JHARKHAND Rai University
RANCHI

End Semester/Reappear (Semester III) Examination December, 2024

Programme: MCA
Course: Data Mining and Warehousing **Full Marks: 70**
Course Code: 3CIT202 **Time: 3 Hrs.**
Enrolment no. _____

Q. No.	Questions	CO	Bloom Taxonomy Category	Marks
	Section I			
1	**Short Answer type questions**			**4 x 5 = 20**
a	Explain data warehouses. How do they contribute to decision support systems and data mining?	CO1	Understand	
	or			
	Briefly explain the significance of data mining in extracting valuable patterns from large datasets.	CO1	Apply	
b	Define the Multidimensional Data Model in the context of data warehousing and its components.	CO2	Remember	
	or			
	Explain the term "Data Cube" and its significance in data analysis.	CO2	Understand	
c	State the definition of association rule mining in the context of large databases and explain its key components.	CO3	Understand	
	or			
	What is a support count in association rule mining? How is it used to evaluate the significance of a rule?	CO3	Remember	
d	Distinguish the difference between classification and prediction in machine learning? Provide an example for each.	CO4	Understand	
	or			
	List and explain two issues commonly encountered in classification and prediction.	CO4	Understand	
	Section II			
Long Answer type questions				**3 x 10 = 30**
2	Determine the steps involved in Data Warehouse Implementation. Include the design, extraction, transformation, and loading (ETL) processes.	CO2	Evaluate	
	or			
	Compare and contrast the role of Data Warehousing and Data Mining in business intelligence systems. How are they related?	CO2	Analyze	
3	Explain the process of mining single-dimensional, Boolean association rules from a transaction database. What challenges are involved in this process?	CO3	Analyze	
	or			
	Describe how multi-level association rules are generated. Discuss how these rules provide useful insights for data analysis, giving a suitable example.	CO3	Analyze	
4	Determine the process of classification by decision tree induction. How does the algorithm select the best attribute for splitting at each node.	CO4	Evaluate	
	or			
	Explain the concept of Back propagation in classification. How is this technique used in neural networks for classification tasks?	CO4	Understand	
	Section III			
	Application based questions			**1 x 20 = 20**
5	Explain the Data Warehouse Architecture in-depth. Include discussions on the different layers of data storage, the role of ETL processes, and how the architecture supports OLAP queries.	CO2	Analyze	
	or			

	Describe how Data Generalization works in the context of OLAP. Provide examples to explain how this technique helps in creating higher-level abstractions of data for decision-making	CO2	Analyze	

COURSE OUTCOME

At the end the course the candidate will able to

CO1: Describe the fundamentals of data mining systems as well as issues related to access and retrieval of data at scale.

CO2: Explain the various data mining functionalities and data warehousing techniques

CO3: Apply the various data mining techniques to solve classification, clustering and association rule mining problems.

CO4: Analyze and choose among different approaches of a data mining task.

CO5: Design and evaluate data mining models to be used in solving real life problems, keeping in view social impacts of data mining.