Quiz 8: ISAM & Indexing

Initial Score (out of 10)

Taken by: ____________________________________________

Name
Student ID

- We will discuss the answers right after the quiz.
- You are to self-grade and record your actual initial score (above) as we do so.

Part A:

1) A secondary index is an index that has to have another candidate key (not the primary key) as its search key.
   TRUE  FALSE

2) An index is called a clustered index if its search key order corresponds to the physical (RID or primary key) order of the data records themselves.
   TRUE  FALSE

3) A clustered index can be used for any of the alternatives for its data entries (i.e., records, keys, or key lists), but the first alternative can only be clustered.
   TRUE  FALSE

4) Primary and secondary indexes can be only clustered and unclustered, respectively.
   TRUE  FALSE

5) A clustered index can be made using a composite search key.
   TRUE  FALSE

6) Sometimes scanning the whole relation would be faster than using an index.
   TRUE  FALSE

7) Sequential I/O access can lead to better performance than random I/O access because it reduces the transfer time component of the I/O cost.
   TRUE  FALSE

8) A given table can have multiple clustered and multiple unclustered indexes.
   TRUE  FALSE

9) In ISAM, every time new data is inserted, the whole or a part of the file will be sorted to keep the order of the index the same as the data order.
   TRUE  FALSE

10) This alternative of data entries may lead to variable-sized data entries even if records are fix-sized:
    1) Records as entries  2) RIDs or PKs as entries  3) RID or PK lists as entries

Part B:

Considering the following ISAM tree which is using alternative 1 (data entries). Show what changes occur in this tree when answering each question. Note: At each step, start with the tree still having the changes from the previous part(s). There is no need to re-draw the whole tree at each step; only showing the parts that change will suffice.

A) Insert 35
B) Delete 30
C) Delete 37
C)