Unit 8: Database Management System

Assignment Solutions

Multiple-Choice Questions (MCQs)

1. Which of the following is an example of redundancy in a database?
   a. Storing the same customer address in multiple tables
   b. Designing a database schema
   c. Writing a query to retrieve customer names
   d. Defining a primary key

   Ans. a

2. Which of the following is not a database object in LibreOffice Base?
   a. Tables
   b. Queries
   c. Reports
   d. Slides

   Ans. d

3. Which view in LibreOffice Base allows you to add, rename, or change the data type of fields in a table?
   a. Data View
   b. Design View
   c. Form View
   d. Report View

   Ans. b

4. Which of the following statement retrieves zero or more rows from one or more database tables or views?
   a. UPDATE
   b. DELETE
   c. SELECT
   d. DISPLAY

   Ans. c

5. Which of the following is not a method for creating a Form in LibreOffice Base?
   a. Form Wizard
   b. Design View
   c. Report Wizard
   d. Query Wizard

   Ans. c

Very Short Answer Questions

1. Define attribute in the context of a database.

   Ans. An attribute is a property or characteristic of a table field, such as Name, Age, or Roll Number.

2. Name any two data types available in LibreOffice Base.

   Ans. Text and Number.

3. Name any two tasks that can be done while editing a table in Design View.

   Ans. Changing data types and adding or renaming fields.

4. Give one example of a calculated field in a query.

   Ans. Total = Qty × Price.

5. Which property of a field ensures each record in a table is unique?

   Ans. Primary Key.

Short Answer Questions-I

1. What role do queries play in database systems?

   Ans. Queries retrieve, filter, and analyse data stored in tables. They help users extract only the required information based on specific conditions.

2. What is the purpose of the Tasks Pane in LibreOffice Base?

   Ans. The Tasks Pane displays available actions for tables, queries, forms, and reports, helping users create and manage database objects easily.

3. What risks are involved when changing a field's data type?

   Ans. It may cause data loss or errors if the new data type is incompatible with existing values. Related queries or forms may also break.

4. How does the Query Wizard help beginners in creating queries?

   Ans. It guides users step-by-step to select fields, apply conditions, and sort data, allowing them to create queries without SQL knowledge.

5. How can you verify that records entered through a Form are saved in the database?

   Ans. By opening the related table and checking whether the newly entered record appears there.

Short Answer Questions-II

1. Why is it important to maintain accuracy and consistency in databases?

Ans. Accuracy and consistency ensure that database information is correct, reliable, and meaningful. When data remains accurate, queries and reports produce valid results. Consistency across tables prevents duplication, contradictions, and incorrect references. It also preserves data integrity when multiple users work on the same database. Reliable data supports effective decision-making, smooth operations, and proper functioning of relationships between connected tables.

2. What steps are required to delete a record from a table?

Ans. To delete a record, open the table and locate the specific row you wish to remove. Select the entire record by clicking its row header, then press the Delete key. A confirmation message usually appears to prevent accidental removal. Once confirmed, the record is permanently deleted from the table. Users must be cautious, as deleted data cannot be recovered and may affect related queries, forms, or reports.

3. Why is it important to maintain consistency when working with related tables?

Ans. Maintaining consistency ensures that the relationships between tables, especially primary and foreign key links, stay valid. If related data changes incorrectly, it may lead to broken references or orphan records. Consistent updates safeguard referential integrity and ensure that queries, forms, and reports using these relationships produce meaningful output. Without consistency, users may face errors, incomplete results, and unreliable database behaviour.

4. How can queries improve the efficiency of working with large datasets?

Ans. Queries enhance efficiency by quickly extracting only the required information from large datasets. Instead of checking records manually, users can apply filters and conditions to get instant results. Queries also support sorting, grouping, calculations, and summarisation, making data analysis faster and more accurate. They save time, reduce human error, and provide customised views that help users understand data better and work more productively.

5. List two differences between Forms and Reports.

Ans. Forms are designed for entering, editing, and viewing data interactively, using controls such as text boxes, buttons, and dropdown lists. Reports, however, display data in a formatted, printable layout for presentation or documentation. Forms allow user interaction and modification of records, while reports focus solely on presenting information clearly without editing. Both tools serve different purposes but together help manage and understand database information.

Long Answer Questions

1. Define queries and discuss their different types with suitable examples.

Ans. Queries are commands used to retrieve, analyse, and manipulate data in a database. They help users extract meaningful information from large datasets by applying conditions, sorting, or calculations. A Select Query retrieves specific records, such as displaying students scoring above 85%. Action Queries modify data automatically, including Update Queries for editing multiple records, Delete Queries for removing outdated entries, and Append Queries for adding new data. Parameter Queries prompt users for input at runtime, such as entering a customer name to display their order details. Queries reduce manual effort, save time, minimise errors, and provide customised data views essential for decision-making, analysis, and reporting in database systems.

2. How can users enter, edit, and delete data in a table? Discuss the steps and precautions that should be taken while performing these operations.

Ans. Users can enter data by opening the table and typing values into the blank row at the end. Each value must match the field's data type. To edit data, users click the required cell, modify the content, and press Enter to save the updated value. To delete a record, the user selects the entire row and presses Delete, confirming the action when prompted. Precautions include ensuring data accuracy before saving, avoiding accidental deletion, verifying that related tables are not affected, and keeping backups before major changes. Careful editing and deletion prevent data loss and maintain referential integrity, ensuring the database remains reliable and functional.

3. Compare and contrast the effects of deleting a field versus deleting a table in LibreOffice Base.

Ans. Deleting a field removes one column from a table along with all the values stored in it. This affects only that particular category of data, while the rest of the table remains usable. However, queries, forms, or reports referencing that field may stop working and require adjustments. In contrast, deleting an entire table permanently erases its structure and all records. This action also breaks relationships and disables any forms, reports, or queries linked to the table. While deleting a field results in partial data loss, deleting a table causes complete and irreversible loss unless a backup exists. Therefore, deleting a table has far more serious consequences, requiring careful planning and verification to avoid system-wide errors.

4. a. Structure of a table "Orders" is given below. Suggest a suitable data type of for each column.

Table: Orders			
OrderID	Order_date	CustomerID	Amount
A_101	12/12/19	C3445	1200.00
A_202	11/09/19	C1245	3456.00
A_402	09/07/19	C2121	2312.00

b. Consider the following table "Books".

Table: Books				
BkID	BkName	Author	Qty	Price
B_101	Learning with Fun	Jacobins	5	355.00
B_103	How I Live Now	Meg Rosoff	4	400.00
B_104	I Capture the Castle	Dodie Smith	5	520.00

Table: Books				
BkID	BkName	Author	Qty	Price
B_106	Mortal Engines	Philip Reeve	4	260.00
B_110	The Kite Rider	Geraldine McCaughrean	3	270.00

Write SQL queries to:

i. Display data of all books whose quantity is more than 3.

ii. Display the total amount of all books whose price is less than 500. (Hint : amount = Qty × Price)

Ans. a. The suitable data type of for each column are:

❍ OrderID: Text

❍ Order_date: Date/Time

❍ CustomerID: Text

❍ Amount: Numeric

b. The SQL queries are:

i. SELECT * FROM Books WHERE Qty > 3;

ii. SELECT SUM(Qty * Price) FROM Books WHERE Price < 500;

5. Compare Forms and Reports in LibreOffice Base in terms of purpose, features, and user interaction.

Ans. Forms and reports serve different but essential roles in database applications. Forms are used for entering, editing, and viewing data. They provide interactive elements such as text boxes, dropdown lists, checkboxes, and buttons, making data entry accurate and user-friendly. They help restrict input errors and support guided data entry. Reports, however, are designed for presenting data in a structured, well-formatted, and printable layout. They allow grouping, sorting, summarising, and applying visual formatting to produce professional documents like statements and summaries. Reports cannot edit data; they only display it. Forms focus on user interaction and updating records, while reports focus on presenting final, readable output. Together, they make databases more functional, organised, and useful for both users and decision-makers.