BENNETT UNIVERSITY
THE TIMES GROUP

Enrolment No: _____

Name of Student: _____

Department/ School: _____

END TERM EXAMINATION ODD SEMESTER 2022-23

COURSE CODE: CSET211 **MAX. DURATION** 2 Hours

COURSE TITLE: STATISTICAL MACHINE LEARNING

COURSE CREDIT: 4(3-0-2) **TOTAL MARKS** 30

GENERAL INSTRUCTIONS: -

1. Do not write anything on the question paper except **name, enrolment number** and **department/school.**
2. Carrying mobile phone, smart watch and any other non-permissible materials in the examination hall is an act of **UFM.**
3. All Questions are Compulsory.

Note: If require any missing data; then choose suitably

Attempt all questions in brief.

1) Define the significance of dimension reduction methods? Explain Principle Component Analysis algorithm for dimension reduction with example. 5 (2+3) Marks
2) State short note on: (2 Marks each) 6 Marks
   i) Bayes Theorem
   ii) Precision Recall Tradeoff
   iii) Significance of Regularization
3) Discuss the role of "kernel trick" in SVM and how is it useful? Define some situations where you will use an SVM over a Random Forest Machine Learning algorithm. 6 (3+3) Marks
4) Investigate KNN is a non-parametric Algorithm? Is Feature Scaling required for the KNN Algorithm? Discuss with proper justification. 4 (2+2) Marks
5) Discuss two cases where K means clustering fails to give good results. 3 Marks

6) Design a Decision Tree for the following data using Information gain. 6 Marks

Training set: 3 features and 2 classes

X	Y	Z	C
1	1	1	I
1	1	0	I
0	0	1	II
1	0	0	II