

APEEJAY SCHOOL PANCHSHEEL PARK  
COMMON PREBOARD EXAMINATION ( 2022 - 2023 )

Class : X  
Time : 2 Hr.

Subject : ARTIFICIAL INTELLIGENCE

Max. Marks 50

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**General Instructions:**

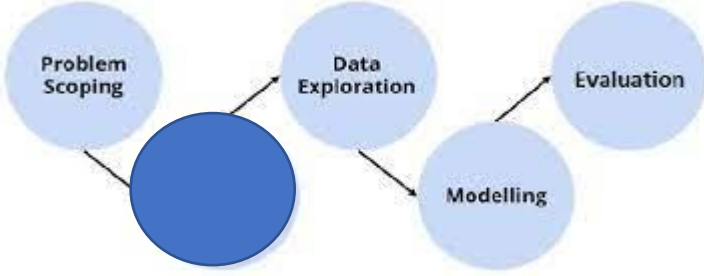
1. Please read the instructions carefully.
2. This Question Paper consists of **21 questions** in two sections: Section A & Section B.
3. Section A has Objective type questions whereas Section B contains Subjective type questions.
4. **Out of the given (5 + 16 =) 21 questions, a candidate has to answer (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**

Q1	Answer any 4 out of the given 6 questions on Employability Skills (1 x 4 = 4 marks)	
i)	SDG4 : _____ a) No Poverty c) Quality Education	b) Zero hunger d) Gender Equality
ii)	High expectations from self can leave one with chronic anxiety and stress, thus leading to _____ stress a) Physical c) Mental	b) Emotional d) Financial

iii)	BIOS stands for _____ a) Basic Input / Operation System c) Basic Ignition/Operation System	b) Basic Internet/Operation System d) Basic Input/Output System	
iv)	Shortcut Key for Undo a) CTRL + U c) CTRL + Z	b) CTRL + V d) CTRL + O	
v)	People who work for someone else are called a) Employers c) Entrepreneurs	b) Employees d) Entrepreneurship	
vi)	Stress management is vital because it leads to following benefits: a) Improves mood c) Promotes longevity	b) Boosts immune system d) All of these	

<b>Q2</b>	<b>Answer any 5 out of the given 6 questions</b>		<b>(1 x 5 = 5 marks)</b>
i)	Internet search uses this domain of AI a) Data Science c) NLP	b) Computer Vision d) All of these	
ii)	Mr. Dinesh Patel, a Computer Science teacher at Kendriya Vidyalaya, has developed an educational humanoid named “Shalu”, which can converse in 47 languages. Which AI Technology helps “Shalu” the robot to converse with humans a) NLP c) ML	b) Computer Vision d) Data Science	
iii)	Which of the following is the most advanced form of AI a) Deep Learning c) Artificial Intelligence	b) Machine Learning d) None of these	
iv)	GPS Stands for _____ a) Geographical Positioning System c) Global Positioning System	b) Google Positioning System d) Geographical Position System	
v)	A Smart TV is an example of AI Device ( True/False)		
vi)	Khushi spends all her after-school hours to practice more and more sample question papers. She wants to score full marks in her exams. This is an example of _____ a) Self-Discipline c) Self-Regulation	b) Self-Motivation d) Self-Awareness	

<b>Q3</b>	<b>Answer any 5 out of the given 6 questions</b>	<b>(1 x 5 = 5 marks)</b>
i)	<p>Assertion(A) : Neural networks are the backbone of deep learning algorithms  Reason(R): Neural networks use vast amounts of data</p> <p>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.</p>	
ii)	<p>Global Warming has become a major issue of concern and governments of all countries are seriously working towards it. You are required to present data of globsl surface temperatures in the form of a chart. Which chart will you use ?</p> <p>a) Line Chart  b) Histogram  c) Bar Chart  d) Pie Chart</p>	
iii)	<p>API is used for _____</p> <p>a) Better analysis  b) Data Gathering  c) Identifying pattens  d) All of these</p>	
iv)	<p>_____ is one type of Supervised Learning Model, where data is classified according to labels and data need not be continuous</p> <p>a) Regression  b) Classification  c) Clustering  d) Dimensionality Reduction</p>	
v)	<p>Steps of AI Project Cycle are ( What is missing step ) :</p>  <pre> graph TD     A((Problem Scoping)) --- B((Data Exploration))     A --- C((Modelling))     B --- D((Evaluation))     C --- D     E(( )) --- A     E --- B     E --- C     E --- D   </pre> <p>a) Data Visualization  b) Dataset  c) Data Acquisition  d) Data Map</p>	
vi)	<p>Drawback/s of Rule-based approach are:</p> <p>i. The learning is static  ii. Any changes made to the original data will be considered  iii. Once trained, the model cannot improvise on the basis of feedback</p> <p>a) Statements (i) and (iii) are correct  b) Statements (ii) and (iii) are correct  c) All the statements are correct  d) Statements (i) and (ii) are correct</p>	

<b>Q4</b>	<b>Answer any 5 out of the given 6 questions</b>	<b>(1 x 5 = 5 marks)</b>
i)	What is Stemming?	
ii)	It is a collection of text and speech data that can be used to train AI and machine learning systems a) Dataset b) Corpus c) Collection d) All of these	
iii)	He visited Goa. Normalize above text	
iv)	These are Rule based bots a) Rule bots b) Smart bot c) Script bot d) Voice bots	
v)	Identify any two stopwords in the given sentence:  Pollution is the introduction of contaminants into natural environment. Three types of pollution are air pollution, water pollution and noise pollution  a) pollution , natural b) is, are c) of , pollution d) environment, pollution	
vi)	Rock, Paper and Scissor game is based on a) NLP b) CV c) Data Science d) AI	

<b>Q5</b>	<b>Answer any 5 out of the given 6 questions</b>	<b>(1 x 5 = 5 marks)</b>
i)	When for an AI Model, the predicted value is negative and actual value is negative, it is known as _____ a) True Positive b) False Positive c) False Negative d) True Negative	
ii)	An AI Model has been developed to detect credit card fraud detections. The aim is not to miss any fraud transactions. Therefore we want False Negative to be as low as possible. In these situations, we can compromise with the low precision but _____ should be high a) F1 Score b) Recall c) Precision d) Accuracy	
iii)	What should be the value of F1 score if the model needs to have 100% accuracy? a) 1 b) 0.5 c) 0 d) None of these	



Q14	State the use of bag of words algorithm.	2
Q15	Which metric is important in following scenario? a) In case of a model that predicts that a mail is spam or not? b) Model predicting a Viral Outbreak	2
Q16	Differentiate between Supervised Learning and Unsupervised Learning	2

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

Q17	Explain any four types of intelligence possessed by human beings	4
Q18	Create Document Vector Table for following : <i>Document 1: Orange is an Orange</i> <i>Document 2: Orange is a carrot</i> <i>Document 3: Orange is the colour</i> <i>Document 4: Of the peak of a carrot</i>	4
Q19	Compare and Contrast Rule Based Approach and Learning Based Approach	4
Q20	<i>The world is competitive nowadays. People face competition in even the tiniest tasks and are expected to give their best at every point in time. When people are unable to meet these expectations, they get stressed and could even go into depression. We get to hear a lot of cases where people are depressed due to reasons like peer pressure, studies, family issues, relationships, etc. and they eventually get into something that is bad for them as well as for others. So, to overcome this, Cognitive Behavioural Therapy (CBT) is considered to be one of the best methods to address stress as it is easy to implement on people and also gives good results. This therapy includes understanding the behaviour and mindset of a person in their normal life. With the help of CBT, therapists help people overcome their stress and live a happy life.</i>  For the situation given above,  1. Write the problem statement template 2. List any two sources from which data can be collected. 3. How do we explore the data?	4
Q21	Explain the following terms. Also write the formula a) Recall b) F1 Score c) Precision d) Accuracy	4