

कक्षा दसवीं प्री-बोर्ड परीक्षा 2025-26

Pre Board Examination 2025-26 for Class X

SUBJECT : ARTIFICIAL INTELLIGENCE (417)

MARKS : 50

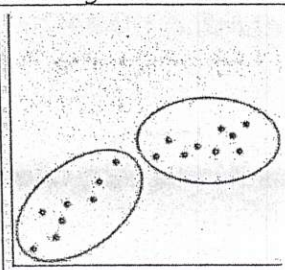
TIME : 2Hours

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 contains 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	
Q1	Answer any 4 out of the given 6 questions on Employability Skills(1x4=4marks)
i	Elements of a communication cycle include: (a) Sender (b) Receiver (c) Channel (d) All of the above
ii	The receiver's acknowledgment and response to a message is called: (a) Feedback (b) Input (c) Feed (d) Information
iii	Which of the following is a method of communication? (a) Face to Face (b) Email (c) Notices/Posters (d) All of the above
iv	Two friends discussing homework is an example of: (a) Interpersonal Communication (b) Written Communication (c) Small Group Communication (d) Public Communication
v	Ananya writing an email to her boss requesting leave is an example of: (a) Public Communication (b) Small Group Communication (c) Written Communication (d) Interpersonal Communication
vi	Social media chats, reports, and SMS are examples of: (a) Public Communication (b) Small Group Communication (c) Written Communication (d) Interpersonal Communication
Q2	Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)

i	With respect to the type of data fed into the AI model, AI model can be broadly classified into _____ domains.
ii	Assertion (A) : When a machine is able to mimic human traits, it is said to be artificially intelligent. Reason (R) : A fully automatic washing machine is artificially intelligent. (a) Both (A) and (R) are correct and (R) is the correct explanation of (A). (b) Both (A) and (R) are correct and (R) is not the correct explanation of (A). (c) (A) is correct but (R) is not correct. (d) (A) is not correct but (R) is correct.
iii	Platforms such as Spotify, Facebook, Instagram, Amazon, Netflix etc. shows recommendation on the basis of what you like. Which is the technology behind this? (a) Human Intelligence (b) Platform Intelligence (c) Artificial Intelligence (d) Application Intelligence
iv	What does the term "image processing" refer to in Computer Vision ? (a) Editing videos (b) Extracting meaningful information from images (c) Playing audio files (d) Compiling codes
v	State True or False: In natural language, it is important to understand that a word can have multiple meanings and the meanings fit into the statement according to the context of it. *
vi	_____ is an integral part of the model development process that helps to find the best model that represents our data and how well the chosen model will work in the future.
Q3	Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)
i	Name any two methods of collecting data.
ii	What is the role of modelling in an NLP based AI model? a) Modelling in NLP helps in processing of AI model b) Modelling is required to make an AI model c) In NLP, modelling requires data pre-processing only after which the data is fed to the machine. d) Modelling is used in simplification of data acquisition
iii	Expand CBT _____ a) Computer Behaved Training b) Cognitive Behavioural Therapy c) Consolidated Batch of trainers d) Combined Basic Training
iv	What will be the outcome, if the Prediction is "Yes" and it matches with the Reality? What will be the outcome, if the Prediction is "Yes" and it does not match the Reality? a) True Positive, True Negative b) True Negative, False Negative c) True Negative, False Positive d) True Positive, False Positive
v	Give 2 examples of Supervised Learning models
vi	A self-driving car fails to detect pedestrians crossing at night, resulting in a near accident. Which domain of AI technology should be enhanced to improve safety? a) Natural Language Processing b) Statistical Data

	c) Recommendation Systems	d) Computer Vision
Q4	Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)	
i	Which form of unsupervised learning does the following diagram indicate?	
		
	a) Clustering	b) Regression
	c) Reinforcement learning	d) Classification
ii	Regression is one of the type of supervised learning model, where data is classified according to labels and data need not to be continuous. (True / False)	
iii	In this learning model, the data set which is fed to the machine is labelled. Name the model.	
iv	Which of the following is the correct feature of Neural network? (a) It can improve the efficiency of two models. (b) It is useful with small dataset. (c) They are modelled on human brains and nervous system. (d) They need human intervention.	
v	It refers to the unsupervised learning algorithm which can cluster the unknown data according to the patterns or trends identified out of it. (a) Regression (b) Classification (c) Clustering (d) Dimensionality reduction	
vi	Convolutional Neural Networks are used to classify textual data (True / False)	
Q5	Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)	
i	The output given by the AI machine is known as _____ (Prediction/ Reality)	
ii	Confusion Matrix	
iii	a) Overfitting	
iv	(d) F1 Score	
v	_____ is defined as the percentage of correct predictions out of all the observations. (a) Overfitting (b) Accuracy (c) Confusion Matrix (d) Data acquisition	
vi	Two conditions when prediction matches with the reality are true positive and _____.	

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.

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|----|---|
| Q6 | Write few tips to protect your data from online theft and viruses. |
| Q7 | How does entrepreneurs and entrepreneurship contributes to society? |
| Q8 | Ravi is using SMART method to set goals. What is SMART stands for? |

Q9	Write the qualities of Self-Management person.																												
Q10	Write and explain any two SDGs.																												
Answer any 4 out of the given 6 questions in 20 – 30 words each (2 x 4 = 8 marks)																													
Q11	Identify the type of deep learning model. This deep learning model processes input images by learning to assign importance (weights and biases) to various features in the image, allowing it to distinguish one object from another. This deep learning model is inspired by the structure of the human brain. It can automatically extract features from large datasets without explicit programming. Each node in the network acts like a small machine learning algorithm.																												
Q12	Explain how AI works in the following areas: a. Google Search Engine b. Voice Assistants																												
Q13	Give any two key impacts of Computer Vision.																												
Q14	What is Accuracy?																												
Q15	Differentiate between rule based and learning based modelling approach.																												
Q16	Draw the graphical representation of Clustering AI model. Explain in brief.																												
Answer any 3 out of the given 5 questions in 50– 80 words each (4 x 3 = 12 marks)																													
Q17	Draw the 4Ws problem Canvas and explain each one of them briefly.																												
Q18	Explain AI project cycle with each stage.																												
Q19	What is Intelligence? Explain in brief any three types of intelligence that are mainly perceived by human beings?																												
Q20	Categorize the following under Data Sciences, Machine Learning, Computer Vision and NLP. The latest technological advancements have made our lives convenient. Google Home, Alexa and Siri have been a huge help to non-tech savvy people. Features like Facial recognition and Facelock have added additional security to our gadgets. These advancements have also contributed in making our needs more approachable and convenient. Now you can even check the prices with Price comparison websites and order groceries online with chatbots. Did you know that you can even find how you are going to look when you grow old? Faceapps and Snapchat filters have made this possible!																												
Q21	Calculate Accuracy, Precision, Recall and F1 Score for the following Confusion Matrix on Water Shortage in Schools: Also suggest which metric would not be a good evaluation parameter here and why? <table border="1"><tr><th colspan="2">The Confusion Matrix (Water Shortage in School)</th><th>Reality: 1</th><th>Reality: 0</th></tr><tr><td>Prediction: 1</td><td></td><td>75</td><td>5</td></tr><tr><td>Prediction: 0</td><td></td><td>5</td><td>15</td></tr></table> <table border="1"><tr><th></th><th>Reality: 1</th><th>Reality: 0</th><th></th></tr><tr><td>Prediction: 1</td><td>75</td><td>5</td><td>80</td></tr><tr><td>Prediction: 0</td><td>5</td><td>15</td><td>20</td></tr><tr><td></td><td>80</td><td>20</td><td>100</td></tr></table>	The Confusion Matrix (Water Shortage in School)		Reality: 1	Reality: 0	Prediction: 1		75	5	Prediction: 0		5	15		Reality: 1	Reality: 0		Prediction: 1	75	5	80	Prediction: 0	5	15	20		80	20	100
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