

BACHELOR OF TECHNOLOGY (CBCS - 2023)
B. Tech. Sem-III Computer Science & Engineering AI & ML : WINTER: 2025
SUBJECT: DATABASE MANAGEMENT SYSTEMS

Day : Wednesday
Date : 17/12/2025

W-29211-2025

Time : 10:00 AM-01:00 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.
- 4) Use of Non-programmable **CALCULATOR** is Allowed.
- 5) Assume suitable data if necessary.

Q.1 Construct an ER diagram for Hospital management systems with proper attributes. [10]

OR

Q.1 Design complete Architecture of DBMS and explain each component. [10]

Q.2 Explain generalization with help diagram and give one example. [10]

OR

Q.2 Analyze integrity constrain with the help of table example. [10]

Q.3 Create a student_details table ADD details into table and perform following operation on it: [10]

- | | |
|--------------|-------------|
| i) ALTER | ii) SELECT |
| iii) ORDERBY | iv) GROUPBY |

OR

Q.3 Create a EMP_DETAILS table ADD details into table and perform following operations on it: [10]

- | | |
|----------------------------|----------------|
| i) ADD NEW COLUMN (SALARY) | ii) MIN SALARY |
| iii) MAX SALARY | |

Q.4 Explain in importance of constraints in DBMS and explain primary key constraints with example. [10]

OR

Q.4 Analyze functional dependencies with notations along with examples. [10]

Q.5 Explain domain relational calculus. [10]

OR

Q.5 Create a student_details table also create student_marks table and perform following operations on it: [10]

- | | | |
|--------------|----------------|-----------------|
| i) Left join | ii) Right join | iii) Inner join |
|--------------|----------------|-----------------|

Q.6 Explain buffering block of database along with types. [10]

OR

Q.6 Explain with the help of diagram B Tree and B+ Tree. [10]

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