**INSERT**

Operation:

Insert <‘Cecilia’, ‘F’, ‘Kolonsky’, NULL , ‘1960-04-05’, ‘6357 Windy Lane, Katy, TX’, F, 28000, NULL , 4> into EMPLOYEE .

Result: This insertion violates the entity integrity constraint ( NULL for the primary key Ssn ), so it is rejected.

Operation:

Insert <‘Alicia’, ‘J’, ‘Zelaya’, ‘999887777’, ‘1960-04-05’, ‘6357 Windy Lane, Katy, TX’, F, 28000, ‘987654321’, 4> into EMPLOYEE .

Result: This insertion violates the key constraint because another tuple with the same Ssn value already exists in the EMPLOYEE relation, and so it is rejected.

Operation:

Insert <‘Cecilia’, ‘F’, ‘Kolonsky’, ‘677678989’, ‘1960-04-05’, ‘6357 Windswept, Katy, TX’, F, 28000, ‘987654321’, 7> into EMPLOYEE .

Result: This insertion violates the referential integrity constraint specified on Dno in EMPLOYEE because no corresponding referenced tuple exists in DEPARTMENT with Dnumber = 7.

Operation:

Insert <‘Cecilia’, ‘F’, ‘Kolonsky’, ‘677678989’, ‘1960-04-05’, ‘6357 Windy Lane, Katy, TX’, F, 28000, NULL , 4> into EMPLOYEE .

Result: This insertion satisfies all constraints, so it is acceptable.

**DELETION**

Operation:

Delete the WORKS\_ON tuple with Essn = ‘999887777’ and Pno = 10.

Result: This deletion is acceptable and deletes exactly one tuple.

Operation:

Delete the EMPLOYEE tuple with Ssn = ‘999887777’.

Result: This deletion is not acceptable, because there are tuples in WORKS\_ON that refer to this tuple. Hence, if the tuple in EMPLOYEE is deleted, referential integrity violations will result.

Operation:

Delete the EMPLOYEE tuple with Ssn = ‘333445555’.

Result: This deletion will result in even worse referential integrity violations, because the tuple involved is referenced by tuples from the EMPLOYEE , DEPARTMENT , WORKS\_ON , and DEPENDENT relations.

**UPDATE**

Operation:

Update the salary of the EMPLOYEE tuple with Ssn = ‘999887777’ to 28000.

Result: Acceptable.

Operation:

Update the Dno of the EMPLOYEE tuple with Ssn = ‘999887777’ to 1.

Result: Acceptable.

Operation:

Update the Dno of the EMPLOYEE tuple with Ssn = ‘999887777’ to 7.

Result: Unacceptable, because it violates referential integrity.

Operation:

Update the Ssn of the EMPLOYEE tuple with Ssn = ‘999887777’ to ‘987654321’.

Result: Unacceptable, because it violates primary key constraint by repeating a value that already exists as a primary key in another tuple; it violates referential integrity constraints because there are other relations that refer to the existing value of Ssn.