

Exam 2020.12.21

Due No due date **Points** 60 **Questions** 25

Available Dec 21 at 4pm - Dec 21 at 5:10pm about 1 hour

Time Limit 60 Minutes

Instructions

Dear Students,

In the exam you will have 20 "fill in the gap" question (2 points each). For the notions you have to type in the gaps, see Exam_questions.pdf on my homepage.

Then you will have 5 practical exercises (4 points each).

You cannot move backwards among the questions!

Grade levels will be the following:

51-60 points --> 5

42-50 points --> 4

33-41 points --> 3

24-32 points --> 2

0-23 point --> 1

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	60 minutes	24 out of 60 *

* Some questions not yet graded

❗ Correct answers are hidden.

Score for this quiz: **24** out of 60 *

Submitted Dec 21 at 5:06pm

This attempt took 60 minutes.

Incorrect

Question 1

0 / 2 pts

Fill in the blank space (...) with the appropriate notion.

RAID level ... means block level striping and two distributed parity disks.

Question 2**2 / 2 pts**

Fill in the blank space (...) with the appropriate notion.

A ... is a data file that belongs to a temporary tablespace.

Question 3**2 / 2 pts**

Fill in the blank space (...) with the appropriate notion.

An ... is a set of logically contiguous data blocks.

Question 4**2 / 2 pts**

Fill in the blank space (...) with the appropriate notion.

RAID level ... means mirroring and no striping.

Question 5**2 / 2 pts**

Fill in the blank space (...) with the appropriate notion.

... makes it possible to decompose very large tables and indexes into smaller and more manageable pieces.

partitioning

Incorrect

Question 6

0 / 2 pts

Fill in the blank space (...) with the appropriate notion.

RAID level ... means block level striping and no redundancy.

5

Incorrect

Question 7

0 / 2 pts

Fill in the blank space (...) with the appropriate notion.

In case of a ... index, data records are not sorted by the search key.

dense index

Question 8

2 / 2 pts

Fill in the blank space (...) with the appropriate notion.

A ... index is an index on multiple columns in a table.

☒ composite

☐

☐

**Incorrect****Question 9****0 / 2 pts**

Fill in the blank space (...) with the appropriate notion.

A database ... is the combination of the system global area (SGA) and background processes.

Question 10**2 / 2 pts**

Fill in the blank space (...) with the appropriate notion.

A ... is a set of extents allocated for a specific database object, such as a table.

Incorrect**Question 11****0 / 2 pts**

Fill in the blank space (...) with the appropriate notion.

A ... index is an index that has been divided into smaller and more manageable pieces.

Incorrect**Question 12****0 / 2 pts**

Fill in the blank space (...) with the appropriate notion.

... is the time while the first sector of the block moves under the head.

Question 13**2 / 2 pts**

Fill in the blank space (...) with the appropriate notion.

RAID level ... means block level striping with dedicated parity disk.

Question 14**2 / 2 pts**

Fill in the blank space (...) with the appropriate notion.

A ... caches currently and recently used data blocks read from disk.

Question 15**2 / 2 pts**

Fill in the blank space (...) with the appropriate notion.

A ... index has an index entry for every search key value.

Question 16**2 / 2 pts**

Fill in the blank space (...) with the appropriate notion.

A ... index has index entries for only some of the search values, typically one entry per block.

Question 17**2 / 2 pts**

Fill in the blank space (...) with the appropriate notion.

In composite partitioning each partition is further divided into ...

Incorrect**Question 18****0 / 2 pts**

Fill in the blank space (...) with the appropriate notion.

A ... is a group of tables that share common columns and store related data in the same blocks.

Incorrect**Question 19****0 / 2 pts**

Fill in the blank space (...) with the appropriate notion.

All secondary and tertiary storage devices are ... devices.

volatile device

Question 20**2 / 2 pts**

Fill in the blank space (...) with the appropriate notion.

A database ... is a logical storage structure whose size and structure are not known to the operating system.

data block

Question 21**Not yet graded / 4 pts**

What is the cost of the external Sort-Merge algorithm if we know the following parameters:

$B(R)=1000000$, $M=101$?

Your Answer:

$$= 2 * B(R) + 2 * B(R) * \lceil \log(B(R)/M) \rceil - B(R)$$

$$\Rightarrow (\text{around}) = 5000000$$

Question 22**Not yet graded / 4 pts**

What is the cost of a Hash join, if we know the following parameters?

$B(R)=1000$, $B(S)=1500$, $M=100$.

Your Answer:

$$2 * (B(R) + B(S)) + (B(R) + B(S))$$

$$= 7500$$

Question 23**Not yet graded / 4 pts**

Give estimation for $B(R \times S)$, if we know the following parameters: $T(R)=1000$, $T(S)=2000$, $bf(R)=100$, $bf(S)=50$.

Your Answer:

60000

Question 24**Not yet graded / 4 pts**

What is the cost of the improved Block Nested Loop join algorithm if we know the following parameters: $B(R)=1000$, $B(S)=2000$, $M=101$.

Your Answer:

2000

Question 25**Not yet graded / 4 pts**

How many different join trees are there if we join 3 relations R, S, T ?

Your Answer:

6

Quiz Score: **24** out of 60