

ADBMS Quiz 3



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*** Required**

Name *

Your answer

Adm. No. *

Your answer

Fill in the blanks. *

**SELECT movieTitle FROM StarsIn, MovieStar WHERE starName = name AND
birthdate = 1960 Its translation is as follows_____.**

Your answer



Find out the False statement(s). *

- ☐ The parser checks the query syntax to determine whether it obeys grammar rules and the scanner checks SQL keywords, attribute names and relation names.
- ☒ The task of both scanner and parser is to retrieve SQL keywords, attribute names, and relation names.
- ☐ The task of scanner is to retrieve the query syntax to determine whether it obeys grammar rules and the task of parser is to retrieve SQL keywords, attribute names and relation names.
- ☐ The scanner checks the query syntax to determine whether it obeys grammar rules and the parser checks SQL keywords, attribute names and relation names.

Find out the True statements *

- ☒ Sorting is a key component for JOIN operation in sort merge algorithm.
- ☒ Sorting is not a key component for INTERSECTION operation in duplicate elimination method.
- ☒ Uncorrelated query is harder to optimize than correlated query.
- ☒ Sorting is a key component for UNION operation in sort merge algorithm.

Chose the correct statement(s). If available buffer space is 6, size of files 2048, _____ runs are stored as temporary subfiles on the disk. *

- ☐ 341 (except the last run which have 4 blocks).
- ☐ 343 (except the last run which have 4 blocks).
- ☒ 342 (except the last run which have 4 blocks).
- ☐ 340 (except the last run which have 4 blocks).



Chose the correct statement(s):- *

- ☐ If available buffer space is 5, size of files 1025, 204 runs are stored as temporay subfiles on the disk.
- ☐ If available buffer space is 5, size of files 1025, 206 runs are stored as temporay subfiles on the disk (except the last run which will have 3 blocks).
- ☒ If available buffer space is 5, size of files 1025, 205 runs are stored as temporary subfiles on the disk (except the last run which will have 5 blocks).
- ☐ If available buffer space is 5, size of files 1025, 206 runs are stored as temporay subfiles on the disk.
- ☐ If available buffer space is 5, size of files 1025, 205 runs are stored as temporay subfiles on the disk
- ☐ If available buffer space is 5, size of files 1025, 204 runs are stored as temporay subfiles on the disk (except the last run which will have 4 blocks).

Chose the correct option(s). *

1. If $d_M=5$, $n_R=620$, the number of phases required would be

- ☐ 4
- ☐ 5
- ☐ 2
- ☐ 1
- ☐ 3

Fill in the blanks. *

If $n_B=5$, $d_M=4$, $n_R=4095$ the number of block access becomes_____.

Your answer



Choose the wrong statement(s). Consider $|r(R)|$ is the number of tuples in relation $r(R)$. *

- ☐ Selection with composite index is useful, when two or more records are involved in equality conditions in the conjunctive condition and hash structure exists on the combined field.
- ☒ The number of records satisfying a selection condition with selectivity 2 is $|r(R)| \times 2$.
- ☐ The higher number of records satisfying a selection condition with selectivity s indicates higher desirability of that condition to retrieve records.
- ☐ The estimates of selectivity are used by the optimizer.

Among different search methods (S1 through S6), the appropriate search method(s) which can handle range queries are *

- ☐ S1
- ☐ S5
- ☒ S2
- ☒ S3
- ☒ S4
- ☐ S6

Choose the correct methods for implementing JOIN operation. *

- ☒ Sort merge join
- ☐ Single loop join.
- ☐ Nested block join.
- ☒ Nested loop join.



Two record files R and S are both hashed to the same hash file, using the same hash function. Partitioning and probing are two important phase of hashing. S1:- During Has-join, a single pass through the file with fewer records hashes its records to the hash file buckets. S2:- During Has-join, a single pass through the other file (S) hashes each of its records to examine the appropriate bucket and that record is combined with all matching records from R in the bucket. Choose the correct option(s). *

- ☐ S1 is related to Partitioning
- ☒ S2 is related to Probing.
- ☐ S1 is related to Probing.
- ☐ S2 is related to Partitioning
- ☐ All are correct.

Suppose the DEPARTMENT file consists of 100 records stored in 20 disk blocks and EMPLOYEE file consists of 80,000 records stored in 200 disk blocks. Condition1: If EMPLOYEE is used for the outer loop, each block of EMPLOYEE is read once and the entire DEPARTMENT file is read once for each time we read EMPLOYEE file. Condition2: If DEPARTMENT is used for the outer loop, each block of DEPARTMENT is read once and the entire EMPLOYEE file is read once for each time we read DEPARTMENT file. Fill in the blanks. *

The total number of block acces for Condition2 and Condition1 are ____ and ____ respectively.

4200

1600020

Your answer



Choose the correct option(s). *

- ☒ The performance of a join is affected by Join selectivity.
- ☐ Join selection factor helps in calculating accurate cost function
- ☐ The performance of a join is affected by Join selection factor.
- ☒ Join selectivity helps in calculating accurate cost function.
- ☒ Individual index are useful when two or more attributes are involved in equality conditions in the conjunctive condition.

Write the answer *

Consider the following items. Based on their relations/associations create groups.
For example, if items A and B are related items among A, B and C due to some reason then put them in one group, and the groups become {A,B} and {C}.

Query tree, Query graph, Π , σ , Constant nodes, $\exists$, $\forall$, relation nodes, Square bracket.

Your answer

Chose the correct statement(s) of transformation rules in relational algebra: *

- ☐ Rule 4 along with other rules is involved in break down and move list of projection attributes down the tree as far as possible by creating new PROJECT operations as needed.
- ☐ Rule 1 of gives lesser degree of freedom in moving SELECT operation down different branches of the tree.
- ☒ Rule 4 alongwith other rules is involved in moving SELECT operation as far down the query tree as is permitted by the attributes involved in the selection conditions.
- ☐ SELECT operations can be moved down the query tree using Rule 5 and 9.



Among the following components of query execution, which one need to be redefined for distributed database. *

- ☐ Storage cost.
- ☐ Computation cost.
- ☐ Access cost
- ☒ Communication cost
- ☐ Computation cost.
- ☐ Memory usage cost.

Fill in the blanks *

The cost of SELECT using extendible hashing for retrieving a single record is

_____.

Your answer



Write the answer *

Match the following, where following information is related to cost function calculation of join.

Assume R and S are two relations and A and B are two joining attributes of R and S respectively. Let, t be the number of tuples satisfy the join condition $R \bowtie_c S$, where c is the condition.

X	Y
0	<i>Cartesian Product</i>
1	$t=0$
$1/ R $	<i>A is a key of R</i>
$1/ S $	<i>B is a key of S</i>

Your answer

Choose the correct option(s). *

- ☐ Distributed Database is a loose collection of file that is spread to multiple locations and is interconnected by a network
- ☐ A loose collection of file that is limited to one location.
- ☐ Distributed Database is a single logical database that is limited to one location.
- ☒ Distributed Database is a single logical database that is spread to multiple locations and is interconnected by a network



Which of the following is a disadvantage of replication? *

- ☒ Each transaction may proceed without coordination across the network.
- ☐ Reduced network traffic
- ☐ Each site must have the same storage capacity.
- ☐ If the database fails at one site, a copy can be located at another site.

A distributed database can use which of the following strategies? *

- ☒ All of the above
- ☐ Totally centralized at one location and accessed by many sites
- ☐ Partially or totally replicated across sites
- ☐ Partitioned into segments at different sites

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