1. DataBase Concepts.

(Marks:-18)

1) Full form of the DBMS?

Ans.   DBMS:- DataBase Management System.

2) Full form of the HTML?

Ans.   HTML:-Hyper Text Markup Language.

3) Data:-

Ans.   "Data is nothing but one kind of raw materials which generate information."

4) DBMS:-

Ans.   DBMS stand for "DataBase Management System "It consists (સમાવેશ) of set of data and set of program which access (વપરાશ) those data.

Or

          DBMS stand for "DataBase Management System "is the software that handles all access to the database.

5) DataBase concerts:-

Ans.   "A DataBase system is basically just a computerized record keeping system."

6) DataBase:-

Ans.   DataBase is "collection of the Data".

7) DataBase Concerts:-

Ans.　　　　　　A DataBase is a collection of related information stored so that it is available for many users for different purpose.

Ex.

(1) Add new file to the DataBase.
(2) Insert data into DataBase file.
(3) Delete data from DataBase File.
(4) Change data in DataBase file.
(5) Remove data from DataBase file.

8) Comparison between Traditional File V/ S DBMS.　　　　(4 Marks)

Ans.

Type.	No.	Traditional File.	DBMS.
Size	1.	Traditional file is a small system.	DBMS is a large system.
Uses	2.	Traditional use in a few file.	DBMS use in many file.
Structure	3.	Traditional is a simple structure.	DBMS is a complex structure.
Security	4.	Traditional file not security.	DBMS is security.
Who users	5.	In this file use only single user.	DBMS use for many users.
Transitions	6.	In this system transition aren't possible.	DBMS transition are possible, like-Insert, Add, Change, Delete, Remove etc.
Location	7.	Traditional file save in temporary location.	DBMS is a permanent DataBase location
Ex.	8.	In Traditional file Ex. C++.	DBMS file is in Ex. Oracle.

9) Characteristics of Data in DataBase:-

Ans.

(1) All user access the data from the same resource.

(2) Quick retrieval of the data.

(3) Reduce application development time.

(4) Flexibly in change of the data is structure.

(5) Up to date information availability.

(6) Authorized access security of the data.

(7) Provide backup and recovery procedure.

10) Components of DataBase system environment

Or

Explain of Components of DBMS

Ans.

Application Program   DataBase   End User
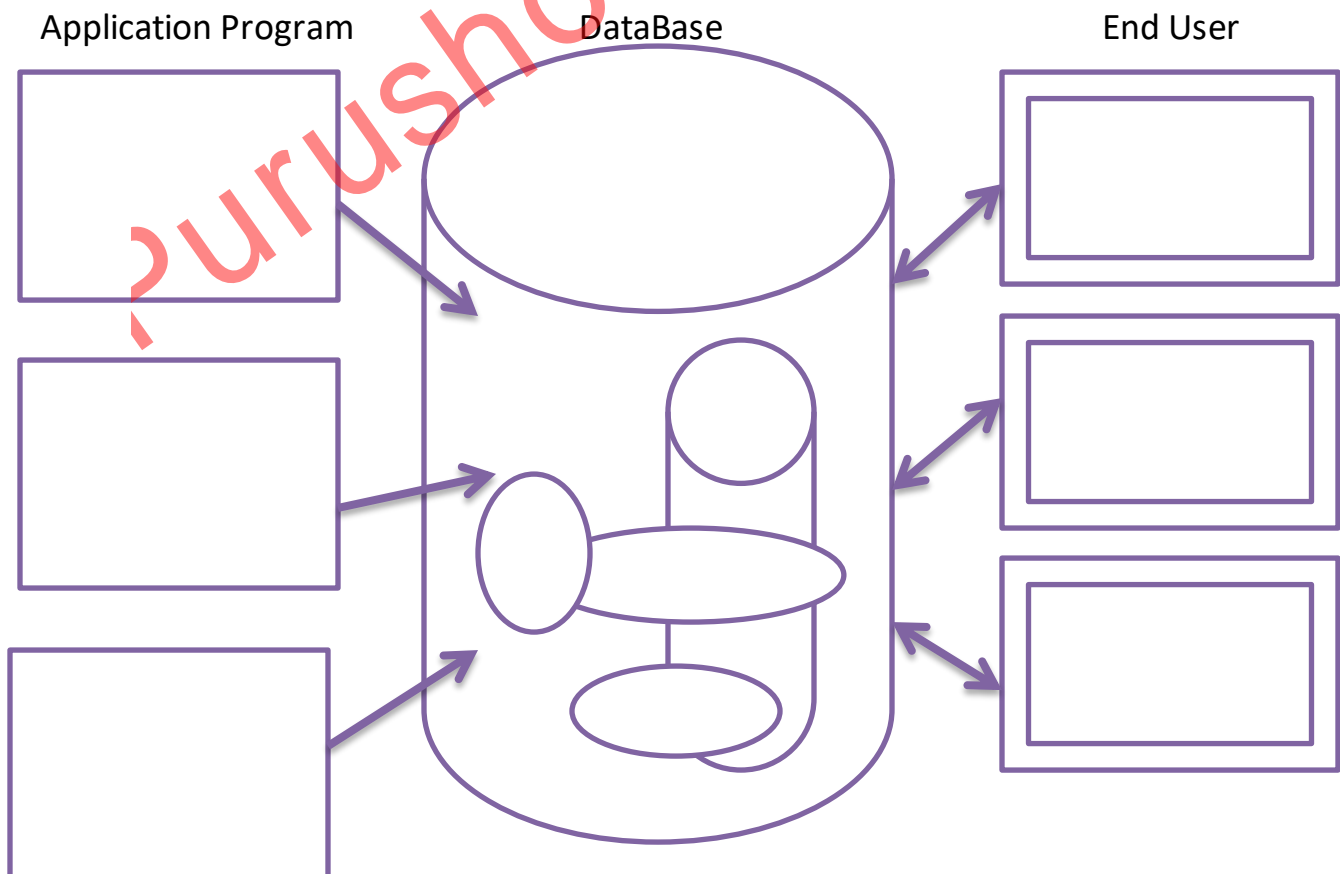
➢ There are four components of DBMS:-

(1)Data.   (2) Software.
(3)Hardware. (4) User.

(1)Data:-

"Data is nothing, but one kind of raw materials which generate information. "There are two types of system which access this Data.

    I. Single user system.
   II. Multiple user system.

(1)   <u>Single user system :-</u>

In which at most user can access a data at of time.

(2)   <u>Multi user system:-</u>

In which many user can access from different places.

➢ There are two types of the Data :-

(1) Integrated.
(2) Shared.

(1)   <u>Integrated :-</u>

Integrated means that we remove the redundancy from the data base and create other file then after using primary key and reference key we integrated two or more files is known as integrated of the database.

Ex.

(1)   A given student data base contents as No, Name, City, DOB, Class name etc.

Here now we create another database class with class no. and class name field.

Common Table

S.No.	S.Name	city	DOB	Class
1	Patel Mul.	HMT	28/09/1999	PGDCA
2	Patel Yash.	HMT	09/11/1999	TYBCA
3	Raval Yash.	HMT	16/02/1999	PGDCA
10	Soni Surbhi.	HMT	21/10/1999	PGDCA
12	Shah Yashvi	HMT	14/10/1999	FYBCA
20	Patel Param	HMT	04/10/1999	SYBCA

Class Table

Class No.	Class Name.
1	FYBCA
2	SYBCA
3	TYBCA
4	PGDCA

Student Table

S.No.	S.Name	City	DOB	Class no.
1	Patel Mul.	HMT	28/09/1999	4
2	Patel Yash.	HMT	09/11/1999	3
3	Raval Yash.	HMT	16/02/1999	4
10	Soni Surbhi.	HMT	21/10/1999	4
12	Shah Yashvi	HMT	14/10/1999	1
20	Patel Param	HMT	04/10/1999	2

(2)**Shared**:-

Shared mean that individual pieces of the data in the database can be shared among different user each of those user can have access to the save piece of data for different purpose.

(2)Hardware:-

There are two types of hardware:-

A. Storage Device.

B. System Processer or Hardware Processer.

A. Storage Device:-

The storage device like Hard disk, Magnetic disk, Floppy disk etc. It is used to stored hold data.

B. <u>System processer or Hardware processer:-</u>

It used like main memory for supporting the execution of the Database system.

(3)Software:-

The data are physically store software is a interface between user and DBMS system. The physically DataBase is sale and user of system is layer of software which are usually all request for the user to access the database which are handle by DBMS.DBMS is most important software component overall system.

(4)Users:-

There are three types of users:-

  I. Application Programmer.
  II. End user.
  III. DBA.

I. Application Programmer:-

Application programmers are responsible for develop of writing Database programmers in some programming language such as – <u>Cobalt, C, Java, C++ etc</u>.

The purpose of those programmers allowed end user to access the DataBase.

II. **End User:-**

End user is a person which is use the DBMS software for Accessing database.

End user inter with the system from online work station or terminals.

End user use Query language for generating report and getting required.

III. **DBA:-**

"DBA means DataBase Administrator." DBA is technical person which responsible for managing the hold DataBase and also responsible for recovery of those Database after occurring failure so we can say that DBA responsible implemental technical decision.

11) Function of DBMS:-

Ans.

➢ Data Dictionary Management
➢ Data Store Management
➢ Data Transformation and Presentation
➢ Security Management
➢ Multi user access control
➢ Backup and recovery management

➢ Data Integrity management

➢ Data Access language & Application programming interface

(1)Data Dictionary Management:-

Data dictionary stores information on definition of the data and the relationship that exit among the data.

DBMS use data dictionary to look-up data their type, size and relationship with other data.

The application programmer does not have to code such complex structural information.

DBMS provide data abstraction and remove structure and data independence from the system.

(2)Data Store Management:-

DBMS create the structure required for the storage of the data.

We do not need to defined and programmer the physically data charters.

DBMS not only provided storage of the data but also Related data entry from or screen deification report deification. Data validation rules of the Data.

(3)Data Transformation and presentation:-

DBMS transform the entered data to confirm to the data structure that are required to store the data.

By maintaining data independence the DBMS translate logical request for the data into that physically located and preview the request data.

DBMS format the physically retrieved the data make it confirm to the user logical exposition.

(4)Security Management:-

DBMS create security system that en force user security and data privacy in the DataBase.

Security rules decided who can access the data? What data can be accessed? What operation the user can perform?

In multiple user environments this is especially important single many user access the database simultaneously (વારંવાર).

(5)Multi user access control:-

With the help of data integrity and data consistency of DBMS use algorithm to ensure multiple users can access the data con-currently and still guarantee integrity DataBase.

(6) Backup and Recovery Management:-

For the safety of the Data DBMS provide this type of facilities such as backup and recovery. The recovery management deals with recovery of the DataBase after a failure such a bad factor in the Disk a power failure and so one.

(7) Data Integrity Management:-

The DBMS enforce integrity rules for minimizing Data. Redundancy and maximizing data consistency.

(8) Data access language &

Application programing interface:-

DBMS support Data access language, Query language to access Data.

i. **DDl** :- Data Deification Language.
ii. **DCL**:- Data Control Language.
iii. **DML**:- Data Manipulate Language.
iv. **DQL**:- Data Query Language.

12) Advantages of DBMS.

Ans.

- ✓ The data can be shared.
- ✓ Redundancy can be removed.
- ✓ Security can be maintained.

- ✓ Speed
- ✓ Inconsistency can be removed.
- ✓ Integrity can be maintained.
- ✓ Transformation can be provided.

I. **The Data can be shared**:-

In DBMS data can distributed between numbers of user. Data can be distributed within two more DBMS software.

II. **Redundancy can be remove:-**

We can remove duplicate data can be remove from the data.

It means we can't remove meaning full/use full information.

III. **Security can maintain:-**

In DBMS are provide username and password application to our so only authorized person can access the data. We protect our data from an authorized user.

IV. **Speed :-**

As a name suggested machine is faster than human.

Ex.

If our database has a blank record and want to find only any place like Mumbai record than human take 2-3 days where a machine take a 2-3 second so machine is faster than human.

V. **Inconsistency can be removed :-**

With help of DBMS we enter consistent data into database consistent means data can be Accurate and Correct.

Consistent= Accurate + Correct.

VI. **Integrity can be maintain:-**

Integrity means provided such kind of limitation or such kind of condition on data are helpful entering consistent and Accurate. Data store that as physically.

<div align="center">Integrity = Consistent + Accurate.</div>

VII. **Transformation can be provide:-**

Transformation is a logical unit of work it provides some kind of perform of operation on DataBase.

Ex.

You can add a new record in Database. You can update a record which are already exists in database. You can delete record from the database.

13) Disadvantages of DBMS.

Ans.

(1) Complexity backup and recovery:-

The DBMS an extremely complex piece of software.

(2) Size:-

DBMS is large piece of software so required more space to storage the DBMS software.

(3) Cost of software and hardware:-

DBMS software is costly to store the DBMS software high performances.

Hardware competent must require so increase the hardware cost.

(4) High Qualified person required to operate DBMS system

(5) Problem Associated with centralization

14) DBMS users:-

Ans.

1. **Application programmer**
2. **End user**
3. **DBA**
4. **Stand Alone user**
5. **Sophisticated end user**
6. **DataBase designers.**

4. Stand Alone user:-

Maintain personal database by using readymade Program package that provide easy to use menu based or graphical based interface.

5. Sophisticated end user:-

Include engineer, scientists and business analysts and other who throw include themselves with the facilities of the DBMS so as to impiety there application to meet there complex requirement.

6. Database designer:-

Designer identified the data to be store in the DBMS.

Choosing appropriate structure to represent and store this data under taken before the database is actually imputed and polluted data.

15)Role of DBA <u>Or</u> Explain major of role of DBA <u>Or</u> Function of DBA

Ans.

➕ There are 6 major role of DBA:-

1. **Defining the conceptual schema.**
2. **Defining the internal schema.**
3. **Communicate with user.**
4. **Defining security & integrity constraints.**
5. **Defining dump/restore schema.**
6. **Monitoring performance & represent to changing requirement [Monitoring & controlling performance].**

1. <u>**Defining the conceptual schema:-**</u>
   ~ DBA decided exactly "What" information to be stored in DataBase
   ~ This proses is usually refers to as a logical DataBase designing.

2. <u>**Defining the internal schema:-**</u>
   ~ The DBA must also deicide "How" the data is to be representing in the store DataBase.
   ~ This process is usually refer to as physically DataBase designing.

3. <u>**Communicate with user:-**</u>
   ~ It is business of DBA to co-operate with user to ensure that data which users want are available or not.

4. <u>**Defining security & integrity constraints:-**</u>
   ~ Security & integrity is part of conceptual schema.
   ~ DBA is responsible for defining authentication schema.
   ~ DBA must ensure that data which are store in database must be accurate & correct.

5. **<u>Defining dump/restore schema</u>:-**
    ~ Once database system is completed & number of transformation are successfully done DBA must ensure your data each one update.
6. **<u>Monitoring performance & represent to changing requirement [Monitoring & controlling performance]</u>:-**
    ~ For good & better performance by database DBA must monitor whole database system.
    ~ If the system are not work properly them DBA is responsible to take technical decision & to improve system performance.