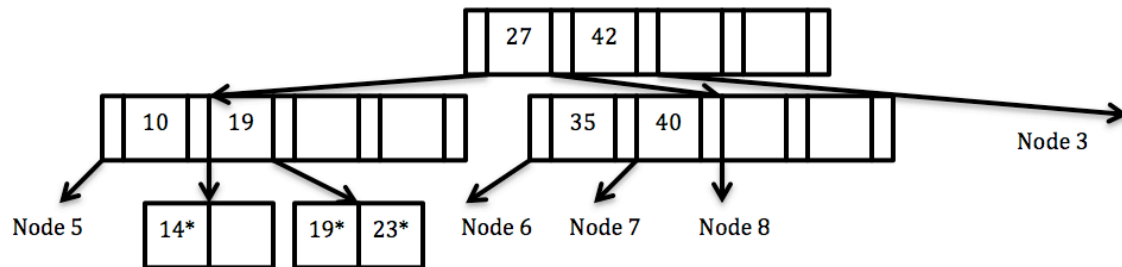# CS186 Midterm II Solutions

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
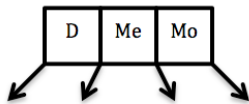-1/2 for each forgotten/addition leaf node

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:

Access #	1	2	3	4	5	6	7	8	9	10
Record evicted				S		B		D	S	B

Accesses (not required, but shows our work):

1	2	3	4	5	6	7	8	9	10
D						D	**S**	B	S
	B			B	C				
		S	**A**						

10.

Out of 2.5:
-0.5 for every incorrect frame.

Answer:

Access #	1	2	3	4	5	6	7	8	9	10
Record evicted				D		S	A	B	C	

Accesses (not required, but shows our work):

1	2	3	4	5	6	7	8	9	10
D			**A**			**D**			
	B						**S**		
		S			**C**			**B**	

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)

T (0 points)

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