Total No. of Questions – [3] Total No. of Printed Pages: 2

G.R. No.		PAPER CODE	U-324-251A(ESE)

MAY 2022 (ENDSEM) EXAM

T.Y. INFORMATION TECHONOLOGY (SEMESTER - II)

COURSE NAME: Professional Elective-II

(Machine Learning)

COURSE CODE: ITUA32181A

(PATTERN 2018)

Time: [1Hr] [Max. Marks: 30]

Instructions to candidates:

1) **Figures to the right indicate full marks.**
2) **Use of scientific calculator is allowed**
3) **Use suitable data where ever required**

Q.1 a) Identify applications of KNN algorithm. [4]

b) For the following given Transaction Data-set, Determine Rules using Apriori Algorithm. Consider the values as Support=50% [6]

Transaction ID	Items Purchased
1	Bread, Cheese, Egg, Juice
2	Bread, Cheese, Juice
3	Bread, Milk, Yogurt
4	Bread, Juice, Milk
5	Cheese, Juice, Milk

OR

b) Perform KNN classification algorithm on following dataset and predict the class for X(P1= 3 and P2=7). Assume K=3. [6]

P1	P2	Class
7	7	False
7	4	False
3	4	True
1	4	True

Q2 a) Justify need of Gaussian Mixture Model. [4]

b) Suppose 30% of the women in a class received an A on the test and 25% of the men received an A. The class is 60% women. Given that a person chosen at random received an A, Determine the probability this person is a women? [6]

OR

b) In bag, 40% of toys are balls and rest are discs. If 25% of balls and 10% of the discs are yellow. Determine the probability that yellow toys selected at random is balls. [6]

Q.3 a) Explain Bias-Variance tradeoff with neat diagram. [4]

b) Distinguish between Bagging, Boosting and Stacking. [6]

OR

b) Compare Sigmoid, Softmax, RELU and Leaky RELU. [6]