Started on	Tuesday, 23 March 2021, 10:10 AM
State	Finished
Completed on	Tuesday, 23 March 2021, 10:24 AM
Time taken	14 mins 44 secs
Grade	**5.00** out of 15.00 (**33**%)

Question 1

Correct

Mark 2.00 out of 2.00

Flag question

Variable length records need to be stored in a file under which of the following conditions:

a) When one or more of the columns are of type varchar
b) When we are using multi-table clustering file organization

Select one:

- a only
- b only
- Both a and b ✓
- Neither a nor b

The correct answer is: Both a and b

Question 2

Correct

Mark 2.00 out of 2.00

Flag question

In slotted page structure for storing variable length records, the header contains:

Select one or more:

- Pointer to the end of free space in the block ✓
- Number of record entries ✓
- Null bitmap
- Location and size of each record ✓

The correct answer is: Number of record entries, Pointer to the end of free space in the block, Location and size of each record

Which of the following is/are true about ordered indices?

Question 3

Partially correct

Mark 1.00 out of 2.00

Flag question

Select one or more:

- [x] Secondary indexes can be dense ✓
- [ ] Secondary indexes cannot be sparse
- [ ] Primary indexes cannot be dense
- [ ] Primary indexes are the indexes built on primary keys

The correct answer is: Secondary indexes cannot be sparse, Secondary indexes can be dense

Question 4

Incorrect

Mark 0.00 out of 4.00

Flag question

Consider a B+ Tree where the length of the search key is 20 bytes, each data record pointer has a length of 8 bytes and each node pointer has a length of 4 bytes. Assume block size is 4 KB (1 KB = 1024 bytes). Determine the minimum number of pointers in each non-leaf node other than root.

Answer: 73 ✗

The correct answer is: 86

Question 5

Incorrect

Mark 0.00 out of 5.00

Flag question

Consider that for a B+ tree, the maximum and minimum number of search key values in the leaf nodes are 3 and 2, respectively. The maximum and minimum number of pointers in the non-leaf nodes are 4 and 2, respectively. The number of entries in root node is guided by the standard definition of B+ Trees. [For ease of your understanding, we clarify that the maximum and minimum number of entries in this tree are same as those in the examples we have discussed in the slides for insertion and deletion in B+ Trees.]

Now, assume that the following entries are made sequentially in this B+ Tree.

Ndd, Edd, Gdd, Sdd, Bdd, Cdd, Ddd, Fdd, Kdd, Ldd, Tdd, Wdd where dd denotes the last two digits of your roll number.

For example, if your roll number is 17CS10002, the entries are:
N02, E02, G02, S02, B02, C02, D02, F02, K02, L02, T02, W02.

Determine the total number of pointers in the constructed B+ Tree (including all child node pointers, next leaf node pointers, data pointers and the root node pointer) finally at the end of all the insertions. Note: Do not count any NULL pointers.

Answer: 18 ✗

The correct answer is: 24

Finish review

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