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DBMS - End Sem Examinations.

Ans 1. Using empname as a clustered index is possible only when every employee will have a unique name. If this is ensured the name tuples will be organized according to empname alphabetically.

Using empid as a clustered index is definitely possible considering everyone already has a unique id assigned to their tuples will be organized according to empid.

Using both empname & empid as ① as clustered indexes may not be possible but it is possible two name one clustered index and one non-clustered index.

Ans 2. 1) Representing information, external, logical & schema
2) access, update, representing the data.

Ans 3. True:-

A DBMS is a mass shared. Transactions from these users can be interleaved to improve the execution time of user's queries. By interleaving queries, users do not have to wait for other user's transactions to complete fully before

their own transaction begins. Without interleaving if user A begins a transaction that will take 10 seconds to complete and user B wants to begin a transaction user B would have to wait additional 10 seconds.

for user A's transaction to complete before the database would begin processing user B's request.

Ans4: a) A user must guarantee that his or her transaction does not corrupt data or inserts nonsense in the database

Eg: If a 100% transaction is made the records must not deviate from 100% transaction otherwise application would be useless.

b) A DBMS must guarantee that transactions are executed fully and independently of other transactions. An essential property of a DBMS is that a transaction should execute automatically or as if it is the only transaction running. Also transactions will either complete fully or will be aborted with the database in its initial state. This ensures that the database remains consistent.

Ans 6. CREATE CLUSTERED INDEX clustered
ON STUDENTSTABLE (StudentName AGX)



To Create a clustered Index.

Query:-

SELECT Email From STUDENTSTABLE

Output:-

Email
jaya@xyz.com
Jh@xyz.com
NULL
Krishna@pqr.com

C.Q.) Output:-

Student ID	Student Name	Email	Age
1005	Krishna	Krishna@pqr.com	22
1020	John	Jh@xyz.com	22
1030	John	NULL	23

Ans 9. The following view on Emp can be updated
automatically by updating Emp:

CREATE VIEW SeniorEmp(eid, name, age, salary)

AS SELECT E.eid, E.ename, E.age, E.salary

FROM Emp E

WHERE E.age > 50

Ans 7. Let the two supplies be R_1, R_2 :

$P(R_1, \text{catalog})$

$P(R_2, \text{catalog})$

$\pi_{R_1.Pid} \sigma_{R_1.Pid = R_2.Pid} \Delta R.\text{sid}(R_1 \times R_2)$

Using the following:

SID	PID	Cost
1	1	1000
2	1	2000
2	3	3000
3	1	4000

$R_1 \times R_2$ gives us:-

SID	PID	Cost	SID	PID	Cost
1	1	1000	1	1	1000
1	1	1000	2	1	2000
1	1	1000	2	3	3000
1	1	1000	3	1	4000
2	1	2000	1	1	1000
2	1	2000	2	1	2000
2	1	2000	2	3	3000
2	3	2000	3	1	4000
2	3	3000	1	1	1000
2	3	3000	2	1	2000
2	3	3000	2	3	3000

2	3	3000	3	1	1000
3	1	4000	1	1	1000
3	1	4000	2	1	2000
3	1	4000	2	3	3000
3	1	4000	3	1	4000

$\sigma R_1 \cdot P_{ID} = R_2 \cdot P_{ID}$ gives us:

S _{ID}	P _{ID}	Cost	S _{ID}	P _{ID}	Cost
1	1	1000	1	1	1000
1	1	1000	2	1	2000
1	1	1000	3	1	4000
2	1	2000	1	1	1000
2	1	2000	2	1	2000
2	1	2000	3	1	4000
2	3	3000	2	3	3000
3	1	4000	1	1	1000
3	1	4000	2	1	2000
3	1	4000	3	1	4000

Q8. $\sigma R_1 \cdot P_{ID} = R_2 \cdot P_{ID} \wedge R_{11} \cdot P_{ID} ! = R_1 \cdot S_{ID}$ gives us:

S _{ID}	P _{ID}	Cost	S _{ID}	P _{ID}	Cost
1	1	1000	2	1	2000
1	1	1000	3	1	4000
2	1	2000	1	1	1000
2	1	2000	3	1	4000
3	1	4000	1	1	1000
3	1	4000	2	1	2000

SQL:

SELECT C.sid
From Catalog C

WHERE EXISTS (SELECT C1.sid)

FROM Catalog C1

WHERE C1.PID = C.PID AND C1.SID = C.SID