

BACHELOR OF TECHNOLOGY (CBCS) (2021-COURSE)
B. Tech. Sem - IV Computer Science & Business Systems : WINTER : 2024
SUBJECT: DATABASE MANAGEMENT SYSTEMS

Day : Saturday
Date : 07/12/2024

W-24155-2024

Time : 02:30 PM-05:30 PM
Max. Marks : 60

N.B.

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw neat and labelled diagram **WHEREVER** necessary.

Q.1 State and explain the architecture of DBMS. Draw the E – R diagram for (10)
banking system. (Home loan application)

OR

Q.1 Explain different DDL, DML and DCL commands with example. (10)

Q.2 Explain about tuple relational calculus and domain relations calculus in details. (10)

OR

Q.2 What is relational algebra and explain domain relational calculus? (10)

Q.3 What is functional dependency? Why are some functional dependencies (10)
trivial?

OR

Q.3 Explain Normalization and types of Normalization with example. (10)

Q.4 Explain all the operations on B + tree with example. (10)

OR

Q.4 What is meant by cost based query optimization? List cost functions for (10)
SELECT and JOIN query optimization.

Q.5 Explain the properties of transactions and what are the disadvantages of using (10)
lock – based protocols.

OR

Q.5 What is serializable schedule? Explain with suitable example the types of (10)
serializable and also explain testing for serializability.

Q.6 What is Data warehousing and data mining? Explain the steps in Data mining (10)
process.

OR

Q.6 What is DAC, MAC, and RBAC models? (10)

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