

KENDRIYA VIDYALAYA SANGATHAN, LUCKNOW REGION
FIRST PRE-BOARD EXAMINATION (2023-24)
CLASS – X
SUBJECT – ARTIFICIAL INTELLIGENCE (417)
QUESTION PAPER

TIME: 02 HOURS

M.M: 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.

SECTION A

Q. 1 Answer any 4 out of the given 6 questions on Employability Skills (1 x 4 = 4 marks)

I.	Sara could not prepare for her exams for many reasons such as first her grandfather passed away and then she met with an accident. Now exams are very near and she is having the symptoms like aches, shallow breathing, cold hands and feet. All these symptoms are because of _____ (a) Bad stress (b) Good stress (c) Ailment (d) All of these	1
II.	Which one of the following is an example of Operating System? (a) Microsoft Word (b) Microsoft Windows (c) Microsoft Excel (d) Microsoft Access	1
III.	Statement 1: Self-motivation teaches us self-discipline and hard work to achieve our goals. Statement 2: Individuals experience increased anxiety and boredom when they motivate themselves. (a) Both Statement 1 and Statement 2 are correct. (b) Both Statement 1 and Statement 2 are incorrect. (c) Statement 1 is correct but Statement 2 is incorrect. (d) Statement 1 is incorrect but Statement 2 is correct	1
IV	An _____ is a person who is self – employed, is willing to take a calculated risk, and brings in a new idea to start a business. (a) Software Engineer (b) Entrepreneur (c) Civil Engineer (d) Mechanical Engineer	1
V	Which of these are examples of negative feedback? (a) I hate to tell you this but your drawing skill is poor. (b) You can surely improve your drawing (c) These are good drawings but you can do better. (d) None of the above	1
VI	_____ is the term to denote proper management of the natural resource to prevent its exploitation, destruction or degradation. (a) Conservation (b) Reduction (c) Reforestation (d) Green Economy	1

Q2 Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)

I.	In _____ input to machines can be images, videos or pictures from thermal or infrared sensors, indicators and different resources. (a) Data Science (b) Computer Vision (c) NLP (d) Algorithm	1
II.	Which of this is not a type of intelligence for humans? (a) Linguistic Intelligence (b) Spatial Visual Intelligence (c) Machine Intelligence (d) Kinaesthetic Intelligence	1

III	A well-known news channel broadcasts information on a wide range of topics, including politics, government, foreign affairs, sports and the latest movie and television news. Reporters are in charge of gathering, evaluating and transmitting information about current events. Furthermore, the news channel permits people to submit breaking news, which is subject to verification by the channel's reporters. However, it may be difficult to distinguish between real news and fake news, which can lead to confusion among readers and threaten a news organization's reputation. Which of the following domains is used to detect fake news so that the audience has a high level of trust in the news channel? (i) Computer Vision (ii) Matrices (iii) Natural Language Processing (iv) Data Science	1
IV.	Where does the processing in an ANN occur? (a)Output Layer (b) Hidden Layer (c) Input Layer (d) Data Layer	1
V	_____ helps to summarise all the key points into one single outline so that in future, whenever there is need to look back at the basis of the problem we can take a look at it and understand the key elements of it. (a)4W Problem canvas (b) Problem Statement Template (c) Data Acquisition (d)Algorithm	1
VI	From where does the basic structure of a decision tree start? (a) Root (b) Branch (c) Leaves (d) Stem	1
Q3.	Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)	
I	_____ data is difficult to process for AI applications.	1
II	Precision means when the model predict yes. (True/False)	1
III	_____ is defined as the percentage of correct predictions out of all the observations.	1
IV	_____ is the process of dividing a block of sentence into individual sentences	1
V	The resolution of most images we use is measured in (a)RGB (b) Pixels (c) Grayscale (d) HSV	1
VI	Which of these is not an application of computer vision (a)Face unlock of users (b) Text Chatbot (c) Self-driving Cars (d) Google Lens	1
Q4.	Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)	
I	Automatic categorization of news into different categories is an example of text classification(True/False)	1
II	What metric calculated as $TP/(TP+FP)$? (a)Accuracy (b) Precision (c) Recall (d) F-score	1
III	What do we call the process of dividing a string into component words? (a)Regression (b) Word Tokenization (c) classification (d) Clustering	1
IV	Through which of the following does machine learning understand data? (a)Developer (b) Set of Codes (c) Ethics (d) Pattern	1
V	If there are 10 correct predictions in a data set of 50 what is the accuracy? (a)50% (b) 10% (c) 20% (d) 25%	1
VI	Earlier, use of unstructured data required heavy computational power (True/False).	1
Q5.	Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)	
I	What is the science of collecting data, analyzing it and interpreting it using data visualization techniques? (a) Qualitative analysis (b) Quantitative analysis (c) Descriptive analysis (d) Inference analysis	1
II	Which python packages are not used to for data science. (a)Numpy (b) NTLK (3) Pandas (d) Matplotlib	1
III	When for an AI Model ,Predicted and Actual Values are negative, it is known as a) TN b) FP c) FN d) TP	1
IV	The higher the value, the more important the word in the document –this is true of which model? (a)Bag of Words (b) TF-IDF (c) YOLO (d) SSD	1
V	Which library is used for extracting features from images? (a) CV NET (b) OpenCV (c) New CV (d) Fresh CV	1
VI	_____ refers to a system that is capable of predicting the future preference of a set of items for a user, and recommending the top items. (a)Targeted Advertising (b) Recommender System (c) Route Planner (d) Digital Advertising	1

SECTION B: SUBJECTIVE TYPE QUESTION

**Answer any 3 out of the given 5 questions on Employability Skills
(2X3=6 marks)**

Answer each question 20-30 words.

Q.6	Write the 7'C Effective Communication.	2
Q.7	What is stress? Why stress management is important?	2
Q.8	Write about the function of Operating System.	2
Q.9	State any two benefits of Entrepreneurship to society?	2
Q.10	Write about any two SDG goals.	2

Answer any 4 out of the given 6 questions in 20-30 words each (2X4=8 marks)

Q11	What are the different Applications of Artificial Intelligence?	2
Q12	What is the difference between Training Data & Testing Data?	2
Q13	What is Recall in AI? Write its Formula.	2
Q14	What is Sentence Segmentation in AI?	2
Q15	What is Computer Vision?	2
Q16	What is the purpose of Data Science in AI?	2

Answer any 3 out of the given 5 questions in 50-80 words each (4x3=12 marks)

Q17	Automated trade industry has developed an AI model which predicts the selling and purchasing of automobiles. During testing, the AI model came up with the following predictions.			4	
	Confusion Matrix		Reality yes		Reality No
	Predicted yes		60		25
	Predicted No		5		10
	(1) How many total tests have been performed in the above scenario? (2) Calculate precision, recall and F1 Score.				
Q18	Write the steps of Text normalisation? Explain.			4	
Q19	What is 4Ws Problem Canvas?			4	
Q20	Define the following terms (a) Data Exploration (b) Data Acquisition (c) Supervised Learning (d) Unsupervised learning			4	
Q21	Aman is amazed to learn about his sister Rani who is multi-talented and has excelled in academics, music, dancing and painting. He was quite curious when Rani told him that he too possessed all these intelligences like every human being does, but only at different levels. He wondered which intelligence she was talking about. Can you help Aman in learning about different types of intelligences by naming and explaining any four types of intelligences?			4	
