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## B.Tech. Degree VI Semester Regular Examination April 2022

**CS 19-202-0604 DATA MINING**

(2019 Scheme)

Time: 3 Hours

Maximum Marks: 60

### Course Outcome

On successful completion of the course, the students will be able to:

CO1: Analyze various types of data, its collection and cleaning.

CO2: Illustrate and analyze various applications of data mining.

CO3: Analyze and compare various classification models in data mining.

CO4: Understand developments in big data technologies.

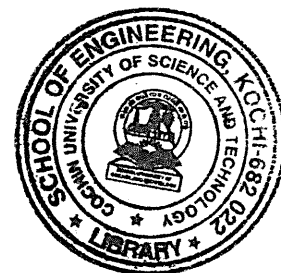
CO5: Familiarize the concepts of machine learning using R/Python.

CO6: Analyze and make use of deep learning using R/Python.

Bloom's Taxonomy Levels (BL): L1 – Remember, L2 – Understand, L3 – Apply, L4 – Analyze,

L5 – Evaluate, L6 – Create

PO – Programme Outcome



### PART A

(Answer **ALL** questions)

I.		(8 × 3 = 24)	Marks	BL	CO	PO
(a)	Distinguish between supervised and unsupervised learning with examples.		3	L2	2	1,3,5
(b)	How OLAP can be applied in business intelligence?		3	L3	1	1,5,2
(c)	How we can evaluate the performance of a classifier using confusion matrix?		3	L5	3	2,8,2
(d)	Define support and confidence with examples.		3	L1	2	1,3,5
(e)	How does the DBSCAN algorithm perform clustering?		3	L2	2	1,3,5
(f)	How do we analyze time series data?		3	L4	2	1,3,5
(g)	What are the various applications of cloud services?		3	L3	4	5,8,2
(h)	Write a note on hadoop distributed architecture.		3	L2	4	5,8,2

### PART B

(4 × 12 = 48)

II.	Explain the various applications of data mining, namely regression,classification and clustering, with examples for each?	12	L1	2	1,3,5
OR					
III.	(a) Show the binning by means and binning by boundary results for the following data (21,23,25,41,43,46,56,58,62,83,82,89), assuming a bin size of 3.	6	L3	1	1,5,2
	(b) Explain the various types of data preprocessing techniques.	6	L2	1	1,5,2
IV.	(a) Write the algorithm for decision tree and explain how one can create a decision tree with examples.	10	L6	3	2,8,2
	(b) How we analyze perfomance of a decision tree?	2	L4	3	2,8,2
OR					
V.	(a) Write the algorithm for back propagation and explain how one can create a neural network with weights for a given datasets with examples.	10	L6	3	2,8,2
	(b) How we evaluate the perfomance of a neural net classifier?	2	L5	3	2,8,6

(P.T.O)

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VI.	What are the different types of clustering algorithms? Explain with examples.	12	L2	2	1,3,5
<b>OR</b>					
VII. (a)	What is graph mining and explain the different applications of graph mining?	4	L1	2	1,3,5
(b)	How does heirarchical clustering algorithm works for planning closest cities using an adjascency matrix?	8	L3	2	1,3,5
VIII. (a)	Describe the various data bases used for big data with examples.	6	L1	4	5,8,2
(b)	Distinguish between spark and hadoop.	6	L2	4	
<b>OR</b>					
IX. (a)	Explain how DNNs are used for deep learning with examples.	6	L2	6	1,5,2
(b)	Explain how pattern recognition in machine learning is a very important application of Neural nets.	6	L2	5	1,5,2

Blooms's Taxonomy Levels

L1=25%, L2=43%, L3=25%, L4=12.5%, L5= 12.5%, L6=12.5%

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