

Seat No: _____

Enrolment No: _____

LOK JAGRUTI KENDRA UNIVERSITY
MCA Semester – 1 Winter 2023 Exam

Subject Code: 140110103

Date: 03/10/2023

Subject Name: Relational Database Management System (RDBMS)

Duration: 02:30 Hours

Total Marks: 50

Instructions:

1. Attempt all the questions
2. Figures on the right indicate the marks.
3. Draw the figures and give suitable examples as and where necessary.

Q - 1 Answer The Following Questions.

- | | | |
|----|---|---|
| 1. | Define the term: Relational Database | 1 |
| 2. | What are the two types of data dictionary are there? Write one difference between them. | 1 |
| 3. | List the different types of users of the database. | 1 |
| 4. | What is data independence? Explain two kinds of data independence? | 3 |
| 5. | Explain any 4 components of database system environment | 4 |

OR

- | | | |
|----|--|---|
| 5. | Discuss disadvantages of file system over database system. | 4 |
|----|--|---|

Q - 2 Answer The Following Questions.

- | | | |
|-----|--|---|
| 6. | Define weak Entity with example. | 1 |
| 7. | Explain relationship type attribute with example. | 1 |
| 8. | Give an example for unary relationship. | 1 |
| 9. | Explain total and partial participation with suitable example. | 3 |
| 10. | Explain different types of attributes with suitable examples. | 4 |

OR

- | | | |
|-----|--|---|
| 10. | Draw an ER Diagram using the following statements. In a hospital there are three different types of doctors (trainee, visitor and permanent) are there to checkup the patients admitted in the hospital. There are rooms in the hospital where patients are admitted and looked after by the nurse. Recipient maintains the records for each patient. Patient has to pay the bill against the medicines prescribed by the doctor and room changes. | 4 |
|-----|--|---|

Q - 3 Answer The Following Questions.

11. Define the first normal form to normalize the database. 1
12. Define the term Cardinality 1
13. Define "Deletion Anomalies" with suitable example. 1
14. Normalize the given relation: BRANCH (Branch#, Branch_Addr, ISBN, Title, Author, Publisher, Num_copies) and give explanation for decomposition of the relation to convert it into 2nd normal form. 3

Consider few functional dependancies like Branch# -> ISBN, ISBN -> Title, {Branch#, ISBN} -> Num_Copies

15. Convert the following database schema in 3NF. 4

Emp (SSN, Birth_Date, Department, Proj_Manager, Proj_Handled)

Here it is to be assumes that one employee will work for one department only but can handle multiple projects and for each project there with be a project manager(another employee from same or different department).

OR

15. Convert the following relation into 3NF and then BCNF. Explain the difference between both normal forms. 4

R = {Property_ID, City, Plot_No, Area, Price}

Functional Dependencies are given as below:

FD1: Property_ID -> {City, Plot_No, Area, Price}

FD2: {City, Plot_No} -> {Property_ID, Area, Price}

FD3: Area -> Price

FD4: Area -> City

Q - 4 Answer The Following Questions.

16. Write a syntax to create a View 1
17. What is the use of "Order By" clause in SQL? Explain with suitable examples. 1
18. Explain To_Date() functions with examples. 1
19. Write the syntax for "Delete" and "Truncate" command in SQL. Also differentiate between them. 3
20. Consider the below given relations and write SQL statement for each of the following query 4

CUSTOMER (CNO, CNAME, GENDER, CITY, PHONE)

ITEM (INO, INAME, COLOR, WEIGHT, PRICE)

ORDER (OID, CNO, INO, ODATE, QTY)

- 1) Display the customer name & phone whose city is “Surat”.
- 2) Display name and price of all items whose color is ‘green’ and weight is more than 10.
- 3) Display oid, odate, cname, iname of all the orders.
- 4) Find all item numbers ordered by customer ‘Jeet’.

OR

20. Use the following tables and solve below given queries. 4

BOOK_CATALOG (book_code, title, ISBN_No, Publisher_Name, yr_of_release, total_copies)

MEMBER (member_code, member_name, mem_ship_dt)

ISSUE (Issue_id, member_code, book_code, issue_date, issue_ret_dt)

1. Display the book details which contain ‘Database’ somewhere in the book title.
2. Display the member and book details for books issued between 1st January 2023 and 30th March 2023
3. Display book details whose all copies are issued
4. Display the book details of ‘Pearson’ publications

Q - 5 Answer The Following Questions.

21. Define two important use of trigger. 1
22. Write an important difference between procedure and function in PLSQL. 1
23. Give any two example of in-built exceptions in PLSQL. 1
24. Draw and explain the transition state diagram of a Transaction. 3
25. Write a correct syntax to create a procedure to increment the salary of all employees by 5%. Consider the relation EMP (ID, Name, DOJ, Salary) 4

OR

25. What is a Cursor? Mention cursor attributes used in PLSQL block. 4
