

**KENDRIYA VIDYALAYA SANGATHAN
RANCHI REGION
Pre-Board Examination (Session 2024-2025)**

**Subject:- A.I. (417)
Max. Time: 2 Hours**

SET-1

**Class- X
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

SECTION A: OBJECTIVE TYPE QUESTIONS						
Q.1	Answer any 4 out of the given 6 questions on Employability Skills (1 x 4 = 4 marks)					
i.	Mr, Mohan wants to convey a message to his colleagues. But his tone of voice and language is different, as his colleagues are from North India and He is from South India. This type of barrier is known as	1				
	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">a) Physical</td> <td style="width: 50%;">b) Interpersonal</td> </tr> <tr> <td>c) Cultural</td> <td>d) Organizational</td> </tr> </table>	a) Physical	b) Interpersonal	c) Cultural	d) Organizational	
a) Physical	b) Interpersonal					
c) Cultural	d) Organizational					
ii.	Shiv has selected a folder in D: drive. He clicked on the folder and hold mouse button down then moved it to new location then he released the mouse button. Here Shiv has performed which of the following mouse action?	1				
	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">a) Hover</td> <td style="width: 50%;">b) Double click</td> </tr> <tr> <td>c) Drag and Drop</td> <td>d) Selection</td> </tr> </table>	a) Hover	b) Double click	c) Drag and Drop	d) Selection	
a) Hover	b) Double click					
c) Drag and Drop	d) Selection					
iii.	Assertion(A): Prajakta has her own beauty saloon in her local areas. She hired two women in her saloon. Reason(R): She is helping society to grow.	1				
	(a) Both A and R are correct and R is the correct explanation of A (b) Both A and R are correct but 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					
iv.	Dhruvin is preparing for exam. He avoids time wasters like chatting on phone, surfing gossip sites etc. and focus on more important things. This is one of the steps of effective time management, identify the same:	1				
	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">a) Organizing</td> <td style="width: 50%;">b) Prioritising</td> </tr> <tr> <td>c) Controlling</td> <td>d) Tracking</td> </tr> </table>	a) Organizing	b) Prioritising	c) Controlling	d) Tracking	
a) Organizing	b) Prioritising					
c) Controlling	d) Tracking					
v.	Ravi works hard to get the best student award at the end of the year, What type of motivation is this	1				
	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">a) Internal</td> <td style="width: 50%;">b) External</td> </tr> <tr> <td>c) both (a) and (b)</td> <td>d) None of these</td> </tr> </table>	a) Internal	b) External	c) both (a) and (b)	d) None of these	
a) Internal	b) External					
c) both (a) and (b)	d) None of these					

vi.	_____ is the development that satisfies the needs of the present without compromising the capacity of future generations, guaranteeing the balance between economic growth, care for the environment and social well-being. a) Social Development c) Financial Development	b) Sustainable Development d) Cultural Development	1
Q.2 Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)			
i.	Assertion (A): Life without machine is unimaginable today. Reason(R): Machines are made with an intent of irritating humans. (a) Both A and R are correct and R is the correct explanation of A (b) Both A and R are correct but 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		1
ii.	Kriza is planning for a trip in Kerala in winter break. She searched hotels for the same. After that she is getting notification about the same and advertisements in websites, apps and many more. Which of the following term is perfectly matched with this example? a) AI Access c) AI Ethics	b) Data Privacy d) AI Manners	1
iii.	A _____ is essentially a system of organizing machine learning algorithms to perform certain tasks. a) Natural Networks c) Neural Networks	b) Neutral Networks d) Neuron Networks	1
iv.	In neural network _____ layers, the processing occurs. a) Input c) Output	b) Hidden d) Top	1
v.	Which programming language is commonly used for implementing AI algorithms and model a) CSV c) Spreadsheet	b) Python d) SQL	1
vi.	Which of the following text normalization step considers every word, number or special character separately? a) Sentence Segmentation c) Stemming	b) Tokenization d) Lemmatization	1
Q.3 Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)			
i.	Statement A - In today's time, every technology around us is AI. Statement B - An AI machine too gets trained first on the training data and then optimises itself according to its own experiences. a) A is correct c) Both are correct	b) B is correct d) Both are incorrect	1
ii.	Mukesh wants to use AI to make hiring decisions. Which ethical consideration should he be most concerned about? a) Data privacy c) Energy efficiency	b) Algorithm fairness and bias d) Hardware compatibility	1
iii.	Which of the following domain of AI is working around alphanumeric information, numbers and statistics? a) Data Science c) CV	b) NLP d) Neural Network	1
iv.	As humans have eyes, so they can see anything and analyse it. Select an appropriate option which adds functionality like that in machines? a) Natural Language Processing c) Data Science	b) Computer Vision d) Evaluation	1
v.	All the virtual assistants like Alexa, Google Assistants, Siri etc. can taken as _____ a) Smart Bot c) Robot	b) Script Bot d) Programming Bot	1

vi.	The recorded result of comparison between prediction and reality is known as _____ a) Precision b) F1 Score c) Confusion Matrix d) Accuracy	1
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4.	Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)	
i.	Which of the following states intention of machine learning? a) Ability to machine to recognize human's face, move objects and understand, command given by humans then perform the tasks b) Enable machines to learn by themselves using the data provided and make accurate predictions/Decisions c) Machine is trained with huge amounts of data which helps to train data d) Enable machines to write algorithm	1
ii.	Which of the following is the second stage of AI Project cycle? a) Problem Scoping b) Data Acquisition c) Evaluation d) Data Exploration	1
iii.	Extracting data can be offense. a) Yes b) No c) May be d) None	1
iv.	Every photograph is in digital form is made up of _____ a) Lines b) Dots c) Pixels d) Graphs	1
v.	Spam filtering is an example of a) Text Classification b) Automatic Summarization c) Sentiment Analysis d) Bag of words	1
vi.	How is the word "changing" lematized? a) change b) changin c) chan d) changing	1

5	Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)	
i.	i. In Computer vision, input to machine can be a) Numeric & Alphanumeric b) Photographs, Videos c) Spoken words only d) Text	1
ii.	The condition which predicts all predictions as No and reality is also No. this condition in known as _____ a) True Negative b) False Negative c) Negative True d) All Negative	1
iii.	Which of the following domain of AI is used by the airlines companies for strategic areas of improvements: a) Data Science b) Computer Vision c) Natural Language Processing d) Neural Network	1
iv.	Which of the following is the first step of bag of words algorithm? a) Create Dictionary b) Text Normalization c) Create Document vectors d) Stemming	1
v.	The number of negative examples that model correctly classifies as negative. Which case is this in Error matrix? (a) TP (b) TN (c) FP (d) FN	1
vi.	Which one of the following scenario results in a high false negative cost? (a) Viral Outbreak (b) Spam Filter (c) flood(d) Mining	1

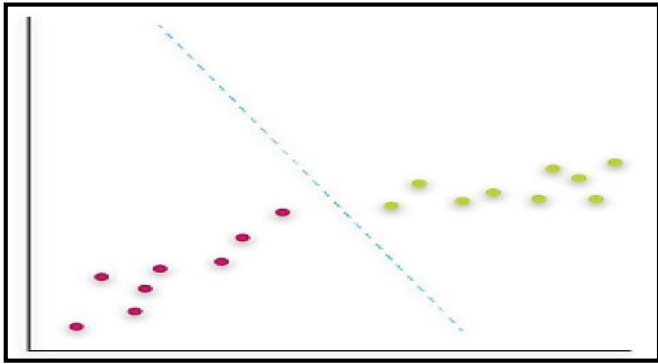
SECTION B: SUBJECTIVE TYPE QUESTIONS

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

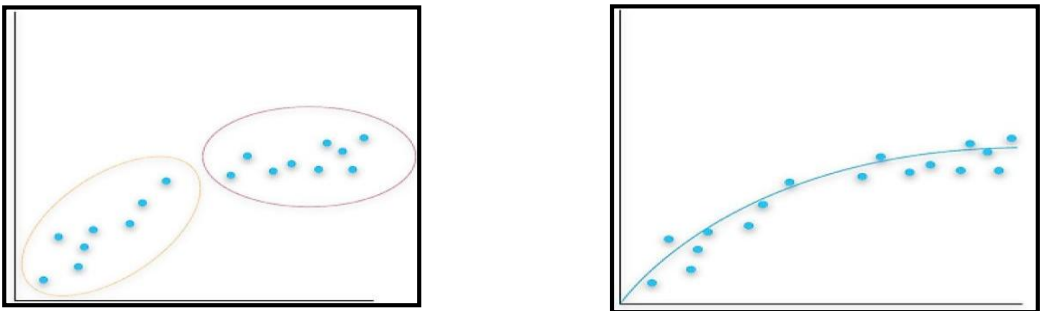
Answer each question in 20 – 30 words.

Q.6	What are the various elements of communication cycle?	2
Q.7	Mr E Shreedharan, Former Managing Director, Delhi Metro Rail corporation Ltd, was a self-motivated and energetic person. What are the steps for building self-motivation?	2
Q.8	How can you increase the performance of a computer?	2
Q.9	How entrepreneur helps society? What they do when they run business?	2
Q.10	What are the 5 P's of sustainable development?	2

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

Q.11	Identify the intelligence demonstrating by the people: a) Amita is very good dancer. She is using her body for perfect moves b) Amit is writing poems. He is able to find the meaning words, the orders of words, inflection and meter of words c) Karan is an accountant in a multinational company. He is very talented in the field of accounts and managing the company's finance effectively d) Mr. Shivanand is a politician. He has good ability to interact to others.	2
Q.12	Observe the below given graph and explain the model in short.	2
		
Q.13	How data science is useful in genetics and genomics?	2
Q.14	Explain use of computer vision in car parking?	2
Q.15	Explain text classification with example.	2
Q.16	What is Confusion Matrix? How it is useful in evaluation?	2

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

Q.17	Explain any 4 applications of Artificial Intelligence around us.	4													
Q.18	Rahul and his team have to develop an AI project. The guide of Rahul's team told to get best response and add more features to your model you have to first understand about AI Domains. Explain all the AI domains and field of its implementation.	4													
Q.19	Observe the following images and explain the related models:	4													
															
Q.20	Normalize the following text – “Everyone has friends in which some are childhood friends and some are school friends ”	4													
Q.21	A mobile shopkeeper maintained two record, one for his prediction on customer that he/she will buy mobile on not and another for actually that customer bought mobile or not.														
<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2" rowspan="2">Confusion Matrix</th> <th colspan="2">Prediction</th> </tr> <tr> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <th rowspan="2">Actual</th> <th>Yes</th> <td>45</td> <td>55</td> </tr> <tr> <th>No</th> <td>55</td> <td>395</td> </tr> </tbody> </table>		Confusion Matrix		Prediction		Yes	No	Actual	Yes	45	55	No	55	395	
Confusion Matrix				Prediction											
		Yes	No												
Actual	Yes	45	55												
	No	55	395												
<p>(a) Find the accuracy of the shopkeeper. (b) What is its precision? (c) Calculate sensitivity. (d) Calculate F1 Score</p>															