FACULTY OF SCIENCE
B. Sc IV SEMESTER (CBCS R-19) EXAMINATIONS, MAY 2023
COMPUTER SCIENCE - IV
DATA BASE MANAGEMENT SYSTEM

1065

TIME: 3 HRS] [MAX. MARKS: 80

**SECTION - A (8 X 4 = 32 Marks)**

1 **Answer any EIGHT questions**

a Define Database. What are different types of databases?

b Discuss various roles in the Data base Environment.

c Define primary key and foreign key.

d Discuss different types of Anomalies in brief.

e Explain about stored and derived attributes

f Demonstrate transitive dependency? Give an example

g What are the different data types are available in SQL.

h What is a trigger? Explain

i Explain the self-join operation with suitable example.

j Discuss about Concurrency Control without Locking.

k What is the need of recovery Transactions.

l Describe the Security issues in Database.

**SECTION – B (4 X 12 = 48 Marks)**

**Answer ALL questions**

2 a Discuss the advantages and Dis advantages of DBMS over the traditional file system.

**OR**

b Define Schema. Explain three level architecture in DBMS.

3 a What is ER model? write about the notations used ER diagram with suitable example

**OR**

b Compare and contrast BCNF with 3NF? Illustrate them with suitable example.

4 Discuss in detail Aggregate functions in SQL.

**OR**

b Write SQL statements for following:

Student( Enrno, name, courseId, emailId, cellno) Course(courseId, course_nm, duration)

i) Add a column city in student table.

ii) Find out list of students who have enrolled in "computer" course.

iii) List name of all courses with their duration.

iv) List name of all students start with „a".

v) List email Id and cell no of all mechanical engineering students.

5 a What is Two-Phase Locking Protocol? How does it guarantee Serializability?

**OR**

b Write in detail about different RAID levels.

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