DBMS - End Sem

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1) Yes it is possible to do all the above operations in DBMS. Using empname as a clustered index is possible only where every employee will have a unique name. If this is ensured, the tuples will be organized according empname alphabatically.

Using empid as a clustered index is definitely possible considering everyone already has a unique id assigned to there. The tuples will be organised according to Empid.

Using both empname and Empid as a clustered indexes may not be possible but it is possible two hand one clusked index and one non-clusked index.

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(i) DDL is important in Representing information in DBMS. because it is used to describe external and Logical schemes.

(ii) DML is used to access and update data, it is not important for represting the data.

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3. TRUE, DBMs interleave the actions of different transactions instead of executing transactions one after the other. Transactions from these users can be interleaved to improve the execution time of users' queries - By interleaving queries, users do not have to wait for other user's transactions to complete, and user B wants to begin a transaction, user B would have to wait an additional 10 seconds for user A's transaction to complete before the database would begin processing user B's request.

4.

a) A user must guarantee that his or her transaction does not corrupt data or insert nonsence in the database.

For example, in a banking database a user must guarntee that a cash withdraw transaction accurately models the amount a person removes from his or her account. The application is worthless if anybody withdraws some of his amount from ATM but the transaction sets his account balance to 0.

b)

b) A DBMS must guarntee that transactions are executed fully and independently of other transactions. As essential property of a DBMS is that a transaction should execute atomically, or as if it is the only transaction running. This ensures that the database remains consistent.

5.

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Yes, we can determine the key of relation with the help of instance. Example :- In a one to many relation we can consider the column with unique values as a primary key

6)

a) Create clustured index Ix_empname_index ON

STUDENT TABLE (studentName DESC)

" select Email from STUDENT Table"

This query displays all the Emails in the desending order of the StudentName. first the table gets sorted based on StudentName in Desc order then the select query displays the emails in that order

b)

StudentID	StudentName	Email	Age
1005	Krishnaveni	krishna@mail	24
1030	John cena	null	19
1020	John	null	27

7th)

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- Relational Algebra:-

ρ(R1, Catalog)
ρ(R2, Catalog)
πR1.pid σ R1.Pid = R2.pid ∧ R1.sid ≠ R2.sid (R1 × R2)

SQL Query:-

```
SELECT C.sid
FROM Catalog C
WHERE EXISTS (SELECT C1.sid
 FROM Catalog C1
 WHERE C1.Pid = C.Pid AND C1.sid <> C.sid)
```

8th)

- Invalid query -

Explanation:- This relational algebra statement does not return anything because of the sequence of projection operators. once the sid is projected, it is the only field in the set. Therefore, projecting on same will not return anything

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9.4)

The following view on Emp can be updated automatically by updating Emp :-

```
CREATE VIEW SeniorEmp (eid, ename, age, salary)
AS SELECT E.eid, E.ename, E.age, E.salary,
FROM EmpE
WHERE E.age > 50
```