UNIVERSITY OF CALIFORNIA EECS, Computer Science Division CS 186, Fall 2008

Written Homework 2: Crash Recovery and Database Design Answer Sheet

| VAME:COURSE ACC | COUNT (cs186-**): | STUDENT ID: | | |
|--|----------------------------------|-----------------------------------|--|--|
| 1. | | | | |
| Dirty Page Table |)• • | | | |
| PID | | RecLSN | | |
| | | | | |
| | | | | |
| | | | | |
| m | • | | | |
| Transaction Table: XID State | | LastLSN | | |
| AID | State | LastLSIN | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| b) When can 3. a) Which log b) Dirty Page | T2 release the locks? A records? | After the update described by LSN | | |
| b) When can 3. a) Which log b) Dirty Page | T2 release the locks? A records? | | | |
| b) When cana) Which logb) Dirty Page | T2 release the locks? A records? | | | |
| b) When cana) Which logb) Dirty Page | T2 release the locks? A records? | | | |
| b) When cana) Which logb) Dirty Page | T2 release the locks? A records? | | | |
| 3. a) Which log | T2 release the locks? A records? | | | |
| b) When can 3. a) Which log b) Dirty Page PID Transaction Tab | T2 release the locks? A records? | | | |
| b) When can 3. a) Which log b) Dirty Page PID | T2 release the locks? A records? | RecLSN | | |
| b) When can 3. a) Which log b) Dirty Page PID Fransaction Tab | T2 release the locks? A records? | RecLSN | | |

| | b) Explain your choice of the oldest log record: | | | | | |
|------|--|---------------------------------------|------|-------------|-----|--------------------|
| | | hich data pages? _ hich operations?] | | | | |
| 5. | a) Which log records? | | | | | |
| | c) Which operations? LSNs | | | | | |
| LS | | Log Record | | PrevLSN | U | UndoNextLSN |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| _ | | | | | | |
| 6. | | | | <u> </u> | | |
| | Kitti | ies | Sna | ap'd | | Snaps |
| | Kitti | ies | Sna | ap'd | | Snaps |
| | Kitti | ies | Sna | ap'd | pho | |
| | | | | ap'd ra_res | pho | |
| ne d | late_jo | age | came | | pho | expires_ |
| ne d | late_jo | age oined ATE TABLE Kitt | came | | pho | expires_ |

| C | REATE TABLE Snapd (| , , |
|-------|---|----------------------------|
|); | PRIMARY KEY (FOREIGN KEY (FOREIGN KEY (|), |
| 8. | | |
| | Kitties | Sent_To |
| nam | e age | num_snaps |
| (| date_joined | |
| 9. C | REATE TABLE Sent_To (| |
| | FOREIGN KEY (|), REFERENCES), REFERENCES |
|); | | |
| 10. C | One or more of A, B, C, D, or E: _ | |