QUESTIONBANK(DESCRIPTIVE)

Subject Name with Code: Machine Learning (23A0529T)

Course & Branch: Year & Semester :III-II   **Regulation:RG23**

UNIT - I

S.No.	Question	[BT Level] [CO][Marks]
2 Marks Questions (Short)		
1.	Define Machine Leaching?	L1, CO1,2M
2.	What are the various types of Machine Learning paradigms?	L1, CO1,2M
3.	List modern types Machine Learning types?	L1, CO1,2M
4.	List various Applications of Machine Learning?	L1, CO1,2M
5.	Define Learning by Rote	L1, CO1,2M
6.	Define Learning by Induction.	L1, CO1,2M
7.	Define Reinforcement Learning.	L1, CO1,2M
8.	Define data? List various types of data.	L1, CO1,2M
9.	What is meant by data pre-processing.	L1, CO1,2M
10.	What is meant by outliers in the data?	
Descriptive Questions (Long)		
1	Define machine learning and explain the scope and applications of machine learning	L2,CO1,10M
2	Explain stages of Machine Learning with a neat sketch	L2,CO1,10M
3	Explain about Evolution of Machine Learning.	L2,CO1,10M
4	Differentiate supervised, Unsupervised Reinforcement Learning.	L2,CO1,10M
5	Discuss about the types of Data in machine learning.	L2,CO1,10M
6	Solve the given data by standardization A.	L3,CO1,10M

A.

Student	Marks (X)
A	50
B	60
C	70
D	80
E	90

B.

Employee	Age (years)	Salary (₹ in thousands)
E1	22	25
E2	26	30
E3	30	35
E4	34	40
E5	38	45

S.No.	Question	[BT Level] [CO][Marks]
7	Apply scaling using range and Standardization methods for the following dataset to data normalization	L3,CO1,10M

Age (years)	Income (thousands of rupees)
25	400
45	700
65	1000

8	Explain various sources of open source data sets	L2,CO1,10M
9	Explain about over fitting , under fitting and good fitting	L2,CO1,10M
10	Explain about common problems encountered with the raw data	L2,CO1,10M

UNIT - II

S.No.	Question	[BT Level] [CO][Marks]
2 Marks Questions (Short)		
1.	Define Proximity Measures.	L1,CO2,2M
2.	What are the popular types of Proximity Measures?	L1,CO2,2M
3.	List the Distance Measures in Machine Learning.	L1,CO2,2M
4.	Explain Radius Distance Nearest Neighbour	L2,CO2,2M
5.	Explain Non-Metric Similarity Functions	L2,CO2,2M
6.	Explain about Hamming distance	L2,CO2,2M
7.	List types of Proximity between Binary Patterns.	L1,CO2,2M
8.	Explain about confusion matrix	L2,CO2,2M
9.	Define K-Nearest Neighbour Classifier	L1,CO2,2M
10.	Define k-Nearest Neighbor Regression.	L1,CO2,2M
Descriptive Questions (Long)		
1	Explain about distance measures	L2,CO2,10M
2	Explain K-Nearest Neighbor Classifier algorithms.	L2,CO2,10M
3	Explain Radius Distance Nearest Neighbor algorithm.	L2,CO2,10M
4	Explain KNN Regression algorithm	L2,CO2,10M
5	Calculate the distance between player using K-Nearest Neighbor Classifier based on following data<table><tr><th>Name</th><th>Age</th><th>Gender</th><th>Class of Sports</th></tr><tr><td>Ajay</td><td>32</td><td>0</td><td>Football</td></tr><tr><td>Mark</td><td>40</td><td>0</td><td>Neither</td></tr><tr><td>Sara</td><td>16</td><td>1</td><td>Cricket</td></tr><tr><td>Zaira</td><td>34</td><td>1</td><td>Cricket</td></tr><tr><td>Sachin</td><td>55</td><td>0</td><td>Neither</td></tr><tr><td>Rahul</td><td>40</td><td>0</td><td>Cricket</td></tr><tr><td>Pooja</td><td>20</td><td>1</td><td>Neither</td></tr><tr><td>Smith</td><td>15</td><td>0</td><td>Cricket</td></tr><tr><td>Laxmi</td><td>55</td><td>1</td><td>Football</td></tr><tr><td>Michael</td><td>15</td><td>0</td><td>Football</td></tr></table>Find the class of sports of kalyan (gender 0) with age 38 with K=3?	L3,CO2,10M

6	A "XYZ " retail company wants to predict the monthly sales revenue of new stores based on their size 2800 and 4000 (in square feet) and the number of employees are 13 and 25 using KNN regression with K=3? 	Store Size (sq ft)	Number of Employees	Monthly Sales Revenue ($)	 	1500	5	30,000	 	2000	7	50,000	 	2500	10	70,000	 	3000	15	80,000	 	3500	20	1,00,000		L3,CO2,10M

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Store Size (sq ft)	Number of Employees	Monthly Sales Revenue ($)
1500	5	30,000
2000	7	50,000
2500	10	70,000
3000	15	80,000
3500	20	1,00,000

7	A bank wants to predict whether a customer is Eligible or Not Eligible for a loan based on Annual Income and Credit Score. The training dataset is given below:	L3,CO2,10M

Customer	Annual Income (₹ lakhs)	Credit Score	Loan Status
C1	3	620	Not Eligible
C2	4	650	Not Eligible
C3	6	700	Eligible
C4	8	750	Eligible
C5	7	720	Eligible

customer C6 has: Annual Income = 5 lakhs and Credit Score = 680. Using Radius Distance Nearest Neighbor with radius 45 and Euclidean distance, predict whether the customer is Eligible or Not Eligible for a loan.

8	Explain about proximity between binary patterns	L2,CO2,10M
9	Explain common measurements used to evaluate the performance of classification algorithms	L2,CO2,10M
10	Explain common measurements used to evaluate the performance of Regression algorithms	L2,CO2,10M