BACHELOR OF TECHNOLOGY (CBCS) (2014 COURSE)

Information Technology

B.Tech.Sem - VI :SUMMER : 2023

SUBJECT : ADVANCED DATABASE MANAGEMENT SYSTEMS

Day : Wednesday | Time : 02:30 PM-05:30 PM

Date : 24-05-2023 | S-13419-2023 | Max. Marks : 60

N. B. :

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Draw neat and labelled diagrams **WHEREVER** necessary.
4) Assume suitable data, if necessary.

Q. 1 With the help of suitable example explain nested relation model in detail. List and explain the issues related to design and implementation of ORDBMS. **(10)**

OR

Design a generalization specialization hierarchy for a motor vehicle sales company. The company sells motor cycles, passenger cars, vans and buses. Justify the placement of attributes at each level of hierarchy. Explain why they should not be placed at a higher or lower level. **(10)**

Q. 2 How do the different computer architecture system influence database system architectures? List the categories of various computer architecture and explain any one with their application in database systems. **(10)**

OR

For distributed databases, explain the following: **(10)**

i) System Structure ii) Availability
iii) Heterogeneous Distributed Databases

Q. 3 What are materialized views? Explain the view maintenance of materialized views. **(10)**

OR

State and explain the techniques of estimating the statistics for result of different types of selection operations. **(10)**

Q. 4 Elaborate the Architectural Strategies for data warehousing. List and explain organizational issue related to data warehousing. **(10)**

OR

What is OLAP and OLTP? Explain the snowflake schema for data modeling with an example. **(10)**

Q. 5 What are Decision Support Systems and Information retrieval systems? Elaborate example of any one. **(10)**

OR

What is clustering in data mining? Elaborate with appropriate example. **(10)**

Q.6 Write a note on: **(10)**

a) Spatial Data and Database
b) Geographic Data and Database

OR

What is Geographic information system? Why classical form of database cannot be used for Geographic information. Justify with example. **(10)**

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BACHELOR OF TECHNOLOGY (CBCS) (2020 COURSE)

Information Technology

B.Tech.Sem - VI :SUMMER : 2023

SUBJECT : DATA WAREHOUSING & DATA MINING

Day : Friday | Time : 02:30 PM-05:30 PM

Date : 26-05-2023 | S-24745-2023 | Max. Marks : 60

N.B.

1) All questions are **COMPULSORY**.
2) Figures to the **RIGHT** indicate **FULL** marks.
3) Assume suitable data **WHEREVER** necessary.
4) Draw neat labeled diagrams **WHEREVER** necessary.

Q.1 Appraise the necessity of parallel database architectures. Compare the various parallel database architectures. **(10)**

OR

Q.1 Discuss the structure and representation of multidimensional data. Does it play a significant role in data warehouse? How? **(10)**

Q.2 Consider a database for a supermarket. Illustrate the steps in knowledge discovery process for this database. **(10)**

OR

Q.2 Assess the role of data preprocessing in data mining process. Elaborate the operations used for data preprocessing with an example. **(10)**

Q.3 Define the terms support and confidence. How do they contribute in establishing association rules? Discuss with an example. **(10)**

OR

Q.3 What is pattern evaluation? Compare any two pattern evaluation methods. **(10)**

Q.4 List and compare the different classification techniques in data mining. **(10)**

OR

Q.4 For the confusion matrix given below. Calculate sensitivity, precision and accuracy. Also elaborate these terms. **(10)**

Classes	Buy-computer =yes	Buy-computer =no	Total
Buy-computer=yes	6954	46	7000
Buy-computer= no	412	2588	3000
Total	7366	2634	10,000

Q.5 Compare Agglomerative and Divisive Hierarchical clustering. Give two examples each. **(10)**

OR

Q.5 Consider reference string S(4,3,5,7,9,10,12,13,16,99). Apply K means clustering algorithm by taking centers C1=3 and C2 =12 as initial means. Calculate cluster elements for the clusters C1 and C2 after three phases. **(10)**

Q.6 Weka provides multiple learning algorithms. Identify and elaborate any two learning algorithms with examples. **(10)**

OR

Q.6 "Weka is an effective tool for data mining". Identify and elaborate the features of Weka to prove this statement. **(10)**

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