

Roll No.:

SGT UNIVERSITY

END TERM THEORY EXAMINATION JULY-2022

Faculty/College of Study:	Engineering & Technology	Year/Semester:	6 th Semester
Program:	B.Tech (ME)	Duration:	03:00 Hrs
Course/Subject:	Machine Learning for Mechanical Engineers	Maximum Marks:	60
Course/Subject Code:	13030602	Batch:	2019

Instructions:-

1. Write Your Roll No. on the Question Paper.
2. Candidate should ensure that they have been provided correct question paper. Complaint(s) in this regard, if any should be made within 15 minutes of the commencement of the exam. No complaint(s) will be entertained thereafter.
3. All Questions are compulsory. Marks are indicated against each question.
4. Illustrate your answer with diagram wherever required.

SECTION-A

(Very Short Answer Type Questions)

Note: All Questions are compulsory: -

[12X1=12 Marks]

S. No.	Question	Marks Allotted
1	Identify the output of the following command: X=dataset.iloc[:, :-1].values	1
2	Can we do prediction on unlabeled dataset?	1
3	Which library of python is called "SQL of python"?	1
4	The classification technique of machine learning is used for discrete type of data. Is the above statement being correct?	1
5	Which command is used to import pandas library in python?	1
6	Which command is used to select all the rows of last column of the dataframe in python?	1
7	What is a Neural Network?	1
8	SVM in machine learning stands for	1
9	The Adam Eve learning on earth is considered as _____ type of machine learning.	1
10	Which library of python is used for visualization of dataset?	1
11	Which command is used to find missing data in python?	1
12	Generally, How much percentage of total data is used for training the machine learning model?	1

SECTION-B
(Short Answer Type Questions)

Note: All Questions are compulsory: -

[4X2=8 Marks]

S. No.	Question	Marks Allotted
13	List out any four applications of machine learning	2
14	Discuss the difference between labelled and unlabeled data. Also, which types of machine learning is used for labelled and unlabeled data.	2
15	Discuss the error/cost function for associated simple linear regression.	2
16	Discuss difference between regression and classification.	2

SECTION-C
(Descriptive Answer Type Questions)

Note: All Questions are compulsory: -

[4X4=16 Marks]

S. No.	Question	Marks Allotted
17	Discuss Supervised, Unsupervised and Reinforcement learning types of machine learning with examples. Also, distinguish between Supervised and Unsupervised types of machine learning OR Explain Logistic Regression with examples.	4
18	Explain the difference between KNN and K-means Clustering	4
19	Distinguish between overfitting and underfitting. How to Tackle Overfitting and Underfitting?	4
20	What is Clustering? Discuss different types of clustering. OR What is a Confusion Matrix? Elaborate by taking any example.	4

SECTION-D

(Long Answer Type Questions)

Note: All Questions are compulsory: -

[4X6=24 Marks]

S. No.	Question	Marks Allotted																																																																																										
21	<p>The following data set contains factors that determine whether tennis is played or not. Using Naive Bayes classifier, find the play prediction for the day <Sunny, Cool, High, Strong></p> <table border="1"><thead><tr><th>DAY</th><th>OUTLOOK</th><th>TEMP</th><th>HUMIDITY</th><th>WIND</th><th>PLAY</th></tr></thead><tbody><tr><td>Day 1</td><td>Sunny</td><td>Hot</td><td>High</td><td>Weak</td><td>NO</td></tr><tr><td>Day 2</td><td>Sunny</td><td>Hot</td><td>High</td><td>Strong</td><td>NO</td></tr><tr><td>Day 3</td><td>Overcast</td><td>Hot</td><td>High</td><td>Weak</td><td>YES</td></tr><tr><td>Day 4</td><td>Rain</td><td>Mild</td><td>High</td><td>Weak</td><td>YES</td></tr><tr><td>Day 5</td><td>Rain</td><td>Cool</td><td>Normal</td><td>Weak</td><td>YES</td></tr><tr><td>Day 6</td><td>Rain</td><td>Cool</td><td>Normal</td><td>Strong</td><td>NO</td></tr><tr><td>Day 7</td><td>Overcast</td><td>Cool</td><td>Normal</td><td>Strong</td><td>YES</td></tr><tr><td>Day 8</td><td>Sunny</td><td>Mild</td><td>High</td><td>Weak</td><td>NO</td></tr><tr><td>Day 9</td><td>Sunny</td><td>Cool</td><td>Normal</td><td>Weak</td><td>YES</td></tr><tr><td>Day 10</td><td>Rain</td><td>Mild</td><td>Normal</td><td>Weak</td><td>YES</td></tr><tr><td>Day 11</td><td>Sunny</td><td>Mild</td><td>Normal</td><td>Strong</td><td>YES</td></tr><tr><td>Day 12</td><td>Overcast</td><td>Mild</td><td>High</td><td>Strong</td><td>YES</td></tr><tr><td>Day 13</td><td>Overcast</td><td>Hot</td><td>Normal</td><td>Weak</td><td>YES</td></tr><tr><td>Day 14</td><td>Rain</td><td>Mild</td><td>High</td><td>Strong</td><td>NO</td></tr></tbody></table>	DAY	OUTLOOK	TEMP	HUMIDITY	WIND	PLAY	Day 1	Sunny	Hot	High	Weak	NO	Day 2	Sunny	Hot	High	Strong	NO	Day 3	Overcast	Hot	High	Weak	YES	Day 4	Rain	Mild	High	Weak	YES	Day 5	Rain	Cool	Normal	Weak	YES	Day 6	Rain	Cool	Normal	Strong	NO	Day 7	Overcast	Cool	Normal	Strong	YES	Day 8	Sunny	Mild	High	Weak	NO	Day 9	Sunny	Cool	Normal	Weak	YES	Day 10	Rain	Mild	Normal	Weak	YES	Day 11	Sunny	Mild	Normal	Strong	YES	Day 12	Overcast	Mild	High	Strong	YES	Day 13	Overcast	Hot	Normal	Weak	YES	Day 14	Rain	Mild	High	Strong	NO	6
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22	Explain simple linear regression with an example (you can take research experience and stipend dataset as example).	6																																																																																										
23	Illustrate K means clustering algorithm with an example. OR What is Support Vector Machine (SVM) in Machine Learning?	6																																																																																										
24	Elaborate the Tom Mitchell's definition of machine learning with examples. What is E,P and T in spam detection and placement prediction application of machine learning?	6																																																																																										