# GIET UNIVERSITY, GUNUPUR – 765022

B. Tech (Third Semester Regular) Examinations, December – 2023

## 22BCMPC23001– Data Base Management Systems

(CSE, CSE(AIML),CSE(DS))

Time: 3 hrs      Maximum: 70 Marks

**(The figures in the right hand margin indicate marks)**

**PART – A**      **(2 x 5 = 10 Marks)**

Q.1. Answer *ALL* questions

| | | CO # | Blooms Level |
|---|---|---|---|
| a. | List the differences between DROP and DELETE. | CO1 | K2 |
| b. | Create a table for Student with following attributes Sid Number, Sname Varchar2, Marks Number and Average Number (3, 2). Enter 5 students detail into it. | CO1 | K4 |
| c. | Define Normalization and Explain 2NF. | CO2 | K2 |
| d. | How does B-tree differ from a B+ tree? Why B+ tree usually preferred as an access structure to a data file? | CO3 | K2 |
| e. | Define Isolation Property with example. | CO4 | K2 |

**PART – B**      **(15 x 4 = 60 Marks)**

Answer *ALL* questions

| | | Marks | CO # | Blooms Level |
|---|---|---|---|---|
| 2. a. | Discuss about DBMS Users. Explain about DBA and his/her responsibility on DBMS. | 8 | CO1 | K3 |
| b. | Explain the structure of DBMS With neat diagram. | 7 | CO1 | K2 |
| | (OR) | | | |
| c. | Draw an ER diagram for Ticket Booking Management System. | 8 | CO1 | K4 |
| d. | Discuss the various disadvantages of file system. Explain how it can be overcome in DBMS. | 7 | CO1 | K2 |
| 3.a. | Give the following queries in SQL | 8 | CO2 | K3 |

     i) To change the column EMPNO NUMBER (4) TO EMPNO NUMBER (6) in Employees table.

     ii) To display name, job, salary of employees whose name is starting with 'B'.

     iiii) To display empno, name, job, salary, location whose salaries not from 10000 to 30000.

     iv) Find the name of the employee working at Mumbai.

| | | Marks | CO # | Blooms Level |
|---|---|---|---|---|
| b. | Explain about Normalization with its advantages. | 7 | CO2 | K2 |

(OR)

| | | | | |
|---|---|---|---|---|
| c. | Consider two set of FD's F and G and find out whether they are equivalent or not.<br><br>**F:{A→C,AC→D,E→AD,E→H} & G:{A→CD,E→AH}** | 8 | CO2 | K3 |
| d. | With relevant examples discuss the various operations in Relational Algebra. | 7 | CO2 | K2 |
| 4.a. | Describe the storage structure of B+ tree files and their access method with examples. | 8 | CO3 | K2 |
| b. | Illustrate about RAID in detail. | 7 | CO3 | K2 |

<div align="center">(OR)</div>

| | | | | |
|---|---|---|---|---|
| c. | The primary keys of the records are given as: 5,1,3,12,10,18,2,7,4,20<br><br>Using B+ tree of order 4 explain how the records are arranged in the file | 8 | CO3 | K2 |
| d. | What are Armstrong 's axioms and why its required? Use Armstrong axioms to prove the soundness of decomposition rule and pseudo transitive rule. | 7 | CO3 | K2 |
| 5.a. | Explain about log based recovery in DBMS. | 8 | CO4 | K2 |
| b. | Discuss on strict two-phase locking protocol and time stamp- base protocol. | 7 | CO4 | K2 |

<div align="center">(OR)</div>

| | | | | |
|---|---|---|---|---|
| c. | Explain the Properties of transactions. How can you implement atomicity in transactions? Explain in detail. | 8 | CO4 | K2 |
| d. | Explain about deadlock handling mechanism in DBMS. | 7 | CO4 | K2 |

<div align="center">--- End of Paper ---</div>