CS186 Midterm II Solutions

1. Node1, Node2, Node7, Node8, Node9, Node10, Node11

Out of 2:
-1 for not writing node numbers
-1 for each forgotten/additional root or index node
-1/2 for each forgotten/addition leaf node

2.

Out of 4:
-2 for not splitting index node
-1 for redistribution on leaf pages
-1 for any structural error in result (i.e. having a number of the left of a point be greater than what was pointed to it, having 2 pointers from one pointer spot, forgetting a leaf page, not having a index 50% full etc. etc.)

3.

1 point (all or nothing)

4a.

21 bytes

1 point total, based on answer to 3 (all or nothing)

4b.

2 more entries

1 point total, based on answer to 4a where each additional entry takes at least 5 bytes (all or nothing)
5.

berkeley: 4  database: 5  research: 6

Out of 2:
-1 for forgetting to take the log
-2 for other errors

6.

(termID, docID, position, DocTermRank) or (termID, docID, DocTermRank, position).

Out of 2:
-1 for (termID, docID)
-2 for other errors

7. Any of the following answers were accepted, anything else -2 (out of 2)
   docID, termID -> DocTermRank
   docID, position -> termID
   docID, position -> surrounding_text

8a. T (0.5 points)
   F (0.5 points) (question deemed ambiguous upon grading)

8b. T (1 point)
   F (0 points)

8c. T (0.5 points)
   F (0.5 points) (question deemed ambiguous upon grading)

9.

Out of 2.5:
-0.5 for every incorrect frame.

Answer:

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<tbody>
<tr>
<td>Record evicted</td>
<td></td>
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<td>S</td>
<td>B</td>
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Accesses (not required, but shows our work):

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Out of 2.5:
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11. F (1 point)
   T (0 points)

12. F (1 point)
   T (0 points)

13. E (2 points)
   Otherwise (0 points)

14a. F (1 point)
   T (0 points)

14b. T (1 point)
   F (0 points)

15a. F (1 point)
   T (0 points)

15b. F (1 point)
   T (0 points)

16.

AE, ED, ABC (or some permutation thereof) (2 points)
ADE, ABC (or some permutation thereof) (2 points)
Otherwise (0 points)

17. F (1 point)
18. T (1 point)  
F (0 points)

19. E (1 point)

20. Out of 3; diagram below.

- .5 points per incorrect edge (no double jeopardy for missing both the kitty and puppy edge)
- .5 points per added edge
- .25 points for pointing arrow wrong way
- 1.5 points for swapping all arrows across relations (instead of -3 for all incorrect edges)

21. Out of 1; diagram below.

- .5 points for incorrect "nickname" attribute
- .25 points for all other incorrect attributes