# Department of Computer Science & Engineering

Ramaiah Institute of Technology, M S R Nagar, MSRIT Post, Bangalore – 560054. (An Autonomous Institute, Affiliated to VTU)

**QUESTION BANK FOR MTECH I SEMESTER (Term: FEB 2023- MAY 2023)**

# Advanced Database Laboratory (MCSL17)

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| **S.No** | **List of Programs** | **CO** | **PO** |
| 1. | 1. **Suppose a movie\_studio has several film crews.** The crews might be designated by a given studio as crew1, crew 2, and so on. However, other studios might use the same designations for crews, so the attribute crew\_number is not a key for crews. Movie\_studio holds the information like name, branch and several locations. Each crew holds information like sector and strength.    * List all movie studios which are not used a single crews.    * Retrieve the movie studio which uses highest strength crew.    * Write a before insert trigger to check maximum number of crews to any studio is limited to 10. 2. **Consider the following restaurant database with the following attributes -** Name, address – (building, street, area, pincode), id, cuisine, nearby landmarks, online delivery- yes/no, famous for (name of the dish). Create 10 collections with data relevant to the following questions. Write and execute MongoDB queries:    * List the name and address of all restaurants in Bangalore with Italian cuisine    * List the name, address and nearby landmarks of all restaurants in Bangalore where north Indian thali is available. | **CO2, CO3** | **PO1,2,5** |
| 2. | 1. **The production company is organized into different studios**. We store each studio’s name branch and location; every studio must own at least one movie. We store each movie’s title, sensor\_number and year of production. Star may act in any number of movies and we store each actors name and address.    * List all the studios of the movie “Kantara”;    * List all the actors , acted in a movie ‘Kantara’    * Write a deletion trigger, does not allow to deleting current year movies 2. **Consider the following restaurant table with the following attributes** - Name, address –(building, street, area, pincode), id, cuisine, nearby landmarks, online delivery- (yes/no), famousfor(name of the dish) Create 10 collections with data relevant to the following questions. Write and execute MongoDB queries:    * List the name, address and nearby landmarks of all restaurants in Bangalore where north Indian thali is available    * List the name and address of restaurants and also the dish the restaurant is famous for, in Bangalore. | **CO2, CO3** | **PO1,2,5** |
| 3. | 1. **The production company is organized into different studios**. We store each studio’s name branch and location; a studio own any number of Cartoon-serials. We store each Cartoon-Serial’s title, sensor\_number and year of production. Star may do voices in any number of Cartoon-Serials and we store each actors name and address.    * Find total no of actors, do voiced in a Cartoon-Serials ‘Tom   and Jerry’   * + Retrieve name of studio, location and Cartoon-Serials title in   which star “Richard Kind” is voiced.   * + Write a deletion trigger, does not allow to deleting current   year Cartoon- Serials.   1. **Consider the following restaurant table with the following attributes** - Name, address –(building, street, area, pincode), id, cuisine, nearby landmarks, online delivery- (yes/no), famous for(name of the dish) Create 10 collections with data relevant to the following questions. Write and execute MongoDB queries:  * List the name, address and nearby landmarks of all restaurants in Bangalore where north Indian thali is available. * List the name and address of restaurants and also the dish the restaurant is famous for, in Bangalore where online delivery is available | **CO2, CO3** | **PO1,2,5** |
| 4. | 1. **Car marketing company wants keep track of marketed cars and their owner**. Each car must be associated with a single owner and owner may have any number of cars. We store car’s registration number, model & color and owner’s name, address & SSN. We also store date of purchase of each car.    * Find a person who owns highest number of cars    * Retrieve persons and cars information purchased on the day 03-03-2023    * Write a insertion trigger to check date of purchase must be less than current date (must use system date) 2. **Consider the following Tourist places table with the following attributes** - Place, address – (state), id, tourist attractions, best time of the year to visit, modes of transport(include nearest airport, railway station etc), accommodation, food - what not to miss for sure Create 10 collections with data relevant to the following questions. Write and execute MongoDB queries:    * List all the tourist places of Karnataka    * List the tourist attractions of Kerala. Exclude accommodation and food | **CO2, CO3** | **PO1,2,5** |
| 5. | 1. **Puppy pet shop wants to keep track of dogs and their owners**. The person can buy maximum three pet dogs. We store person’s name, SSN and address and dog’s name, date of purchase and sex. The owner of the pet dogs will be identified by SSN since the dog’s names are not distinct.    * List all pets owned by a person ‘Ramesh’.    * List all persons who are not owned a single pet    * Write a trigger to check the constraint that the person can buy maximum three pet dogs 2. **Consider the following Tourist places table with the following attributes** - Place, address –(state, id), tourist attractions,best time of the year to visit,modes of transport(include nearest airport, railway station etc), accommodation, food - what not to miss for sureCreate 10 collections with data relevant to the following questions. Write and execute MongoDB queries:    * List the tourist attractions of Kerala. Exclude accommodation   and food.   * + List the places sorted state wise | **CO2, CO3** | **PO1,2,5** |
| 6. | 1. **Education institute is managing the on line course enrollment system**. Students can enroll maximum of six courses of their choice and a maximum student to be enrolled to any course is 60. We store student details like name, USN, semester and several addresses, course details like unique title, unique id and credits.    * Find number of students enrolled for the course ‘ADBMS’    * Retrieve student names that are enrolled for AI course but not enrolled for IOT.    * Write a trigger to establish the constraint that the students can enroll maximum of six courses of their choice. 2. **Consider the following Tourist places table with the following attributes** - Place, address – (state, id), tourist attractions,best time of the year to visit,modes of transport(include nearest airport, railway station etc), accommodation, food - what not to miss for sure Create 10 collections with data relevant to the following questions. Write and execute MongoDB queries:    * List all the tourist places of Karnataka    * List the places sorted state wise | **CO2, CO3** | **PO1,2,5** |
| 7. | **A. The Sapna Book shop wants keep track of orders of the book**. The book is composed  of unique id, title, year of publication, single author and single publisher. Each order will be uniquely identified by order-id and may have any number of books. We keep track of quantity of each book ordered. We store the following details for author and publisher.  AUTHOR: unique author-id, name, city, country  PUBLISHER: unique publisher-id, name, city, country.   * + Find the author who has published highest number of books   + List the books published by specific publisher during the year 2022.   + Write before insertion trigger to book to check year of publication should allow current year only.  1. **Consider the following Movie table with the following attributes** Actor\_name, Actor\_id, Actor\_birthdate, Dirctor\_name,Director\_id, Director\_birthdate, film\_title, year of production ,type (thriller, comedy, etc.) Create 10 collections with data relevant to the following questions. Write and execute MongoDB queries:    * List all the movies acted by John in the year 2018    * List only the actors names and type of the movie directed by Ram. | **CO2, CO3** | **PO1,2,5** |
| 8. | 1. **The commercial bank wants keep track of the customer’s account information**. The each customer may have any number of accounts and account can be shared by any number of customers. The system will keep track of the date of last transaction. We store the following details.   **Account: unique account-number, type and balance**  **Customer: unique customer-id, name and several addresses** **composed of street, city and state**   * + - Add 3% interest to the customer who have less than 1000 balances and 6% interest to remaining customers.     - List joint accounts involving more than three customers     - Write an insertion trigger to allow only current date for date of last transaction field.  1. **Consider the following Movie table with the following attributes** - Actor\_name,Actor\_id, Actor\_birthdate , Dirctor\_name,Director\_id, Director\_birthdate, film\_title, year of production ,type (thriller, comedy, etc.) Create 10 collections with data relevant to the following questions. Write and execute MongoDB queries:    * List all the movies acted by John and Elly in the year 2012.    * List only the name and type of the movie where Ram has acted sorted by movie names | **CO2, CO3** | **PO1,2,5** |
| 9. | 1. **Consider the Insurance database given below. The primary keys are underlined and the data types are specified.**   PERSON (driver – id #: String, name: string, address: strong**)**  CAR (Regno : string, model: string, year: int)  ACCIDENT (report-number: int, accd-date: date, location: string)  OWNS (driver-id #:string, Regno: string)  PARTICIPATED (driver-id: string, Regno: string, report-number: int, damage\_amount: int)    Create the above tables by properly specifying the primary keys and the foreign keys. Enter at least five tuples for each relation.   * Update the damage amount for the car with a specific Regno in the accident with report number 12 to 25000. * Find the total number of people who owned cars that were involved in accidents in 2008. * Find the number of accidents in which cars belonging to a specific model were involved. * Write before insert trigger to if the accident date is on or before the current date.  1. **Consider the following Movie table with the following attributes** - Actor\_name, Actor\_id, Actor\_birthdate, Director\_name, Director\_id, Director\_birthdate, film\_title, year of production, type (thriller, comedy, etc.) Create 10 collections with data relevant to the following questions. Write and execute MongoDB queries:  * List all the movies acted by John and Elly in the year 2012. * List only the name and type of the movie where Ram has acted, sorted by movie names. | **CO2, CO3** | **PO1,2,5** |
| 10. | 1. Consider the following shipment schema. The primary keys are underlined. Assume relevant data types for attributes.   CUSTOMER (cust# ,cname, city)  ORDER (order#, odate, cust #, ord-Amt)  ORDER – ITEM (order #, Item #, qty)  ITEM (item #, unit price)  SHIPMENT (order #, ship-date)  Create the above tables in SQL. Specify primary and foreign keys properly. Enter at least 5 tuples in each table with relevant data. Solve the following queries.   * List name of the customer, no. of orders placed by each customer residing in Bangalore city. * List the order# for orders that were shipped from all the warehouses that the company has in a specific city. * List the customer names who have not ordered for item no. 10. * Write a deletion trigger, set NULL on deletion of an ITEM.  1. **Consider the following Movie table with the following attributes** - Actor\_name,Actor\_id, Actor\_birthdate , Dirctor\_name,Director\_id, Director\_birthdate, film\_title, year of production ,type (thriller, comedy, etc.) Create 10 collections with data relevant to the following questions. Write and execute MongoDB queries:    * List all the movies acted by John in the year 2018    * List only the actors names and type of the movie directed by Ram. | **CO2, CO3** | **PO1,2,5** |

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**Marks Distribution:**

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| **Conduction and Result** | **Write-Up** | **Execution** | **Viva/Demo** | **Change of Program** | **Total** |
| **Part – A** | **08Marks** | **18Marks** | **5 Marks** | **-5 Marks** | **50 Marks** |
| **Part – B** | **07Marks** | **12Marks** |