write any two good practices that can be adopted in daily life to conserve energy.	**2**

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

Q.11	Discuss any two ethical concerns of AI.	**2**
Q.12	What is meant by Rule based Approach? What is its disadvantage?	**2**
Q.13	Explain the role of AI in medical imaging.	**2**
Q.14	Explain how Data Science is applied in weather forecasting system.	**2**
Q.15	Manish is doing an NLP program. For that he is preparing a table to understand the Stemming process. Help him to complete the table by suggesting appropriate affixes and stem of the words mentioned below: Word / Affixes / Stem Cries / / Playing / /	**2**
Q.16	Explain why the evaluation of an AI model is important?	**2**

Answer any 3 out of the given 5 questions in 50– 80 words each (4 x 3 = 12 marks)

Q.17	With a well labelled diagram, explain the relationships between Artificial Intelligence, Machine Learning and Deep Learning.	**4**
Q.18	Kiran was learning AI Project Cycle where she finds it difficult to differentiate between Data Acquisition and Data Exploration. Help her understand the difference between the two.	**4**
Q.19	Observe the two documents given below and prepare document vector for text normalization on the segmented sentences. Document 1: Manu likes to play football. Document2: Manu attend online tuition regularly.	**4**
Q.20	Briefly explain Neural Network.	**4**
Q.21	An AI model made the following predictions about the launch of a new product to the market. CONFUSION MATRIX / REALITY: YES / REALITY: NO PREDICTION: YES / 50 / 40 PREDICTION: NO / 12 / 10 i) Identify the total number of correct predictions made by the model. ii) Calculate precision, recall and F1 Score.	**4**

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