



CBCS SCHEME

20MCA21

Second Semester MCA Degree Examination, June/July 2023

Database Management System

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Define DBMS. Explain the advantages of using DBMS approach. (10 Marks)
b. Define three schema architecture with neat diagram. (06 Marks)
c. Define the following : (04 Marks)
i) Schema ii) DDL iii) DML iv) Database.

OR

- 2 a. Explain the main characteristics of the database approach versus the file processing approach. (10 Marks)
b. Explain different actors on the scene. (05 Marks)
c. Explain any five DBMS interfaces. (05 Marks)

Module-2

- 3 a. Define the following terms: (10 Marks)
i) Relational data model
ii) Schema of a relation
iii) Superkey of a relation
iv) Relational operations
v) Primary key and foreign key.
b. Draw schema diagram for the university database. (10 Marks)
Classroom (building, room_number, capacity)
Department (dept_name, building, budget)
Course(course_id, title, dept_name, credits)
Instructor(ID, name, dept_name, salary)
Section(course_id, sec_id, sem, year, building, room_no, time_slot_id)
Teaches(ID, course_id, sec_id, sem, year)
Student(ID, name, dept_name, tot_cred)
Takes(ID, course_id, sec_id, semester, year, grade)
advisor(S_ID, i_ID)
time_slot(time_slot_id, day, start_time, end_time)
Prereg(course_id, Prereg_id)

OR

- 4 a. Define the following terms: (05 Marks)
i) Entity ii) Attribute iii) Entity type iv) Entity set v) Schema diagram
b. Explain different types of attributes occur in the ER-model with example. (10 Marks)
c. Draw the ER-diagram of a company database assuming 3-4 entity types. (05 Marks)

Module-3

- 5 a. Explain the following commands with syntax and example:
 i) Create ii) Insert iii) Alter iv) Update (10 Marks)
 b. Explain any six datatypes. (06 Marks)
 c. Define the following :
 i) Not Null ii) Check constraint iii) Unique constraint iv) SQL (04 Marks)

OR

- 6 a. Explain the following clause with example:
 i) select.....from.....where (10 Marks)
 ii) Group By
 iii) Having
 iv) Order By (10 Marks)
 b. Explain different aggregate functions with example. (10 Marks)

CMRIT LIBRARY
 BANGALORE - 560 037

Module-4

- 7 a. Explain about views in SQL with syntax and example. (10 Marks)
 b. Discuss about triggers and needs for triggers with example. (10 Marks)

OR

- 8 a. Explain in brief about stored procedure with syntax, explain how stored procedures are created and involved in SQL. (10 Marks)
 b. With the syntax and example explain the use of functions in SQL. (10 Marks)

Module-5

- 9 a. Define Transaction. Discuss the types of problems may encounter when two transactions run concurrently. (10 Marks)
 b. Explain different types of failures. (05 Marks)
 c. Explain the states for transaction execution with neat state transition diagram. (05 Marks)

OR

- 10 a. Explain ACID properties. (05 Marks)
 b. Discuss about Binary Locks. (10 Marks)
 c. Discuss about database backup and recovery from catastrophic failures. (05 Marks)

* * * * *