UNIT-3 DATABASE MANAGEMENT SYSTEM
Question- Answers

Session 1: Appreciate Concept of Database Management System

Fillups

1. A **database** is an organized collection of data.
2. A **DBMS** is a software package that can be used for creating and managing databases.
3. A **RDBMS** is a database management system that is based on the relational model.
4. Three popular DBMS software are **Oracle**, **MY SQL**, & **MS Access**.
5. A **Primary key** is a unique value that identifies a row in a table.
6. Composite Key is a combination of **multiple** columns.

Q1. What is a database?
Ans: – A database is an organised collection of interrelated information of a specific type. In the database, the information is stored in a structured manner that makes it easy to find information.

Q2. What is Database Management System (DBMS)?
Ans: – A Database Management System (DBMS) is an application program that is used to create and maintain the database. It enables users to store, modify and view information from a database as per the requirements. It provides a systematic approach 0to create, retrieve, update and manage information in a database. DBMS also prevents databases from unauthorised access. It is quite easy and simple to use DBMS.

Q3.How is data organized in a database?
Ans: – There are two way to organized data in database –
a. Flat File – It stores the data in a single table and it is suitable for small amounts of data.E.g.
b. Relational – It stores the data in a multiple table and all the tables are connected to each other using a common field with the help of relationships.

Q4.What do you mean by Database Servers?
Ans: – Database servers are powerful computers that store and manage data on a server. This type of server is dedicated to a single purpose and helps to hold the database and run only DBMS and related software.
Q5. Give the Advantages of database?
Ans: – Advantages of database are –
a. Reduce Data Redundancy – When the same data set is stored in two or more locations, this is referred to as data redundancy. As a result, this helps in the protection of duplicate data in a database.
b. Sharing of Data – Databases can share the data with multiple users at a time. There are multiple levels of authorization to access the data, and as a result, the data can only be shared with those who are permitted.
c. Data Integrity – The term "data integrity" refers to the accuracy and consistency of the data in the database. Data integrity also refers to data safety.
d. Data Security – You know that data is very important, databases give privileges to authorized users and allow them to access the database using username and password.
e. Privacy – A database's privacy rule says that only authorized users are permitted to access the database in accordance with its privacy constraints. For example – if you log in your Gmail account then you will see your email only, you will not see any other account email.
f. Backup and Recovery – Backup and recovery are handled automatically by the Database Management System.

g. Data Consistency – Data consistency ensures the modification in the data will be the same for all the users who are accessing the database. For example if you have registered a train ticket from IRCTC website then whatever changes are there it will be the same for all the users who are trying to reserve the ticket.

Q6. What are the key features of a database?
Ans: – Some of the key features of database are –
a. Multiple table can be store in a single database
b. Database can share the data to multiple users
c. Database can create backups automatically
d. Database save storage space
e. Large amount of data can be managed by database
f. Each table in a database contains separate information
g. Provides high level security

Q7. What is RDBMS?
Ans: – RDBMS stands for Relational Database Management System is an upgraded version of DBMS, RDBMS stores the data in the form of a table. In RDBMS multiple tables can be linked together, and support multiple users to access the database.

Q8. What different types of keys are available in RDBMS?
Ans: – The different keys available in RDBMS are –
a. Primary Key (PK) – A primary key is a unique value that identifies a row in a table. If the primary key is defined to any table column it means the duplication will be not allowed.
b. Composite Primary Key – When a primary key is applied to one or more columns in the same table is known as Composite Primary Key.
c. Foreign Key (FK) – By default columns are foreign key, foreign key points to the primary key of another table.

Session 2: Create and Edit tables using wizard & SQL commands

Assessment – Fill in the blanks.

1. A table is a set of data elements that is organized using a model of vertical and horizontal __.
2. A _ is a set of data values of a particular type, one for each row of the table.
3. A _ represents a single, data item in a table.
4. _ are used to identify which type of data we are going to store in the database.
5. There are ___ ways to create a table.
6. Field properties can be set in both the and _ .

Q9. What are the different database objects?
Answer –
a. Table – A table is a collection of data components structured in the form of vertical columns and horizontal rows.
b. Columns / Fields / Attributes – Columns or Fields or Attributes all are the same, A column is a collection of data values of a single data type, one for each row in a table. It is also known as the heading of the column.

c. Rows / Records / Tuples – A row, also known as a Record or Tuple, is a single data item in a table. A database table can be represented as a series of rows and columns or fields. Each row in a table represents a set of related data, and each row has the same structure.

Q10. What are data types?
Ans: – Datatypes are used to define the type of data that will be stored in the database. Data types in the OpenOffice base are classified into five types.
a. Numeric Types – Numeric data types are used to describe numerical values for fields in a database table. Numeric data types used for numbers and decimals.
Some of the important numeric data types are –

a. Boolean
b. Integer
c. Numeric
d. Decimal
e. Float
f. double

b. Alphanumeric Types – Alphanumeric data types are used to describe character values for fields in a database.
Some of the important alphanumeric data types are –

a. Longvarchar
b. Char
c. Varchar
d. Varchar_ignorecase

c. Binary Types – For storing data in binary formats, binary data types are used. Binary data types in a database can be used to store images, music files, and so on.
Some of the important Binary data types are –

a. Varbinary
b. Binary
c. Longvarbinary

d. Date time – Date and time data types are used to describe date and time values for fields in a database table.
Some of the important Date time data types are –

a. Date
b. Time
c. Timestamp

Q11. In how many ways tables can be created in Base?
Ans: – There are two different ways to creating the table in database –

a. Using Design View
b. Using Wizard

Q12. Define the structure of a table.
Ans: – A table is a collection of data components structured in the form of vertical columns and horizontal rows.

Q13. Differentiate between Tuples and Attributes of a table.
Ans: – Tuple is a single data item in a table. A database table can be represented as a series of rows and columns or fields. An attribute is a collection of data values of a single data type, one for each row in a table.

Session 3: Perform Operations on Table

Assessment – Fill in the blanks.

1. The types of languages used for creating and manipulating the data in the Database are ___ & ___.
2. A _____ is a standard for commands that define the different structures in a database.
3. A ___ is a language that enables users to access and manipulate data in a database.
4. A _ is a part of DML involving information retrieval only.
5. A popular data manipulation language is _____.
6. ___ are the basic building blocks of a database.
7. There are ___ types of Relationships in a table.

Q14. What is referential Integrity?
Ans: – Referential integrity is used to keep data maintained, accurate and consistent.
Data in Base can be connected between two or more tables using primary key and foreign key constraints.
Referential integrity helps to –
a. If there is no connected record in the main key table, records are added to a related table.
b. Changing values in a primary if there are any dependent records in the linked table
c. If there are any matching linked records in an associated table, records from a primary key table are deleted.

Q15. What is the advantage of relationships between two tables?
Ans: – Advantage of relationships between two tables are –
a. Save time as there is no need to enter the same data in separate tables.
b. Reduce data-entry errors.
c. Summarize data from related tables.

Q16. What is the file extension for databases created using OpenOffice.Org Base?
Ans: – Extension for OpenOffice base is .odb.

Q17. List any three file formats that can be managed using OpenOffice.Org Base?
Ans: – The three file formats are –
a. .odt – This file format use for create digital document file
b. .odd – This file format use for create spreadsheet
c. .odp – This file format use for creating presentation file

Q18. How many types of relationships can be created in Base? Explain each of the them.
Ans: – There are three types of relationships –
a. One to One – Both tables in this relationship must have primary key columns.
b. One to Many or Many to One – One of the tables in this relationship must have a primary key column.
c. Many to Many – The primary key column is not present in any of the tables in this relationship.

Q19. What do you mean by Sorting? In how many ways it can be done?
Ans: – Sorting means arranging the data in ascending or descending order.
The two way to arranging the data is –
a. Ascending
b. Descending

Q20. Explain Referential Integrity with the help of an example.
Ans: – Referential integrity is used to keep data maintained, accurate and consistent.
Data in Base can be connected between two or more tables using primary key and foreign key constraints.
For example – Suppose there is two table "Student_details" and "fee_details",
in the student_detils table fields are –
Grno, Student_name, Address, phone_number (here Grno is primary key)
In the Fee_details table fields are –
Grno, Fee_date, Amount (here Grno is foregn key)
Here, both have a common field "Grno" this is known as referential Integrity.

Session 4: Retrieve data using Query

Assessment – Fill in the blanks.

1. A _ helps the user to systematically store information in the database.
2. A ___ enables users to view, enter, and change data directly in database objects such as tables.
3. _ statement retrieves zero or more rows from one or more database tables or database views.
4. By default, data is arranged in _ order using ORDER BY clause.
5. ___ statement is used for modifying records in a database.
6. ___ statement is used to remove one or more records in a Database.

Q21. How many types of language are there in the database?
Ans: – Three are two types of languages –
DDL (Data definition language) – Data definition language is used to design and modify the structure of a database.
Common DDL commands are
a. Create – This command is used to create database
b. Alter – This command is used to modify the database.
c. Drop – This command is used to delete database tables.
DML (Data manipulation language) – Data manipulation language provides commands for manipulating data in databases.
Common DML commands are
a. Select – This command is used to display information from the database.
b. Insert – This command is used to insert new records in the database.
c. Delete – This command is used to delete records from the database.
d. Update – This command is used to modify records in the database.

Q22. Name DML commands.
Ans: – Data manipulation language (DML) access and manipulate data in existing tables.
Name of DML commands –
a. Select
b. Insert
c. Update
d. Delete

Q23. What is the purpose of using queries?
Ans: – Queries are commands that describe the data structure as well as manipulate the data in the database. The purpose of a query is to do calculations, integrate data from many tables, and add, alter, or delete data from a database.

Q24. Which clause of Select statement helps to display specific data?
Ans: – Where clause is used to display specific data from the database.

Q25. Differentiate between Where clause and Orderby clause of SQL statements.
Ans: – Where clause is used to display specific data from the database and Orderby used to display data in ascending order or descending order.

Q26. State the purpose of Update Command with the help of an example.
Ans: – The update statement is used to modify records in the table. Example of update command is – Update Student_details set Location = 'Pune' where Rollno = 10;

Q27. Consider the following table "Teachers"

Rollno	Student_Name	DOB	Address	Mobile_no	Gender	Percentage
1	Jugal	10/01/2003	Mumbai	5555555555	M	98
2.	Pratigya	24/03/2002	Pune	4444444444	F	82
3	Sandeep	12/12/2003	Delhi	8888888888	M	91
4	Sangeeta	01/07/2004	Banglore	6666666666	F	96
5	Satti	05/09/2002	Mumbai	7777777777	M	89

Write SQL commands:
a. To display all the information from the table whose address is 'Mumbai'.
Ans: – Select * from students where address = "Mumbai";
b. To list the details of all the students whose percentage is between 90 to 100.
Ans: – Select * from students where percentage >= 90 and percentage <= 100;
c. To display the name of all the students whose gender is Female.
Ans: – Select Subject from students where Gender = 'F';
d. To display the list of names of all the students in alphabetical order.
Ans: – Select * from students order by Student_name;
Q28. Write the SQL commands to answer the queries based on Fabric table

FabricID	Fname	Type	Disc
F001	Shirt	Woolen	10
F002	Suit	Cotton	20
F003	Tunic	Cotton	10
F004	Jeans	Denim	5

a. Write a query for insert the following record
("F005", "Kurta", "Woollen",5)
Ans: – insert into Fabric values ('F005', 'Kurta', 'Woolen',5);
b. Write a query to display only those fabric whose disc is more than 10
Ans: – select * from Fabric where Disc>10;

c. To display those record whose type is 'Woolen'
Ans: – select * from Fabric where type = 'Woolen';
d. To modify the fabric shirt by increasing discount by 10
Ans: – update fabric set Disc = Disc + 10 where Fname = 'Shirt';
e. To delete the record of fabric F003 from table
Ans: – delete from Fabric where FabricID ='F003';
Q29. Consider the following Vendor table and write the queries

VendorID	VName	DateofRegistration	Location
V001	Mother Dairy	20-01-2009	Delhi
V002	Havmor	01-04-2015	Gujrat
V003	Amul	12-05-2012	Kolkata
V004	Kwality Walls	15-10-2013	Mumbai

a. Write a Query to display all records
Ans: – Select * from Vendor;
b. Write a Query to add a new row with the following details („V005", „Vadilal", „2010-03-20", „Pune")
Ans: – Insert into Vendor values ("V005", "Vadilal", "2010-03-20", "Pune");
c. Write a query to modify the location of V003 from Kolkata to Gujrat
Ans: – Update Vendor Set location= "Gujrat" Where location= "Kolkata";
Q30. Consider the following table "ITEM":

Itemno	Iname	Price	Quantity
11	Soap	40	80
22	Powder	80	30
33	Face cream	250	25
44	Shampoo	120	100
55	Soap box	20	50

a. Display the total amount of each item. The amount must be calculated as the price multiplied by quantity for each item.
Ans: – Select price * quantity from item;
b. Display the details of items whose price is less than 50.
Ans: – Select * from item where price < 50;
Q31. Identify the columns and data types of a table: Airlines. Mention at least four columns with data type.
Answer –

Columns	**Data type**
Flight No	**Text**
No.of Passengers	**Integer**
Airlines	**Text**
Arrival_Time	**Date/Time**
Departure_Time	**Date/Time**
Fares	**Float**

Q32. Identify the columns and data types of a table: Students. Mention at least four columns with data type.

Answer –

Columns	**Data type**
RollNo	**Integer**
Student_name	**Varchar(20)**
Father_name	**Varchar(20)**
Mother_name	**Varchar(20)**
Address	**Varchar(50)**
DOB	**Date**

Session 5: Create forms and reports using wizard

Assessment – Fill in the blanks.

1. To create a form you need to select _ option available under Database section.
2. A ___ is helps to collect specific information from the pool of data in the database.
3. ___ is used to display the display the summary of data.
4. _ are the interfaces with which the user interacts.
5. Data from multiple tables can be stored in _.

Q33. Why there is a need to create Forms?

Ans: – A form allows the user to enter information into a database in a systematic manner. It is a user-defined interface that allows users to see, enter, and edit data directly in database.

Q34. What is the purpose of creating Reports?

Ans: – Reports help to present the data in proper manner which is stored in the database, It also displays the data in summary format.

Q35. What are the prerequisites to create a Form and Reports?

Answer –

Forms –

a. Forms help or manage to store data in a systematic format.
b. The prerequisites to create a form would be –
c. Add all the necessary fields in the form
d. Make the connection between form and the table

Reports –

a. Reports display the data in a summarized manner.
b. The prerequisites to create a report would be –
c. Data
d. Data source

Q36. Differentiate between Forms and Reports.

Answer –

Form

a. Forms are used to store the data in the semantic way
b. Edit, delete & modify can be easily managed
c. Auto calculation can be done easily

Report

a. Report display the data in the presenting format
b. Report can display all the record from the table

c. Edit, delete & modification cannot be done through report
d. You can take printout with the help of report

Q37. Can a form display data from queries?
Ans: – Yes form can display the data from queries, with the help of query you can filter the data and you can display in the form.

Q38. In how many ways Forms and Reports can be created in a database?
Ans: – There are two ways to create a form and report in the database.
a. Using Wizard
b. Using Design View

Q39. Discuss the components of a database.
Ans. A database consists of several components. Each component plays an important role in the database system environment.
The major components of database are as follows:

(i) Data: It is raw numbers, characters or facts represented by value. Most of the organisations generate, store and process large amount of data. The data acts as a bridge between the hardware and the software. Data may be of different types such as User data, Metadata and Application Metadata.

(ii) Software: It is a set of programs that lies between the stored data and the users of database. It is used to control and manage the overall computerised database. It uses different types of software such as MySQL,Oracle, etc.

(iii) Hardware: It is the physical aspect of computer. telecommunication and database, which consists of the secondary storage devices such as magnetic disks, optical discs etc, on which data is stored.

(iv) Users: It is the person, who needs information from the database to carry out its primary business responsibilities.

The various types of users which can access the database system are as follows:

(a) Database Administrator (DBA): A person, who is responsible for managing or establishing policies for the maintenance and handling the overall database management system is called DBA

(b) Application Programmers: The people, who write application programs in programming languages to interact and manipulate the database are called application programmers.

(c) End-user: A person, who interacts with the database system to perform different operations on the database like inserting, deleting etc. through menus or forms.