

KENDRIYA VIDYALAYA SANGATHAN HYDERABAD REGION
PREBOARD EXAMINATION-1
SESSION 2024-2025

CLASS:X

SET 1

TIME:02 HOURS

SUBJECT : ARTIFICIAL INTELLEGEENCE(417)

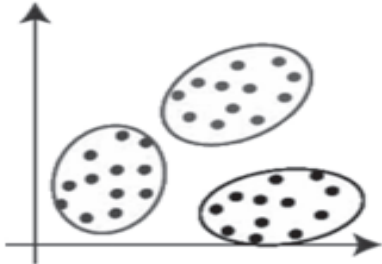
MAX.MARKS:50

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 where as 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(4 x1=4 marks)	
i.	Arnika is a very hard-working person. She always stays motivated to complete the task at hand. She has the ability to solve problems and align tasks with goals. What qualities of Arnika are depicted here? (a) Forgetfulness (b) Impatience (c) Self-management (d) Self-governance	1
ii.	An operating system is a software that serves as an interface between: (a) User and computer (b) Server and computer (c) Computer and network (d) Computer without CPU	1
iii.	Assertion (A): A doctor works for a renowned hospital. Reason(R): The statement given above is an example of wage employment. (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

iv.	<p>A student named Prachi is a district-level gymnast and devotes 4-5 hours in practicing. Since her final examinations are going to start soon, she has started feeling distressed. What would be the most suitable method of managing stress for Prachi?</p> <p>(a)Engaging with leisure activities (b)Relaxing and taking 10-12hours of sleep (c)Organizing, prioritizing and managing tasks (d)Keep on practicing gymnastics</p>	1
v.	<p>Remya traveled to Sweden from India to pursue her higher education. But she doesn't know how to speak Swedish (language of Sweden). Because of this, she was unable to find a part time job. This is an example of _____</p> <p>(a) Interpersonal barrier (b)Physical barrier (c)Organisational barrier (d)Linguistic barrier</p>	1
vi.	<p>Which of these is not a quality associated with an entrepreneur?</p> <p>(a) Perseverance (b) Open-mindedness (c) Overconfidence (d) Independence</p>	1
Q.2	Answer any 5 out of the given 6questions (5x1= 5 marks)	
i.	<p>Assertion (A)– One can be a good artist while the other can be a great athlete. Reason(R)–Humans possess different types of intelligences but at different levels.</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>	1
ii.	<p>If you search Google for salons, the first few searches are mostly for female salons. This is based on the assumption that if a person is searching for a salon, in all probability that person would be female. What is this situation depicting?</p> <p>(a) Data Privacy (b) Data Access (c) AI Bias (d)AI Ethics</p>	1
iii.	<p>Statement 1: There are four layers in a neural network. Statement 2: The first layer of the neural network is known as the output layer.</p> <p>(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 2 is correct but Statement 1 is incorrect</p>	1
iv.	<p>Identify the algorithm based on the given graph.</p>  <p>(a) Dimensionality reduction (b) Classification (c) Clustering (d) Regression</p>	1

v.	CSV file extension stands for_____ <p>(a) Cell-separated verb (b)Civil-services van</p> <p>(c)Customer-service value (d)Comma-separated value</p>	1
vi.	A corpus contains 12 documents. How many document vectors will bethere for that corpus? <p>(a) 12 (b)1 (c)24 (d)1/12</p>	1
Q.3	Answer any 5 out of the given 6 questions (1x5= 5 marks)	
i.	Read the examples given below- <p>i. Using Chat GPT to write an email</p> <p>ii. Face unlock technology of mobile phones using camera</p> <p>iii. Turning off lights with IoT device</p> <p>iv. Hand sanitizer dispenser having sensor</p> <p>Choose the options that are not AI</p> <p>(a) i and ii (b)iii and i (c)iii and iv (d) i, iii and iv</p>	1
ii.	Data Visualization is an essential part of Data Science used to communicate findings effectively. (True/False)	1
iii.	Which of the following is an application of data science? <p>(a) Text summarization (b)Target Advertisements</p> <p>(c)Face lock in smart phones (d) Email filters</p>	1
iv.	Aspect ratio in computer vision refers to proportional relationship between the _____ and _____ of an object or image. <p>(a) Width, Height (b) Width, Pixels</p> <p>(c) Height, Intensity (d) Length, Breadth</p>	1
v.	Identify a type of chat bot (by reading the information provided) that can be deployed in the customer care section of various companies: When the machine is triggered by a person, it follows the script and responds appropriately. Its task is to answer certain fundamental questions that it has been programmed to answer and to link it to human executives if it is unable to handle the conversation.	1
vi.	Identify the component which do not help in self driving cars <p>(a) Cameras (b) LiDAR (c) RADAR (d)LASER</p>	1

Q.4	Answer any 5 out of the given 6 questions (5x1= 5 marks)	
i.	When AI is merged with the Internet of Things, it can lead to _____of data that allows remote access to internet-connected devices and appliances to communicate. <p>(a) Storage (b) Cloud Computing (c) Automation (d) Processing</p>	1

vi.	Data Visualization is associated with _____stage of AI Project Cycle. (a) Problem Scoping (b) Data Acquisition (c) Data Exploration (d) Evaluation	1
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SECTION B : SUBJECTIVE TYPE QUESTIONS

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

Answer each question in 20 – 30 words.

Q.6	Enumerate any two ways to overcome barriers to effective communication.	2
Q.7	What is the importance of setting goals in life?	2
Q.8	What is a computer virus? Name any two antivirus packages commonly used.	2
Q.9	“Society is described as an aggregate of people living together in a community who associate for various engagements including business.” Explain the role of society in boosting entrepreneurship.	2
Q.10	Write any two functions of the operating system	2

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

Q.11	Explain the concept of "Smart Devices" in the context to modern technology.	2
Q.12	Nitya has learnt different types of modeling in AI project life cycle. But she is confused about the Supervised and Unsupervised learning algorithms. Help her to understand them.	2
Q.13	Ajay wants to access data from various sources. Suggest him any two points that he needs to keep in mind while accessing data from any data source.	2
Q.14	Name two applications of Computer Vision in the healthcare industry.	2
Q.15	What is Tokenization? Count the number of tokens in the following sentence: <i>If you fail, never give up because FAIL means "First Attempt in Learning."</i>	2
Q.16	A security firm employs a computer vision system that utilizes AI for facial recognition to enhance security measures at public events. The system scans the crowd and alerts personnel if it detects a known individual with a criminal background. What are the implications of using computer vision for facial recognition in security applications?	2

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

Q.17	Supriya went shopping to a mall with her sister. Her sister called a cab and the driver navigated the route using Google Maps on his smartphone. After they arrived at the mall, she was amazed to see that the door opened automatically as they approached it. They then went to a store and bought some clothes and walked out without going through the cash counter and afterwards, her sister scanned a QR code and paid for the items purchased. Which technology was employed in everything she had experienced. Is the same technology used everywhere?	4
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Q.18	<p>Akhil wants to learn how to scope the problem for an AI Project. Explain him the following:</p> <p>(a) 4W Problem Canvas</p> <p>(b) Problem Statement Template</p>	4
Q.19	<p>Identify and explain the types of the learning-based approaches in the figures given below.</p> <div data-bbox="475 443 1222 658" data-label="Image"> </div> <p style="text-align: center;">Figure1</p> <div data-bbox="464 745 1238 981" data-label="Image"> </div> <p style="text-align: center;">Figure2</p>	4
Q.20	<p>A 52-year-old man named Satya, a partially blind writer, writes short stories and poems in rural newspapers and magazines. He is dependent on villagers for his work. Suggest some NLP-based techniques so that he can continue his work independently.</p>	4
Q.21	<p>Implement bag of words algorithm and create Document Vector Table for the following three documents:</p> <p>Document 1: Priya and Ridhi are sisters.</p> <p>Document 2: Priya likes coffee and Ridhi likes tea.</p> <p>Document 3. Priya likes pizza and Ridhi likes burger:</p>	4