CS403-Database

(Solved Subjective)

LECTURE FROM

(23 to 45)

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Question No: 1

Difference between Commit and Rollback. **(Marks 2)**

Answer:

in sql commit is used for saving the changes made in database and roll back is to roll back them , changes will not get saved in the database

Question No:2

Commonality between RAID technology and Tape **(Marks 2)**

Answer:-

Commonality between RAID technology and Tape Drive that they both are used for backup.

Question No: 3 (Marks 2)

Read the statement if incorrect rewrite in correct form.

"Hashing provides slow, time consuming data retrieve from sequential files".

Answer:- **(Page 265)**

Hashing provides rapid, non-sequential, direct access to records.

Question No: 4 (Marks 2)

How do you explain Cross Reference Matrix?

Answer:- **(Page 65)**

This is a tool available in the data dictionary and helps us in finding entities of the database and their associations.

Question No: 5 (Marks 3)

Explain Redundant Data. How Data Redundancy work in sequence file.

Answer:- **(Page 14)**

It means if different systems of an organization are using some common data then rather than storing it once and sharing it, each system stores data in separate files. This creates the problem of redundancy or wastage of storage and on the other hand the problem on inconsistency.

Question No: 6

State the basic difference between Inner join and Left Outer Join. . **(Marks 3)**

Answer:- **(Page 226 & 229)**

Inner Join : Only those rows from two tables are joined that have same value in the common attribute while In a left outer join, PROGRAM rows without a matching COURSE row appear in the result left table (i.e. the one that precedes in SQL statement) regardless of the existence of matching records in the right table.

Question No: 7

Give one example of Deadlock. **(Marks 3)**

Answer:

A simple computer-based example is as follows. Suppose a computer has three CD drives and three processes. Each of the three processes holds one of the drives. If each process now requests another drive,

the three processes will be in a deadlock. Each process will be waiting for the "CD drive released" event, which can be only caused by one of the other waiting processes. Thus, it results in a circular chain.

Question No: 8

Create unique index on "IndexNum" on Cust_Name attribute of Customer table.. (Marks 3)

Answer:-

CREATE INDEX IndexNum
ON Customer (Cust_Name)

Question No: 9

· Relate column 1 with column 2.. (Marks 5)

Column 1	Column 2
1. Sigma	A. Procedural DML lang
2. Table	B. Project operator
3. Relational Algebra	C. Select operator
4. Π	D. Relational Data Model
5. Intersection operator	E. Binary operation

Answer:-

1. Sigma C. Select operator (Page 149)
2. Table D. Relational Data Model
3. Relational Algebra A. Procedural DML lang
4. ΪΪ B. Project operator
5. Intersection operator E. Binary operation

Question No: 10

Crater a VIEW INSTRUCTOR_LIST which shows the list of instructor table with Inst_Nam and City of these instructors belong to ISLAMABAD or KARACHI.
INSTRUCTOR (Inst_ID, Imst_Name, City) (Marks 5)

Question No: 11 **(Marks 5)**

If a table 1 and table 2 have same entity and the table 1 is 20 index and the table 2 14 index. Then the sequential file access use these operations (Insertion, updation or selection) on both table. Keep in mind the above scenario and mark the below given statements correct or incorrect.

I. Insertion in table 1 take greater time than table 2
II. Updation in table 2 take greater time then table 1
III. Retrieving a record from table 1 take lesser time than table 2.

Question No: 12 (Marks 5)

Analyze the below given statements and mark as correct and incorrect and also explain.

- **Deadlock occurs when one transaction wants to read more than on object at same time.**

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- **The mechanism —Wait for Graph‖ is used to apply join on multiple.**

Answer:- (Page 320)

1. Deadlock occurs when one transaction wants to read more than on object at same time. **(Incorrect)**

Explanation: - A deadlock occurs when the first transaction has locks on the resources that the second transaction wants to modify, and the second transaction has locks on the resources that the first transaction intends to modify.

2. The mechanism —Wait for Graph¦ is used to apply join on multiple. **(Incorrect)**

Explanation: - It is used for the detection of deadlock. It consists of nodes and links. The nodes represent transaction, whereas arrowhead represents that a transaction has locked a particular data item.

Question No: 13

Name two types of anomalies?

Answer:- (Page 162)

Two type of anomalies are:

1. Insertion
2. Deletion

Question No: 14

Name types of views?

Answer:- (Page 283)

• Materialized View • Simple Views • Complex View • Dynamic Views

Question No: 15

Analyze the below given statements and mark as correct and incorrect and also explain. 1. Deadlock occurs when one transaction wants to read more than on object at same time.

Answer:- (Page 320)

The given statement is incorrect. The correct statement is A deadlock occurs when the first transaction has locks on the resources that the second transaction wants to modify, and the second transaction has locks on the resources that the first transaction intends to modify.

Question No: 16

2. The mechanism "Wait for Graph" is used to apply join on multiple.

Answer:- (Page 320)

The statement is incorrect and correct statement is

Wait – for Graph: It is used for the detection of deadlock

Question No: 17 (Marks 2)

How many ways to create a new view in your data base?

Answer:- (Page 283)

There are two ways to create a new view in your database. You can: • Create a new view from scratch. • Or, make a copy of an existing view and then modify it.

Question No: 18 (Marks 2)

Write any two similarities between Materialized views and indexes?

Answer:- (Page 290)

Materialized views are similar to indexes in several ways:

- They consume storage space.
- They must be refreshed when the data in their master tables changes.

Question No: 19. (Marks 3)

Which method is in DBMS to detect Deadlock? Briefly explain

Answer:- (Page 300)

The lock manager maintains a structure called a waits-for graph to detect deadlock cycles.

Question No: 20

Create new view as Product_list from the table PRODUCT including all the columns of the table PRODUCT? (Marks 5)

Question No: 21 (Marks 5)

Given two tables DOCTOR (D_ID,D_CONTACT) , MEDICINE(M- CODE, Description)
(i) Create unique index D_ID on DOCTOT
(ii)Create unique index on both M-CODE, Description

Answer:-

(i) CREATE UNIQUE INDEX
D_ID ON **DOCTOT**
(**D_ID,D_CONTACT**)

Answer:-

(ii)CREATE UNIQUE INDEX **D_ID**
ON **MEDICINE** (**M- CODE, Description**)

Question No: 22

What are two primary modes for taking locks (Marks 2)

Answer: (Page 319)

There are two primary modes for taking locks: optimistic and pessimistic.

Question No: 23

How minimum cardinality finding is important for relationship (Marks 2)

Answer: (Page 91)

It is very important to determine the minimum cardinality when designing a database because it defines the way a database system will be implemented.

Question No: 24

What are purpose of INPUT form (Marks 2)

Answer: (Page 246)

Input forms are especially useful when the person entering the data is not familiar with the inner workings of Microsoft Access and needs to have a guide in order to input data accurately into the appropriate fields.

Question No: 25

What are three concurrency problems (Marks 3)

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Answer:-
The lost update problem.
The uncommitted dependency problem
The inconsistent analysis problem.

Question No: 26

Define composite key (Marks 3)

Answer:-
A primary key can consist of one or more columns of a table. When two or more columns are used as a primary key, they are called a composite key.

Question No:27 (Marks 3)

What is purpose behind HAVING clause

Answer:- (Page 223)
The HAVING clause is used in combination with the GROUP BY clause. It can be used in a SELECT statement to filter the records that a GROUP BY returns. At times we want to limit the output based on the corresponding sum (or any other aggregate functions).

Question No: 28

Write down five features of VIEWS (Marks 5)

Answer: (Page 281)
1. A database view displays one or more database records on the same page.
2. A view can display some or all of the database fields.
3. Views have filters to determine which records they show.
4. Views can be sorted to control the record order and grouped to display records in related sets.
5. Views have other options such as totals and subtotals.

Question No: 29

What is purpose of VIEWS in DBMS (Marks 5)

Answer:- (Page 280,281)
Views are generally used to focus, simplify, and customize the perception each user has of the database. Views can be used as security mechanisms by allowing users to access data through the view, without granting the users permissions to directly access the underlying base tables of the view.

Most users interact with the database using the database views. A key to creating a useful database is a well-chosen set of views. Luckily, while views are powerful, they are also easy to create.

Question No: 30

Write down syntax for IN clause --5 marks

Answer:-
SELECT column_name(s)
FROM table_name
WHERE column_name IN (value1,value2,...)

Question No: 31 (Marks 5)

Differentiate Total and Partial completeness

Answer:- (Page 103)

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Total Completeness:
Total Completeness constraint exist only if we have a super type and some subtypes associated with that supertype, and the following situation exists between the super type and subtype.
All the instances of the supertype entity must be present in at one of the subtype entities, i.e.—there should be not instance of the supertype entity which does not belong to any of the subtype entity.

Partial Completeness Constraint:
This type of completeness constraint exists when it is not necessary for any supertype entity to have its entire instance set to be associated with any of the subtype entity.
This type of situation exists when we do not identify all subtype entities associated with a supertype entity, or ignore any subtype entity due to less importance of least usage in a specific scenario.

Question No: 32
What is a transaction? What are ACID properties?
Answer: (Page 291)
A transaction can be defined as an indivisible unit of work comprised of several operations, all or none of which must be performed in order to preserve data integrity. ACID properties:

Atomicity
Consistency:
Isolation:
Durability:

Question No: 33
What happened when lack of durability in transaction?
Answer:
In case of lack of durability, if the transaction programs fails, or the operating system fails, once the transaction has committed, all updates will be loss.

Question No: 34
What is alternate key?
Answer:- (Page 83)
Candidate keys which are not chosen as the primary key are known as alternate keys.

Question No: 35 (Marks 5)
How can a VIEW be used for security measures?
Answer:- (Page 280)
Views can be used as security mechanisms by allowing users to access data through the view, without granting the users permissions to directly access the underlying base tables of the view.

Question No:36
Difference between Delete and truncate commands?
Answer:-

The DELETE command is used to remove rows from a table while TRUNCATE removes all rows from a table After DELETE you need to COMMIT or ROLLBACK the transaction to make the change permanent or to undo it while In TRUNCATE The operation cannot be rolled back
IN DELETE triggers will be fired while in TRUNCATE no triggers will be fired.
TRUCATE is faster and doesn't use as much undo space as a DELETE

Question No: 37
What is the purpose of DML commands?
Answer:- (Page 200)
Data Manipulation is retrieval, insertion, deletion and modification of information from the database. A DML is a language, which enables users to access and manipulate data. The goal is to provide efficient human interaction with the system.

Question No: 38
What is serial execution?
Answer:- (Page 312)
Serial execution is an execution where transactions are executed in a sequential order, that is, one after another.

Question No: 39
What are the features of indexed serial execution?

Question No: 40
What is Unary and Ternary relationship?
Answer:- (Page 87 & 88)
Unary Relationship An ENTITY TYPE linked with itself, also called recursive relationship. Ternary Relationship A Ternary relationship is the one that involves three entities

Question No: 41 (Marks 3)
How do you select all records from the table using SQL statements? Write the syntax.
Answer:-

SELECT * FROM table_name

Question No: 42 (Marks 2)
What is the problem which occur in normalization of 1 form of normalization
Answer:- (Page 167)
There is no multi valued (repeating group) in the relation multiple values create problems in performing operations like select or join

Question No:43 (Marks 2)
Why will you prefer direct access over sequential access?
Answer:- (Page 261)

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Sequential files provide access only in a particular sequence. That does not suit many applications since it involves too much time. Some mechanism for direct access is required

Question No: 44 (marks 10)

Explain and differentiate the two types of application users:

- **Intermediate**
- **Expert**

Answer:- (Page 242)

Intermediate:-

For most systems, the majority of users fall into the intermediate category. Intermediate users know what the system does, but they often forget the details of how. This is the group you must support directly in the user interface. Fortunately, the Microsoft Windows interface provides a lot of tools for helping these users.A well-designed menu system is one of the best tools for reminding intermediate users of the system capabilities. A quick scan of the available menu items will immediately remind them of the functions available and at the same time allow them to initiate the appropriate task.

Experts:-

Expert users know what to do and how to do it. They're primarily interested in doing things quickly. The more shortcuts you can build into your system, the happier you will make this group of users. In my experience, expert users tend to be keyboard- oriented, so make sure that you provide a way to move around the system using the keyboard if you're catering to this group. Expert users also appreciate the ability to customize their working environment. Providing this functionality can be an expensive exercise, however, so you will want to carefully evaluate the benefit before including it.

Question No: 45 (Marks 3)

What type of information is stored in data dictionary?

Answer:- (Page 64)

Data dictionaries store all the various schema and file specifications and their locations. They also contain information about which programs use which data and which users are interested in which reports.

Question No: 46 (Marks 2)

What is the major benefit of HASH paritioning?

Answer:- (Page 189)

hash partitioning reduces the chances of unbalanced partitions to a large extent

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Question No: 47 (Marks 3)

What is the purpose of file protection?

Answer:- (Page 261)

When multiple users have access to files, it may be desirable to control by whom and in what ways files may be accessed. This control is known as file protection.

Question No: 48

What are database objects? (Marks 5)

Answer:-

An object database (also object-oriented database management system) is a database management system in which information is represented in the form of objects as used in object-oriented programming. Object databases are different from relational databases and belong together to the broader database management system.

Question No: 49

Write sql statement for display list of persons in table PERSON and show only that records whose first name is Ahmed and who's Last name is Ali (Marks 5)

Answer:-

```
CREATE TABLE Persons1
(
FirstName varchar(15),
LastName varchar(15),
Address varchar(15),
City varchar(15)
)

INSERT INTO Persons1
VALUES ('aslam','kashif','civil line','Karachi')

INSERT INTO Persons1
VALUES ('shahid','ali','Defence','Lahore')

INSERT INTO Persons1
VALUES ('kamran','shaheen','Shadman','Faisalabad')

INSERT INTO Persons1
VALUES ('Ahmad','Ali','Muslim Town','Multan')

INSERT INTO Persons1
VALUES ('shamas','khan','shah street','Koita')

SELECT *
FROM Persons1
WHERE FirstName='Ahmad' AND LastName='Ali'
```

Question No: 50

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Which clause is used to sort the records in the result set?

Answer:- (Page 219)

The ORDER BY clause allows you to sort the records in your result set.

Question No: 51 (Marks 5)

Application programmer as user of database systems,

Answer:- (Page 24)

Application programmers design the application according to the needs of the other users of the database in a certain environment. Application programmers are skilled people who have clear idea of the structure of the database and know clearly about the needs of the organizations.

Question No:52

Differentiate between rollback and rollforward. (Marks 5)

Answer:-

Rollback :- Undoing the changes made by a transaction before it commits or to cancel any changes to a database made during the current transaction

RollForward :- Re-doing the changes made by a transaction after it commits or to overwrite the changed calue again to ensure consistency

Question No: 53

why will you prefer delete command on drop command while deleting a table (Marks 5)

Answer:-

Drop table. it will delete complete table from th Database.it can not retrieved back.

Delete is used to deleting data from the table... Data can be retrieved using Rollback.

Question No: 54

how many number of clusters are used in database and reason of limit

Question No: 55

What is Ordering field?

Answer:-

Answer: Ordering field means to sort the cells or field in ascending or descending order.

Question No: 56 (Marks: 5)

Describe ATOMICITY as one of the properties of TRANSACTION.

Answer:

one of the ACID transaction properties. In an atomic transaction, a series of database operations either all occur, or nothing occurs. A guarantee of atomicity prevents updates to the database occurring only partially, which can cause greater problems than rejecting the whole series outright. In other words, atomicity means indivisibility and irreducibility

Question No: 57

explain data independency

Answer:- (Page 16)

Data and programs are independent of each other, so change is once has no or minimum effect on other. Data and its structure is stored in the database where as application programs manipulating this data are stored separately, the change in one does not unnecessarily effect other.

Question No: 58

two types of interface

Answer:- (Page 240)

Following are the two types of user interfaces:

• Text based

• Graphical User Interface (GUI) most commonly called as Forms

Question No: 59

Write DML statement that changes the values of one or more than one attribute based on some condition.

Answer:- (Page 208)

The UPDATE statement changes the values of one or more columns based on some condition.

Question No: 60

Describe insertion anomaly

Answer:-

insertion anomaly indicates that we cannot insert a fact about one entity until we have an additional fact about another entity. Suppose we want to store the information that the cost of car is Rs. 14,00,000, but we cannot enter this data into the relation until the data about the car is entered into the relation.

Question No: 61 (Marks: 5)

Write a query to change the "status" field in the table "name_table" against the phone 34657. Make the status as enable.

Answer:-

SYNTAX:

sp_RENAME 'TableName.[OldColumnName]' , '[NewColumnName]', 'COLUMN'

sp_RENAME ' **name_table**.[**phone**]' , '[**phNo**]', 'COLUMN'

Question No: 62

What is the purpose of IN Functions?

Answer:- (Page 218)

The IN function helps reduce the need to use multiple OR conditions. It is sued to check in a list of values.

Question No: 63

In which situation join is used?

Answer:-

The JOIN keyword is used in an SQL statement to query data from two or more tables, based on a relationship between certain columns in these tables.

Tables in a database are often related to each other with keys.

Question No: 64 (Marks: 3)

Give three reasons of partitioning in the process of denormalization.

Answer:- (Page 189)

1. Reduce workload (e.g. data access, communication costs, search space)
2. Balance workload
3. Speed up the rate of useful work (e.g. frequently accessed objects in main memory)

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Question No: 65 (Marks: 3)

Write any three factors which we consider while defining key in designing an indexed sequential file?

Answer:- (Page 263)

- Position and size
- Data type
- Index number

Question No: 66

What are locking protocols, explain?

Answer:- (Page 297)

A locking protocol is a set of rules to be followed by each transaction (and enforced by the DBMS), in order to ensure that even though actions of several transactions might be interleaved, the net effect is identical to executing all transactions in some serial order.

Question No: 67

What is rehashing?

Answer:- (Page 267)

Re-hashing schemes use a second hashing operation when there is a collision. If there is a further collision, we re-hash until an empty "slot" in the table is found. The re-hashing function can either be a new function or a re-application of the original one.

Question No: 68

In which situation self join is used?

Answer:- (Page 231)

In self join a table is joined with itself. This operation is used when a table contains the reference of itself through PK, that is, the PK and the FK are both contained in the same table supported by the referential integrity constraint.

Question No: 69 (Marks: 1)

What does RAM stand for?

Answer:-

Random access memory

Question No: 70 (Marks 2)

Define the domain of attribute?

Answer:- (Page 76)

Domain is the set of possible values that an attribute can have, that is, we specify a set of values either in the form of a range or some discrete values, and then attribute can have value out of those values.

Question No:71

Explain Secondary key and give it‟s an example.

Answer:-

An entity may have one or more choices for the primary key. Collectively these are known as candidate keys. One is selected as the primary key. Those not selected are known as secondary keys.

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For example, an employee has an employee number, a National Insurance (NI) number and an email address. If the employee number is chosen as the primary key then the NI number and email address are secondary keys. However, it is important to note that if any employee does not have a NI number or email address (i.e.: the attribute is not mandatory) then it cannot be chosen as a primary key.

Question No: 72

Three Factors when designing an indexed sequential file.

Answer:- (Page 261)

The simplest indexing structure is the single-level one: a file whose records are pair‘s key-pointer, where the pointer is the position in the data file of the record with the given key.

Question No: 73

Procedure which truncates command removes the data.

Answer:- (Page 207)

The TRUNCATE is used to delete all the rows of any table but rows would exist. If we want to remove all records we must use TRUNCATE.

Question No: 74

What is the mean of “Operational maintenance” of database?

Answer:- (Page 56)

Maintenance means to check that all parts of the system are working and once the testing of the system is completed the periodic maintenance measure are performed on the system to keep the system in working order.

Question No: 75 (Marks 5)

Consider the two relations,
Department (Deltoid, Dep_Name,Dept_Head) and
Employee(Emp_ID,Emp_Name, Designation, DoB, Dept).

Write SQL statement to drop the primary key of Department relation? The fields in Employee should reflect the removal in Department table.

Answer:-

```
ALTER TABLE Department
DROP COLUMN Dept_Code
```

Question No: 76 (Marks: 1)

What is procedural DML?

Answer:- (Page 200)

Procedural DML is, in which the user specifies what data is needed and how to get it

Question No: 77

What is the basics purpose of window control? Give an example.

Answer:- (Page 244)

Used to take input and display output like buttons, checkboxes etc.

Question No: 78(Marks 3)

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Shortly explain BYTE data field?

Answer:- (Page 197)

Some of more frequently supported numeric data types include Byte, Integer, and Long Integer. Each of these types supports different range of numeric values and takes 1, 4 or 8 bytes to store. Now, if we declare the age attribute as Long Integer, it will definitely serve the purpose, but we will be allocating unnecessarily large space for each attribute. A Byte type would have been sufficient for this purpose since you won't find students or employees of age more than 255, the upper limit supported by Byte data type.

Question No: 79

Name two types of completeness Constraint.

Answer:- (Page 103)

There are two types of completeness constraints, partial completeness constraints and total completeness constraints

Question No: 80

Basic Syntax of INDEX.

Answer:-

CREATE INDEX index_name
ON table_name (column_name)

Question No: 81 (Marks 2)

Which DML statement changes the values of one or more columns based on some conditions.

Answer:- (Page 209)

The UPDATE statement changes the values of one or more columns based on some condition.

Question No:82 (Marks 2)

Name two types of data dictionary

Answer:- (Page 65)

Types of Data Dictionaries:
Integrated
Free Standing

Question No: 83 (Marks 2)

What is the —data type‖?

Answer:- (Page 197)

In Microsoft SQL Server™, each column, local variable, expression, and parameter has a related data type, which is an attribute that specifies the type of data (integer, character, money, and so on) that the object can hold.

Question No: 84(Marks 2)

Write an sql statement to remove an index called Index Number

Answer:-

DROP INDEX Syntax for MS SQL Server:
DROP INDEX table_name. Index Number

Question No:85 (Marks 2)

In context with transaction what does the ACID Stands for

Answer:- (Page 291)

Atomicity Consistency isolation durability.

Question No: 86 (Marks 3)

States the major disadvantage of creating and using index

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Answer:-
Firstly, the indexes take up disk space.
Secondly, the indexes slow down the speed of writing queries, such as INSERT, UPDATE and DELETE.

Question No:87
Write two factors which enforce a relation into send normal form (Marks 3)
Answer:- (Page 166)
eliminate redundant data
ensure data dependencies make sense

Question No: 88
Write any five advantage of database system (Marks 5)
Answer:-
Reduced data redundancy
Reduced updating errors and increased consistency
Greater data integrity and independence from applications programs
Improved data access to users through use of host and query languages
Improved data security

Question No: 89
Describe To_Date() function (Marks 5)
Answer:-
The TO_DATE function converts a formatted TEXT or NTEXT expression to a DATETIME value. This function is typically used to convert the formatted date output of one application (which includes information such as month, day, and year in any order and any language, and separators such as slashes, dashes, or spaces) so that it can be used as input to another application.

Question No: 90 (Marks 3)
State the main purpose of index in relation with the queries executions.
Answer:-
Index help to better recovery and retrieval of record from the database..
By building index on any attribute will help the queries to improve query performance.
Multiple indexes provide flexibility to retrieve the data from various attributes.

Question No:91
What is Logical data base?
Answer:- (Page 187)
In logical data base design we group things logically related through same primary key.

Question No:92
How do we DELETE row by row from the table ?
Answer:-
It is possible to delete all rows in a table without deleting the table. This means that the table structure, attributes, and indexes will be intact:
DELETE * FROM table_name

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Question No: 93 (Marks 3)

What is meant by database recovery services?

Answer:- (Page 47)

Recovery services mean that in case a database gets an inconsistent state to get corrupted due to any invalid action of someone, the DBMS should be able to recover itself to a consistent state, ensuring that the data loss during the recovery process of the database remains minimum.

Question No: 94 (Marks 5)

Write four steps to recover from a deadlock between the transactions

Answer:- (Page 320)

Following are some of the approaches for the deadlock handling:

- Deadlock prevention
- Deadlock detection and resolution
- Prevention is not always possible
- Deadlock is detected by wait-for graph

Question No:95

What do u mean by GROUP By command

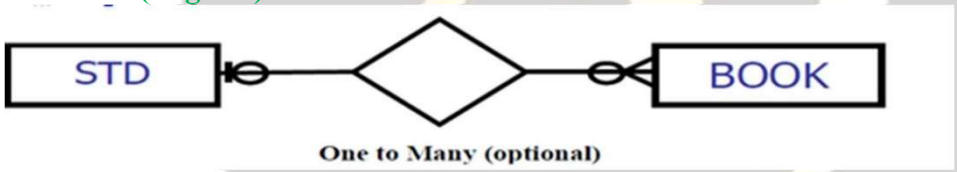
Answer:-

The GROUP BY statement is used in conjunction with the aggregate functions to group the result-set by one or more columns.

Question No:96

Give the implementation of One to many relationship

Answer:- (Page 92)



Question No: 97 (Marks 3)

Write the properties of Sequence File

Answer:- (Page 259)

Records are arranged on storage devices in some sequence based on the value of some field, called sequence field. Sequence field is often the key field that identifies the record.

Simply, easy to understand and manage, best for providing sequential access. It is not feasible for direct or random access; inserting/deleting a record in/from the middle of the sequence involves cumbersome record searches and rewriting of the file.

Question No. 98

Write the two types of ordered indices?

Answer:- (Page 276)

There are Two types of ordered indices:

Dense Index:

Sparse Index:

Question No. 99

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Write three types of data Independence?

Answer:-

1. Logical Data Independence
2. Physical Data Independence
3. View Data Independence

Question No. 100

How do we prevent deadlock in DBMS?

Answer:- (Page 299)

We can prevent deadlocks by giving each transaction a priority and ensuring that lower priority transactions are not allowed to wait for higher priority transactions (or vice versa).

Question No. 101

How the lost Updates are in DBMS?

Answer:- (Page 308)

Lost Update Problem This problem occurs when multiple users want to update same object at the same time.

Question No. 102

Differentiate b/w Clustered Indexes and non Clustered Indexes?

Answer:-

Cluster Index

1 A cluster index is a form of tables which consist of column and rows.
2 Cluster index exists on the physical level
3 It sorts the data at physical level
4 It works for the complete table
5 There is a whole table in form of sorted data 6 A table can contain only one cluster index

Non Cluster Index

1 A non cluster index is in the form of a report about the tables.
2 They are not created on the physical level but at the logical level
3 It does not sort the data at physical level
4 A table has 255 non clustered indexes
5 A table has many non clustered indexes.
6 It work on the order of data

Question No: 103 (Marks 2)

What are the forms of cache normally used in desktop computers

Answer:-

Two types of caching are commonly used in personal computers: memory caching and disk caching.

Question No. 104

Write about NOT operators?

Answer:-

If you want to find rows that do not satisfy a condition, you can use the logical operator, NOT. NOT results in the reverse of a condition. That is, if a condition is satisfied, then the row is not returned.

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Question No. 105

SELECT * FRO Persons
WHERE Firstname Like —% da %¦;
What does the above statement returne?
Answer:-
Return all records containing L in attribute name _Firstname‘ from persons table.

Question No. 106 (Marks 2)

What is the difference between Primary key and a unique key with reference to clustered and non-clustered indexes?
Answer:
Primary key can not be null but unique can have only one null value.
Primary key create the cluster index automatically but unique key not.
A table can have only one primary key but unique key more than one.

Question No. 107 (Marks 5)

Create a simple index, named —Personal Index‖ on the LastName field of the person table?

Answer:-
TABLE person
(
FirstName char(15),
LastName char(15),
Address char(50),
City char(50),
Country char(25),
)
CREATE INDEX new_person_ LastName
on person (LastName)

Question No. 108 (Marks 5)

Writing the basic syntax of adding a record to a table.
Answer:-
INSERT INTO table_name
VALUES (value1, value2, value3...)

Question No.109 (Marks 5)

Give 4 similarities between Materialized views and indexes?
Answer:- (Page 290)
• They consume storage space.
• They must be refreshed when the data in their master tables changes.
• They improve the performance of SQL execution when they are used for query rewrites.
• Their existence is transparent to SQL applications and users.

Question No. 110 (Marks 3)

How the stamping approach does works to give priorities to the transactions?

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Question No: 111 **(marks 3)**

```
SELECT * FROM Persons
WHERE FirstName LIKE '%da%';
```

Question No.112 (Marks 2)

State any two problems that can come up as a result of inconsistent data base?

Answer:- (Page 307)

Lost Update Problem
Uncommitted Update Problem
Inconsistent Analysis Problem

Question No: 113 (Marks 5)

briefly describes the dynamic view.

Answer:- (Page 284)

Dynamic views are those types of views for which data is not stored and the expressions used to build the view are used to collect the data dynamically. These views are not executed only once when they are referred for the first time, rather they are created and the data contained in such views is updated every time the view is accessed or used in any other view or query. Dynamic views generally are complex views, views of views, and views of multiple tables.

Question No:114 (Marks 5)

briefly explains the significance of not null constraint.

Answer:

NOT NULL constraints in Microsoft SQL Server allow you to specify that a column may not contain NULL values. When you create a new NOT NULL constraint on a database column, SQL Server checks the column‘s current contents for any NULL values. If the column currently contains NULL values, the constraint creation fails. Otherwise, SQL Server adds the NOT NULL constraint and any future INSERT or UPDATE commands that would cause the existence of a NULL value fail.

Question No: 115 (Marks 5)

Name the five main components of Database management systems software.

Answer:-

1. DBMS engine
2. Data definition subsystem
3. Data manipulation subsystem
4. Application generation subsystem
5. Data administration subsystem

Question No: 116 (Marks 3)

briefly explains the mechanism of optimistic locking mod.

Answer:- (Page 319)

In an optimistic locking mode, the first transaction accesses data but does not take a lock on it. A second transaction may change the data while the first transaction is in progress. If the first transaction later decides to change the data it accessed, it has to detect the fact that the data is now changed and inform the initiator of the fact.

Question No: 117 (Marks 3)

writes the procedure following which the truncate command removes the data.

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Answer:- (Page 207)
The TRUNCATE is used to delete all the rows of any table but rows would exist. If we want to remove all records we must use TRUNCATE.
TRUNCATE TABLE table_name

Question No:118 (Marks 3)
why do we need meta data?
Answer:- (Page 23)
For storage of the data related to any entity or object existing at real world level we define the way the data will be stored in the database. This is called Meta data.

Question No:119 (Marks 3)
name three difference classification of indexes?
Answer:- (Page 272)
Indexes are classified as under:
• Clustered vs. Un-clustered Indexes
• Single Key vs. Composite Indexes
• Tree-based, inverted files, pointers

Question No: 120 (Marks 5)
Consider a table named COMPANY with fields COMPANY_NAME, DESCRIPTION, ORDER_NUMBER. Write an SQL statement to display company names in reverse alphabetical order.
Answer:-
```
select COMPANY_NAME
from COMPANY order by COMPANY_NAME desc;
```

Question No: 121 (Marks 2)
writes an SQL statement to remove an index called _IndexNumber'?
Answer:
DROP INDEX table_name.IndexNumber

Question No:122
what are the participant of a relationship? (Marks 2)
Answer:- (Page 86)
Entities enrolled in a relationship are called its participants

Question No: 123 (M a r k s: 2)
Write the main feature of volatile storage media?
Answer:- (Page 255)
Computer storage that is lost when the power is turned off is called as volatile storage. For example RAM

Question No: 124 (M a r k s: 10)
Write four advantages and four disadvantages of De-normalization.

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Answer:-

Table 18.1 Advantages and disadvantages of denormalization

Advantages	Disadvantages
Can improve performance by: ■ precomputing derived data; ■ minimizing the need for joins; ■ reducing the number of foreign keys in relations; ■ reducing the number indexes (thereby saving storage space); ■ reducing the number of relations.	May speed up retrievals but can slow down updates. Always application-specific and needs to be re-evaluated if the application changes. Can increase the size of relations. May simplify implementation in some cases but may make it more complex in others. Sacrifices flexibility.

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