

* DBMS *

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* End-Sem Exam.*

3) True.

A DBMS is typically shared among many users. 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 AA begins a transaction of 10 sec completion time & user BB wants to begin transaction then BB have to wait an additional 10 sec for completion of AA transaction before the database would begin processing user BB's request.

4.) (a) A user must guarantee that his or her transaction does not corrupt data or insert nonsense in the data base. e.g. in a banking database, a user must guarantee that a cash withdraw transaction accurately models the amount a person removes from his or her account. A database application would be worthless if a person removed Rs. 1000 from an ATM but the transaction set their balance to zero. (b) A DBMS must be guarantee that transactions are executed fully & independently of other transactions. An essential property of a DBMS is that a transaction should execute auto. or as if it is the only transaction running. Also, transactions will either complete fully, or will be aborted.

and the database returned to its initial state. This says that the database remains consistent.

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

```
CREATE VIEW Senior_Emp (eid, name, age, salary)
AS SELECT E.eid, E.ename, E.age, E.salary
FROM Emp E
WHERE E.age > 50
```

- 2) DDL is important in representing information in DBMS because it is used to describe external and logical schemas.
 i) DML is used to access and update data; it is not important for representing the data.

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

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

Using both empname & empid as a clustered index may not be possible but it is possible to have one clustered index and one non-clustered index.

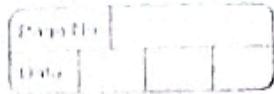
5) Yes, we can determine the key of relation with the help of instance. e.g. In a one to many relation we can consider the column/attribute with unique values as a primary key

6) * Create clustered index student Name - index on student (student Name Asc)

\Rightarrow it will create index on student Name where student is table name.

* select email from student

O/P :	e-mail
	Jaya @ xyz.com
	Jh @ xyz.com
	Krishna @ pqr.com



Q8) find the pids of parts supplied by at least two different suppliers.

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

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

$$\pi_{R_1.Pid} \delta_{R_1.Pid \wedge R_1.sid \neq R_2.sid} (R_1 \times R_2)$$

Using following

SID	PID	COST
1	1	100
2	1	90
2	3	342
3	1	110
1	4	40
2	5	50

$R_1 \times R_2$ gives us :-

SID	PID	COST	SID	PID	COST
1	1	100	1	1	100
1	1	100	2	1	90
1	1	100	2	3	342
1	1	100	3	1	110
2	1	90	1	1	100
2	1	90	2	1	90
2	1	90	2	3	342
2	1	90	3	1	110
2	3	342	1	1	100
2	3	342	2	1	90
2	3	342	2	3	342
2	3	342	3	1	110

Sid	Pid	cost	Sid	Pid	cost
3	1	110	1	1	100
3	1	110	2	1	90
3	1	110	2	3	34.2
3	1	110	3	1	110

6 $R1.Pid = R2.Pid$ gives us :-

Sid	Pid	cost	Sid	Pid	cost
1	1	100	1	1	100
1	1	100	2	1	90
1	1	100	3	1	130
2	1	90	1	1	100
2	1	90	2	1	90
2	1	90	3	1	110
2	3	34.2	2	3	34.2
3	1	110	1	1	100
3	1	110	2	1	90
3	1	110	3	1	110

6 $R1.Pid = R2.Pid \wedge R1.Sid = R2.Sid$ gives us :-

Sid	Pid	cost	Sid	Pid	cost
1	1	100	2	1	90
1	1	100	3	1	110
2	1	90	1	1	100
2	1	90	3	1	110
3	1	110	1	1	100
3	1	110	2	1	90

8)

Sid	Pid	Cost
1	1	100
1	2	20
1	3	30
1	4	40
1	5	150
2	1	90
2	3	342
2	5	50

Parts :-

PID	Pname	color
1	Red 1	Red
2	Red 2	Red
3	Green 1	Green
4	Blue 1	Blue
5	Red 3	Red

SID	Sname	Address
1	Rajaram J.	Maharashtra
2	Sham R.	RT Studio, NJ
3	Radhe J.	NRP Market M.

Now,

Color = Red gives

PID	Pname	color
1	Red 1	Red
2	Red 2	Red
5	Red 3	Red.

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Now,

$\Pi_{pid} 6_{color} = 'Red'$ gives

PID

1

2

5

Now,

(($\Pi_{sid} (\Pi_{pid} 6_{color} = 'Red' \text{ Parts}) \bowtie \text{catalog}$) \bowtie suppliers)

SID	Sname	Address
1	Rajaram J.	Maharashtra
2	sham R.	RJ studio, NJ

Now, finally,

$\Pi_{sname} (\Pi_{sid} ((6_{color} = 'Red' \text{ Parts}) \bowtie (6_{cost} < 100 \text{ catalog}) \bowtie \text{suppliers}))$

Ans:-

Sname
Rajaram j
sham R.
—