Code No.: 20-CS-PC-322 **R20** **H.T.No.** | | | R | 0 | | | | | | |

CMR INSTITUTE OF TECHNOLOGY: HYDERABAD

UGC AUTONOMOUS

III– B.Tech. – II – Semester End Examinations– MAY– 2023

MACHINE LEARNING AND DATA SCIENCE

(Common to CSE, CSE (AI&ML),CSE(DS))

[Time: 3 Hours] **[Max. Marks: 70]**

Note:
1. This question paper contains two parts A and B.
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have i, ii, iii as sub questions.
4. Illustrate your answers with NEAT sketches wherever necessary.

PART-A **10 X 2M = 20 M**

S.No	*Question*	*Blooms Taxonomy Level*	*CO*	*PO*
1	Differentiate between vector and array.	II	1	2,3,6,12
2	Explain conditional probability.	I	1	2,3,6,12
3	Compare overfitting and underfitting.	I	2	2,3,6,12
4	Explain Lasso regularization.	I	2	2,3,6,12
5	Analyze how rule induction used predictive analytics.	I	3	2,3,6,12
6	Define web scraping with an example.	I	3	2,3,6,12
7	Explain the importance of NLTK package.	I	4	2,3,6,12
8	Explain the process of rescaling.	I	4	2,3,6,12
9	Explain hybrid recommendations with an example.	I	5	2,3,6,12
10	List any four packages used in sentiment analysis.	II	5	2,3,6,12

PART-B **5 X 10M = 50 M**

11.A	Discuss in detail covariance and its limitations, and the importance of correlation with examples.	IV	1	2,3,6,12
	OR			
11.B	Demonstrate the following with an example. 1. p-Hacking 2. Confidence intervals	IV	1	2,3,6,12

12.A	Explain the types of machine learning algorithms with examples.	II	2	2,3,6,12
	OR			
12.B	Demonstrate the following classification algorithms. 1.Support Vector Machines 2. K-Nearest Neighbour	II	2	2,3,6,12
13.A	Define neural network and explain the various parameters used in generalization of neural networks.	II	3	2,3,6,12
	OR			
13.B	Compare and contrast analysis vs reporting	II	3	2,3,6,12
14.A	Demonstrate various plots used in visualization of data with examples.	III	4	2,3,6,12
	OR			
14.B	Analyze and explain the roles of data munging and data cleaning in data preprocessing.	III	4	2,3,6,12
15.A	Compare and contrast content based and collaborative based filtering with examples.	II	5	2,3,6,12
	OR			
15.B	Interpret the process of data cleaning in sentiment analysis with examples.	II	5	2,3,6,12

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