	BELLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT			
FORMS / FORMATS (ISO 9001:2015)	Doc. No: **FAF/L4**	Release No. **5.0** Date: **01/07/2017**	Revision No. **5.0** Date: **01/07/2017**	Section: **PP 04** Form No.: R/PP 04/04

Branch: CSE Sem: V Academic year: 2023-24
Sub: DATABASE MANAGEMENT SYSTEM Sub. Code: 21CS53

Assignment-II

QNo.	Question(s)	REFER
1.	List and explain characteristics of relations. Also list the notations used in relational model	MODUL2_PPT1_RDBMS_CONCEPTS
2.	Discuss the **entity integrity and referential integrity** constraints. Why each is considered important? **OR** Briefly discuss different types of **update operations** on relational database. Show an example of violation of all constraints in each of the update operation **OR** Explain the different relational model constraints **OR** What are basic operations that can change the state of relations in database? Explain how the basic operations deal with constraint violations	MODUL2_PPT1_RDBMS_CONCEPTS
3.	Discuss all forms of **ALTER** command with example	MODUL3_PPT1_ADVANCED_QUERIES
4.	Write command used for table creation. Explain how constraints are specified in SQL during table creation with suitable example	MODUL2_PPT2_SQL_BASICS
5.	Describe the six clauses in SQL retrieval query syntax. Show what type of constructs can be specified in each of six clauses. Which of the clauses are required and which are optional	MODUL2_PPT2_SQL_BASICS
6.	Draw an ER diagram for HOSPITAL Management system with the following PATIENTS(Pssn, Lastname, Firstname, PhoneNo, Sex, DOB, Address) DOCTORS(Dssn, Lastname, Firstname, PhoneNo, Sex, DOB, Address) BEDS(RoomNo, BedNo, Type, Status, Price) ACCOUNTS(DateIn, DateOut, Amount) Show all the types of Entities and Attributes. Assume your own Relationships, Participation constraints and Cardinality ratios with explanation	ASSIGNMENT
7.	Consider the following schema for a Library Database: BOOK(Book_id, Title, Publisher_Name, Pub_Year) BOOK_AUTHORS(Book_id, Author_Name) PUBLISHER(Name, Address, Phone) BOOK_COPIES(Book_id, Programme_id, No-of_Copies) BOOK_LENDING(Book_id, Programme_id, Card_No, Date_Out, Due_Date) LIBRARY_PROGRAMME(Programme_id, Programme_Name, Address) Write SQL queries to 1. Retrieve details of all books in the library – id, title, name of publisher, authors, number of copies in each Programme, etc. 2. Get the particulars of borrowers who have borrowed more than 3 books, but	SHARED

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	from Jan 2017 to Jun 2017. 3. Delete a book in BOOK table. Update the contents of other tables to reflect this data manipulation operation. 4. Partition the BOOK table based on year of publication. Demonstrate its working with a simple query. 5. Create a view of all books and its number of copies that are currently available in the Library.	
8.	Consider the schema for Company Database: EMPLOYEE(SSN, Name, Address, Sex, Salary, SuperSSN, DNo) DEPARTMENT(DNo, DName, MgrSSN, MgrStartDate) DLOCATION(DNo,DLoc) PROJECT(PNo, PName, PLocation, DNo) WORKS_ON(SSN, PNo, Hours) Write SQL queries to 1. Make a list of all project numbers for projects that involve an employee whose last name is 'Scott', either as a worker or as a manager of the department that controls the project. 2. Show the resulting salaries if every employee working on the 'IoT' project is given a 10 percent raise. 3. Find the sum of the salaries of all employees of the 'Accounts' department, as well as the maximum salary, the minimum salary, and the average salary in this department 4. Retrieve the name of each employee who works on all the projects controlled by department number 5 (use NOT EXISTS operator). 5. For each department that has more than five employees, retrieve the department number and the number of its employees who are making more than Rs. 6,00,000.	SHARED
9.	Discuss **EXISTS, NOT EXISTS** and **UNIQUE** functions in SQL	MODUL3_PPT1_ADVANCED_QUERIES
10.	Explain the usage of **aggregate functions** in SQL	MODUL2_PPT2_SQL_BASICS
11.	Tables used in this note: Sailors(sid: integer, sname: string, rating: integer, age: real); Boats(bid: integer, bname: string, color: string); Reserves(sid: integer, bid: integer, day: date).	SHARED

Sailors

Sid	Sname	Rating	Age
22	Dustin	7	45
29	Brutus	1	33
31	Lubber	8	55.5
32	Andy	8	25.5
58	Rusty	10	35
64	Horatio	7	35
71	Zorba	10	16
74	Horatio	9	40
85	Art	3	25.5
95	Bob	3	63.5

Boats

bid	bname	color
101	Interlake	blue
102	Interlake	red
103	Clipper	green
104	Marine	red

Reserves

sid	bid	day
22	101	1998-10-10
22	102	1998-10-10
22	103	1998-10-8
22	104	1998-10-7
31	102	1998-11-10
31	103	1998-11-6
31	104	1998-11-12
64	101	1998-9-5
64	102	1998-9-8
74	103	1998-9-8

Figure 1: Instances of Sailors, Boats and Reserves

1. Find the names of sailors who have reserved at least one boat.
2. Find the ids and names of sailors who have reserved two different boats on the same day.
3. Count the number of different sailor names.
4. Find the ids of sailors who have reserved a red boat or a green boat. (use UNION)
5. Find all information of sailors who have reserved boat number 101
6. Find the age of all sailors whose name begin with A and has atleast 3 characters
7. Find the id and name of sailors who have reserved boat between 5-9-1998 to 10-11-1998
8. Find the average age of sailors for each rating level that has at least two sailors

12.	Write a note on (Syntax wherever applicable) 1. **Triggers** in SQL 2. **Assertions** in SQL 3. **Views** in SQL 4. **Correlated nested queries** 5. Schema modification statements in SQL 6. **Scalar subqueries** 7. Problems caused by **Null** values 8. SQL Constructs**: WITH and CASE** **OR** How is **view** created and dropped? What problems are associated with updating view?	MODUL3_PPT1_ADVANCED_QUERIES & MODUL3_PPT2_ADVANCED_SQL
13.	List various **JOINs** in SQL. Explain all with suitable examples.	MODUL3_PPT`1_ADVANCED_QUERIES FOR EXAMPLES REFERE SQL_DOC_MENTAION
14.	Discuss **rank**() - advanced aggregation using suitable example.	MODUL3_PPT2_ADVANCED_SQL

15.	Write a note on **1. JDBC** **2. ODBC** 3. **Embedded** SQL **4. Stored procedures** 5. syntax and procedure accessing SQL from programming language **OR** What is **cursor**? With program segment, explain retrieving of tuples with embedded SQL in C **OR** What is **SQLJ**? How is it different from JDBC?	MODUL3_PPT2_ADVANCED_SQL