Question # 6 of 10 (Start time: 03:29:38 PM, 09 January 2025)

Which of the following is true if the following SQL statement tries to execute?

```
SELECT *
FROM emp
WHERE Empname='ALI'
ORDERBY Age;
```

Select the correct option

- The statement displays the entire fields from emp in which the Empname is ALI in descending order of their age
- The statement has a syntax error
- The statement displays the entire fields from emp in which the Empname is ALI in ascending order of their age
- The statement displays the entire fields from emp in which the Empname is ALI in any order

Question # 3 of 10 (Start time: 03:26:56 PM, 09 January 2025)

The two basic types of record access methods are----------.

Select the correct option

- ○ sequential and immediate
- ◉ sequential and random
- ○ Direct and immediate
- ○ sequential and indexed

CS403 - Database Management Systems (Quiz No. 3)

Question # 2 of 10 (Start time: 03:30:58 PM, 08 January 2025)

In Denormalization two relations who have _____ relationship are merged into one relation.

Select the correct option

188

- One to one
- Many to many
- One to many
- Many to one

CS403 - Database Management Systems (Quiz No. 3)

Question # 1 of 10 (Start time: 03:30:16 PM, 08 January 2025)

Which of the following is NOT related to partitioning and placement in database?

Pg# 189

Select the correct option

- Speed up data transmission
- Balance workload
- Speed up the rate of useful work
- Reduce workload

CS403 - Database Management Systems (Quiz No. 3)

Question # 4 of 10 (Start time: 03:33:32 PM, 08 January 2025)

The maximum PL/SQL size of data type "VARCHAR2" in DBMS is _____ bytes.

184

Select the correct option

- ○ 52767
- ○ 28767
- ◉ 32767
- ○ 42767

CS403 - Database Management Systems (Quiz No. 3)

Question # 5 of 10 (Start time: 03:34:12 PM, 08 January 2025)

A relational table is in third normal form (3NF) if it is already in 2NF and every non-key column is non-transitively dependent upon its _____.

Select the correct option

- ○ Candidate Key
- ○ Super Key
- ◉ Primary Key
- ○ Foreign Key

CS403 - Database Management Systems (Quiz No. 3)

Question # 6 of 10 (Start time: 03:35:21 PM, 08 January 2025)

A column used to uniquely identify individual rows of a given table, may be specified to be _____.

Select the correct option

- ○ Variable length
- ○ Strong
- ○ Fixed length
- ◉ NOT NULL

CS403 - Database Management Systems (Quiz No. 3)

Question # 8 of 10 (Start time: 03:37:00 PM, 08 January 2025)

Data type "BLOB" in database management system stands for _____.

Select the correct option

- (●) Binary large Object
- ( ) Binary large objective
- ( ) Bipolar large object
- ( ) Binary long objective

CS403 - Database Management Systems (Quiz No. 3)

Question # 7 of 10 (Start time: 03:36:13 PM, 08 January 2025)

A database state where deletion of the information about the student record deletes the course information as well is called _____.

Select the correct option

- Insertion anomaly
- Deletion anomaly
- Redundancy
- Updation anomaly

CS403 - Database Management Systems (Quiz No. 3)

Question # 3 of 10 (Start time: 03:32:09 PM, 08 January 2025)

Which of the following is the Correct SQL statement for creating table in Microsoft SQL server?

Select the correct option

- CREATE Customer
  (SID integer,
  Last_Name varchar(30),
  First_Name varchar(30));
- CREATE TABLE Customer
  (SID integer,
  Last_Name varchar(30),
  First_Name varchar(30))
- All of the above
- CREATE TABLE Customer
  (SID integer PRIMARY KEY,
  Last_Name varchar(30),
  First_Name varchar(30));

Question # 2 of 10 (Start time: 03:26:30 PM, 09 January 2025)

Truncate is an alternative of Delete command.

Select the correct option

- (•) True
- ( ) False

CS403 - Database Management Systems (Quiz No. 4)

Question # 4 of 10 (Start time: 03:27:37 PM, 09 January 2025)

Which of the following is not DML command?

Select the correct option

- (●) Truncate
- ( ) Delete
- ( ) Select
- ( ) Update

Question # 5 of 10 (Start time: 03:28:36 PM, 09 January 2025)

There are ---------- types of user interfaces.

Select the correct option

- One
- four
- three
- two

CS403 - Database Management Systems (Quiz No. 4)

Question # 9 of 10 (Start time: 03:32:09 PM, 09 January 2025)

GRANT command belongs to which type of classification?

Select the correct option

- DQL
- DCL
- DDL
- DML

CS403 - Database Management Systems (Quiz No. 4)

Question # 8 of 10 (Start time: 03:31:40 PM, 09 January 2025)

REVOKE is a _____ statement.

Select the correct option

- Control Access
- Data description
- Data Definition
- Data manipulation

CS403 - Database Management Systems (Quiz No. 4)

Question # 7 of 10 (Start time: 03:31:11 PM, 09 January 2025)

When the power is turned off content of _____ is lost.

Select the correct option

- permanent storage
- Hard disk storage
- Volatile storage
- Non Volatile storage

CS403 - Database Management Systems (Quiz No. 4)

Question # 10 of 10 (Start time: 03:32:20 PM, 09 January 2025)

The _____ should be user friendly, Data integrity must be ensured and checks can be applied within the tables.

Select the correct option

- [ ] Database
- [ ] computer language
- [ ] Application programing
- [x] Input forms

continues at location 0. Only if the table is completely full will the search fail.

Summary Hash Table Organization:

Organization	Advantages	Disadvantages
Chaining	Unlimited number of elements Unlimited number of collisions	Overhead of multiple linked lists
Re-hashing	Fast re-hashing Fast access through use of main table space	Maximum number of elements must be known Multiple collisions may become probable
Overflow area	Fast access Collisions don't use primary table space	Two parameters which govern performance need to be estimated

CS403 - Database Management Systems (Quiz No. 3)

Question # 9 of 10 (Start time: 03:37:32 PM, 08 January 2025)

A functional dependency is a typo of relationship between _____.

Select the correct option

- ○ Entities
- ○ Tables
- ○ Objects
- ◉ Attributes

CS403 - Database Management Systems (Quiz No. 3)

Question # 10 of 10 (Start time: 03:38:11 PM, 08 January 2025)

Given the following relation it is not 3 NF because
Student (roll no, name, course no, course max. marks, year of study, address), where roll no is PK

Select the correct option

- it has more than 3 non-key attributes
- it is not in 2 NF
- it does not have composite key
- non-key attributes course no and course max. marks are functionally dependent

CS403 - Database Management Systems (Quiz No. 4)

Question # 1 of 10 (Start time: 03:25:46 PM, 09 January 2025)

WORM: Stands for----------.

Select the correct option

- (●) write-once, read-many
- ( ) Write on, Read memory
- ( ) write only memory
- ( ) Read only memory

CS403

Current Paper : 27/01/25

MCQs, Short, Long

Topic :

1- Functional Dependency ---- Lec#19 ---- 3 MCQs ---- Pg#165

2- Pseudo transitivity Lec# 19 1 MCQs ---- Pg#166
(Must be ready all types of Inference)

3- Third Normal Form ---- 2 MCQs ---- Pg#171, 173
& BCN Form Lec# 20

4- Partitioning ---- 2 MCQs --- Pg# 189 - Lec#23

5- Data Types in SQL Server Lec#25 ... 1 MCQs ... Pg# 197, 198

6- DDL, SQL, CREATE ---- 6 MCQs - Lec# 26 to 30 1 short

7- Pg# 246 - Lec# 33 --- 2nd Para 1st line, 3 points

8- Lec# 34 ..... 2 MCQs ---. Non-Volatile & Cashe

9- Lec# 35 ---- 1 MCQs --- Index sequential file

10- Lec# 38, 37 .. 2 MCQs 1 short --- Index, Properties of Index

11- Lec# 39 --- 43 ..... MCQs, Short, Long
View, Write Sequence, CREATE View, Check point, Dead lock, Transaction Management & Properties, Deleting View & Updates on View (Pg 287)

CS403

Final Term Prepration

Lecture no 19:

Functional Dependency

- A functional dependency is a type of relationship between attributes.

- Attributes of set of attributes on the left side are called determinant.

- $A \longrightarrow B$: A determines B
- If A and B are attributes or set of attributes of relation R, we say that B is functionally dependent on A if each value of A in R has associated with it exactly one value of B in R.

→ F.D and Keys :

- Super key is an attribute or set of attributes that identifies an entity uniquely.

- FDs helps in finding out their keys and their relation as well.

Inference Rules

Rules of Inference for functional dependencies, called inference axioms or Armstrong axioms.

Different inference Rules :-

1- Reflexivity :

If B is a subset of A, then $A \rightarrow B$.
This is also implies that $A \rightarrow A$ always holds.

2- Augmentation:

If we have $A \rightarrow B$ then $AC \rightarrow BC$.

3- Transitivity:

If $A \rightarrow B$ and $B \rightarrow C$, then $A \rightarrow C$.

4- Aditivity or Union:

If $A \rightarrow B$ and $A \rightarrow C$, then $A \rightarrow BC$.

5- Projectivity or Decomposition:

If $A \rightarrow BC$, then $A \rightarrow B$ and $A \rightarrow C$.

6 Pseudo transitivity:

If $A \rightarrow B$ and $CB \rightarrow D$, then $AC \rightarrow D$.

Date:

1) Horizontal Partitioning:

Table is split on the basis of rows, which means larger table split into smaller tables. Some of types of HP are as under:-

- **Range Partitioning:**

Partitioning range is imposed on any particular attribute.

- **Hash Partitioning:**

Hash Partitioning reduces the chances of unbalanced partitions to a large extent by particular algorithm. DBMS knows that algorithm.

- **List Partitioning:**

Partitioning the values are specified for every partition. So, there is a specified list for all the partitions.

* There is no range involved in this.
* There is a list of values.

of updation in all
relations.

→ **Clustring Files:**

The process which means to place records from different tables to place in adjacent physical locations, called clusters.

* Cluster increase the efficiency.

Mcqs ⇒ Data Definition Language (DDL) skills to translate Physical design into actual database objects.

→ **Transforming Logical into Physical**

Oracle, Sybase, Microsoft SQL Server, Access, Ingres, etc.

→ Standard SQL commands:

"Select", "Insert", "Update", "Delete", "Create" and "Drop".

→ Benefits of Standard SQL:

1) Reduced training cost
   - Application Portability
   - Application longevity
   - Reduced dependence on a single Vendor
   - Cross-System Communication

Constraints in SQL Server.

```
-- CREATE DATABASE
CREATE DATABASE Exam;

--Create Table Name Student without
Constraints
CREATE TABLE Student;
(
```

-- Create Table Name Student without Constraints

```
CREATE TABLE Student;
(
    stdID      INT ,
    stdName    TEXT ,
    CGPA       REAL ,
    Semester   SMALLINT
);
```

-- Create Table Name student with constraints.

Queries

Q1) If you want to select all the columns.

```
SELECT * Student ;
       table name
```

Q2) If you want to select specific columns.

```
SELECT col1 , col2 FROM tablename ;
```

Q3) If you want only unique items selected from column. (ignoring repeated)

```
SELECT DISTINCT col_name FROM tablename;
```

Q4) If you want to show a New Name of column that you set.

```
SELECT col-name AS 'ANY NAME' FROM tablename ;
```

Date:

Lecture no 29:

Q : Display all courses of the MCS Program

```
SELECT crName, PrName FROM tablename;
WHERE PrName = 'MCS';
```

Q : List the course names offered to Programs other than MCS from course table

```
SELECT crcode, crName, prName FROM Course
WHERE PrName != MCS;
-- WHERE NOT (PrName = 'MCS');
```

} Same result

Q : Display the names and credits of CS programs

```
SELECT crName, crCredits, PrName FROM Course
WHERE PrName LIKE '%CS';
```

Date:

Lecture No 30:

→ ORDER BY Clause

The ORDER BY clause allows you to sort the records in your result set. The ORDER BY clause can only be used in SELECT statements. The result set based on the columns specified. After column name write the order ASC or DESC

```
SELECT * FROM tablename (Student)
WHERE stId > 100
ORDER BY stId ASC;
```

These

SQL

- N
- S
- P
-
-

Date:_____

→ Categories of Functions:

These categories of functions are specific to SQL Server. Functions are categorized as under:

- Mathematical (ABS, ROUND, SIN, SQRT)
- String (LOWER, UPPER, SUBSTRING, LEN)
- Date (DATEDIFF, DATEPART, GETDATE())
- System (USER, DATELENGTH, HOST_NAME)
- Conversion (CAST, CONVERT)

Example:-

```
SELECT UPPER(stName), LOWER(stFName), stAdress
LEN(CONVERT(char, stAdress)) FROM student;
```

→ Aggregate Functions

Examples:-

```
SELECT UPPER(stName), LOWER(stFName), stAdress
LEN(CONVERT(char, stAdress)) FROM student;
```

→ Aggregate Functions

These functions operate on a set of rows and return a single value.

If used among many other expressions in the item list of a SELECT statement, then must have a GROUP BY clause.

No GROUPBY clause is required if the aggregate function is the only value retrived by the SELECT statement.

Some Aggregate Functions :—

Date:

→ GROUP BY Clause

Used in a SELECT statement to collect data across multiple records and group the results by one or more columns.

Example by using SUM function:

```
SELECT departement, SUM (sales) AS 'Total Sales'
FROM Order_details
GROUP BY departement;
```

→ Having Clause

The HAVING clause is used in combination with the GROUP BY clause. It is used to filter the records that a GROUPBY returns.

```
SELECT AVG (marks) FROM student
WHERE stID > 100
GROUP BY marks HAVING marks > 300 ;
```

→ Cartesian Product

A cartesian join gives a cartesian product.
A cartesian join is when you join every row of one table to every row of another table.
You can also get one by joining every row of a table to every row of itself.

→ When data is found in the cache, is called a cache hit.

→ The CPU can directly access RAM.

→ Random Access Memory. (RAM)

→ Flash memory is non-volatile.

→ MOS stans for Metal Oxide Semiconductor.

→ Hard Disk can store anywhere from 20MB to more than 10 GB. Hard Disk are also from 10 to 100 times faster than floppy disks.

CD-ROM: You can read the data from a CD-ROM, but you cannot modify, delete, or write new data.

→ MOS stand for
→ Hard Disk can store anywhere from 20MB to more than 10 GB. Hard Disk are also from 10 to 100 times faster than floppy disks.

CD-ROM: You can read the data from a CD-ROM, but you cannot modify, delete, or write new data.

~~WROM~~: → **WORM**

Stands for Write-once, read-many.

→ **Erasable Optical (EO)**

EO disk can be read to, written to, and erased just like magnetic disks.

In data loss.

RAID-1:

Same data
RAID-1 Provide redu
data to two or
but if either

RAID-2:

RAID Level 2,
codes.
disk 1 in
disk 3 in

RAID-3:

Data

Lecture No 43:

→ Write Sequence

On encountering a 'write' operation, the DBMS places an entry in the log file buffer mentioning the effect of the write operation.

X = X + 10

Write X

before addition 23

After addition 33

The entry made in the log file will be.

<T_n, X, 33>

- Log entry made only for the write operation.
- log file enteries have been made permanent.

Write is performed, what?

Write is performed, that is, the data from DataBase buffer is moved to disk.

DataBase buffer is moved to disk.

→ Recovery Produce

When crash occurs, the recovery manager(RM), on restart, examines the log file from the disk. 'checkpoint' is used in the recovery procedure.

→ Checkpoint

Checkpoint is also a record or an entry in the log file. Check point makes the 'recovery procedure' efficient. Logo file is maintained for 'recovery procedure'.

Purpose

When Commit Command executed:

- It moves modified database buffers to disk.
- Writing a checkpoint record to log; log record mentions all active transactions at the time.

In case of crash, the RAM has to decided which transaction to Redo and which to Ignore.

Recovery Manager decides it on the following bases:

- Transactions ended before the checkpoint, are ignored.

which transaction to Redo and which to Ignore.

Recovery Manager decides it on the following bases:

- Transactions ended before the checkpoint, are ignored.
- Transactions that have begin and an abort entry are ignored.
- Transactions that have begin and no end entry (commit or Rollback) are ignored.

∴ only one point that are Redone (Redo)

- Transitions which have both begin and the commit entries, are Redone. It doesn't matter if they are committed again.

Transactions that have begin and an abort entry are ignored.

- Transactions that have begin and no end entry (commit or Rollback) are ignored.

∴ only one point that are Redone (Redo)

- Transitions which have both begin and the commit entries, are Redone. It doesn't matter if they are committed again.

MCQs:

- After execution of "commit" statement, _____ is updated first.

Database Buffer